LAND USE HISTORY AND HISTORIC PROPERTY POTENTIAL FOR THE DES MOINES RECREATIONAL RIVER AND GREENBELT PROPOSED RACCOON RIVER REGIONAL PARK WEST DES MOINES, IOWA

CONTRACT NO. DACW25-93-M-0246

PREPARED FOR:

U.S. ARMY CORPS OF ENGINEERS,
ROCK ISLAND DISTRICT
ROCK ISLAND, ILLINOIS

PREPARED BY:

LEAH D. ROGERS, PRINCIPAL INVESTIGATOR
217 NW 5th Street
Mount Vernon, Iowa 52314

MARCH 1993

DEISS/dmd/5185

September 8, 1993

Planning Division (1165-2-26a)

Mr. James E. Jacobsen
Bureau of Historic Preservation
State Historical Society of Iowa
Capitol Complex
Des Moines, Iowa 50319

Dear Mr. Jacobsen:

The Rock Island District of the U.S. Army Corps of Engineers (Corps) and the City of West Des Moines have enclosed the final reports: Land Use History and Historic Property Potential for the Des Moines Recreational River and Greenbelt Proposed Raccoon River Regional Park, West Des Moines, Iowa and Phase I Archaeological Reconnaissance and Architectural Inventory for Selected Areas within the Des Moines Recreational River and Greenbelt Proposed Raccoon River Regional Park, West Des Moines, Iowa, prepared by Ms. Leah D. Rogers, Mount Vernon, Iowa, under Contracts Nos. DACW25-93-M-0246 and DACW25-93-M-0573.

No reply is required for this correspondence. The reports are provided for the Iowa Bureau of Historic Preservation files only, since your office concurred with the findings of the draft reports by letter dated July 19, 1993 (R&C#: 880500054, included within the enclosed report).

The Corps appreciates the contributions your office and Staff Archaeologist Ms. Kathy Gourly have made to the success of this project.

If you have questions or comments concerning the enclosed reports, please call Mr. Ron Deiss of our Environmental Analysis Branch, telephone 309/794-5185, or write to the following address:

District Engineer
U.S. Army Engineer District, Rock Island
ATTN: Planning Division
Clock Tower Building
P.O. Box 2004
Rock Island, Illinois 61204-2004

Sincerely,

ORIGINAL SIGNED BY
PATRICK T. BURKE, P.E.

Dudley M. Hanson, P.E.
Chief, Planning Division

Enclosures

Copies Furnished:

Mr. George May
Martin Marietta Aggregate
11197 Aurora Avenue
Des Moines, Iowa 50322 (wo/enclosures)

Mr. Joe McGuire
Area Manager of Environmental Areas
Martin Marietta Aggregate
P.O. Box 5904
Topeka, Kansas 66605 (wo/enclosures)

Mr. Gary Scott
Parks and Recreation Director
217 5th Street
P.O. Box 65320
West Des Moines, Iowa 50265-3281 (wo/enclosures)

Dist File (PD) (w/encls, 2 cys)
PD (Herrmann) (wo/encls)
PD-E (Deiss) (w/encls)
PD-E (Kraciun) (wo/encls)
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ED (wo/encls)
ED-DG (Cerny) (wo/encls)
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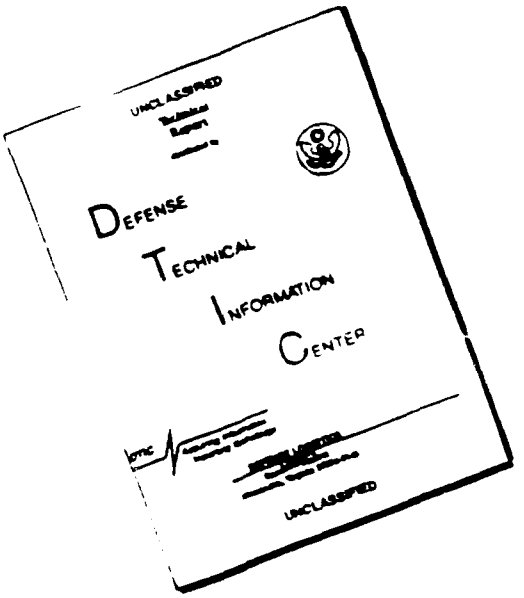

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LAND USE HISTORY AND HISTORIC PROPERTY POTENTIAL FOR THE DES MOINES RECREATIONAL RIVER AND GREENBELT PROPOSED RACCOON RIVER REGIONAL PARK WEST DES MOINES, IOWA

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ABSTRACT

This project represents the results of a land use history study for the proposed Raccoon River Regional Park in West Des Moines, Iowa. This study involved archival research, oral history interviews, and field reconnaissance to determine the potential for significant historic properties within the boundaries of the proposed park. This area has been heavily impacted by extensive sand quarrying for over 40 years, and it was questioned as to whether there was any potential at all for intact historic properties. Archival and oral historical research into the land use history of this area indicated that, historically, the majority of the project area was relatively inaccessible and flood prone throughout the nineteenth century, thus inhibiting actual settlement until the early twentieth century when river channel changes made the area more accessible. One farmstead was known to have been located within the borders of the project area, although portions were subsequently destroyed by the sand and gravel mining operation. The study identified five areas that have remained relatively intact and have some archaeological potential. These areas total approximately 48 ac (19.2 ha) and will require a Phase I cultural resources investigation to assure that no significant historic properties will be impacted by the proposed construction.

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INTRODUCTION

This report presents the results of a land use history study of the proposed Raccoon River Regional Park of the Des Moines Recreational River and Greenbelt in West Des Moines, Polk County, Iowa (Figure 1). The investigation was conducted for the U.S. Army Corps of Engineers, Rock Island District, Rock Island, Illinois.

The purpose of this investigation was to examine the land use history of the proposed project area in order to evaluate the potential for significant historic properties within that area. Historic properties include historical, archaeological, and architectural resources. The work was conducted to provide federal and state reviewing agencies with documentation of the project area's land use history and to assess the need for a Phase I cultural resources investigation. The Principal Investigator is solely responsible for the content and accuracy of this report with respect to land use history, site potential, and recommendations.

The project was conducted by Principal Investigator, Leah D. Rogers, in December 1992-February 1993. The report is authored by the Principal Investigator.

PROJECT DESCRIPTION

The Raccoon River Regional Park is located in portions of Sections 15, 21, and 22, T78N-R25W, Walnut Township, Polk County, Iowa (Figure 2). The project parcel includes agricultural, riverine, and abandoned commercial mining land on the north side of the Raccoon River at the southwest corner, and just outside, of the Des Moines city boundary (see Figures 1 and 2). The mining land consists of flooded quarry pits, the largest of which constitutes a 250 acre lake, borrow areas, built-up haul roads, and an area where approximately 10 ft of fill from the adjacent sand and gravel pits was re-deposited on undisturbed land in the late 1960s. The mining operations began in the mid-1940s and continued until recently.

The Raccoon River Regional Park began as the Martin Marietta Recreation Area in 1986 when it was submitted as a potential project for the Des Moines Recreational River and Greenbelt. By 1987 the City of West Des Moines, Polk County, and the State of Iowa had shown interest in the project, and it was selected as one of 13 "key" projects in the greenbelt system. In 1988 the City, County, and State entered into a 28E Agreement to facilitate the acquisition, development, and management of the Raccoon River park area. This was followed by the initiation of a Site Development Plan which resulted in the hiring of Stanley Consultants, Inc., of Des Moines to prepare a Master Plan which was completed in July of 1991. In late 1991 Polk County decided to discontinue their involvement in the proposed environmental education center in order to focus their resources elsewhere, thus limiting their overall involvement in the park plan. At present, the City of West Des Moines owns two parcels of land to the west and east of the lake at the north edge of the project area. The Master Plan design for the park includes facilities for softball, soccer, volleyball, tennis, basketball, boating, fishing, canoeing, and swimming as well as a system of foot and bike trails, picnic areas, and nature areas (Anonymous 1992; Stanley Consultants et al. 1991). Figure 3 shows the present design plans for the Raccoon River Recreational Park.

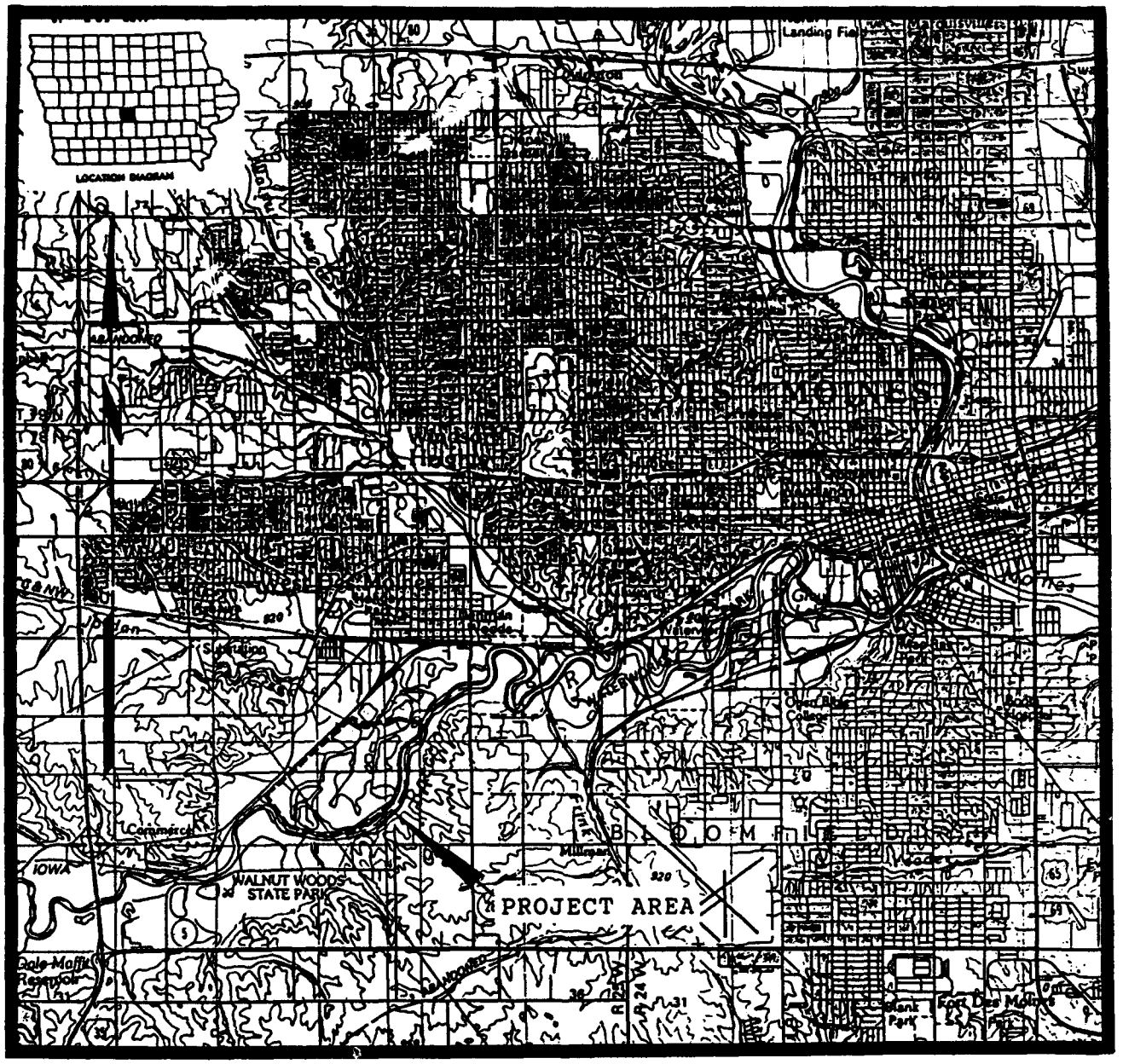


Figure 1. Project Location.
Source: USGS Polk County Topographic Map, 1986
Scale: 1:100,000

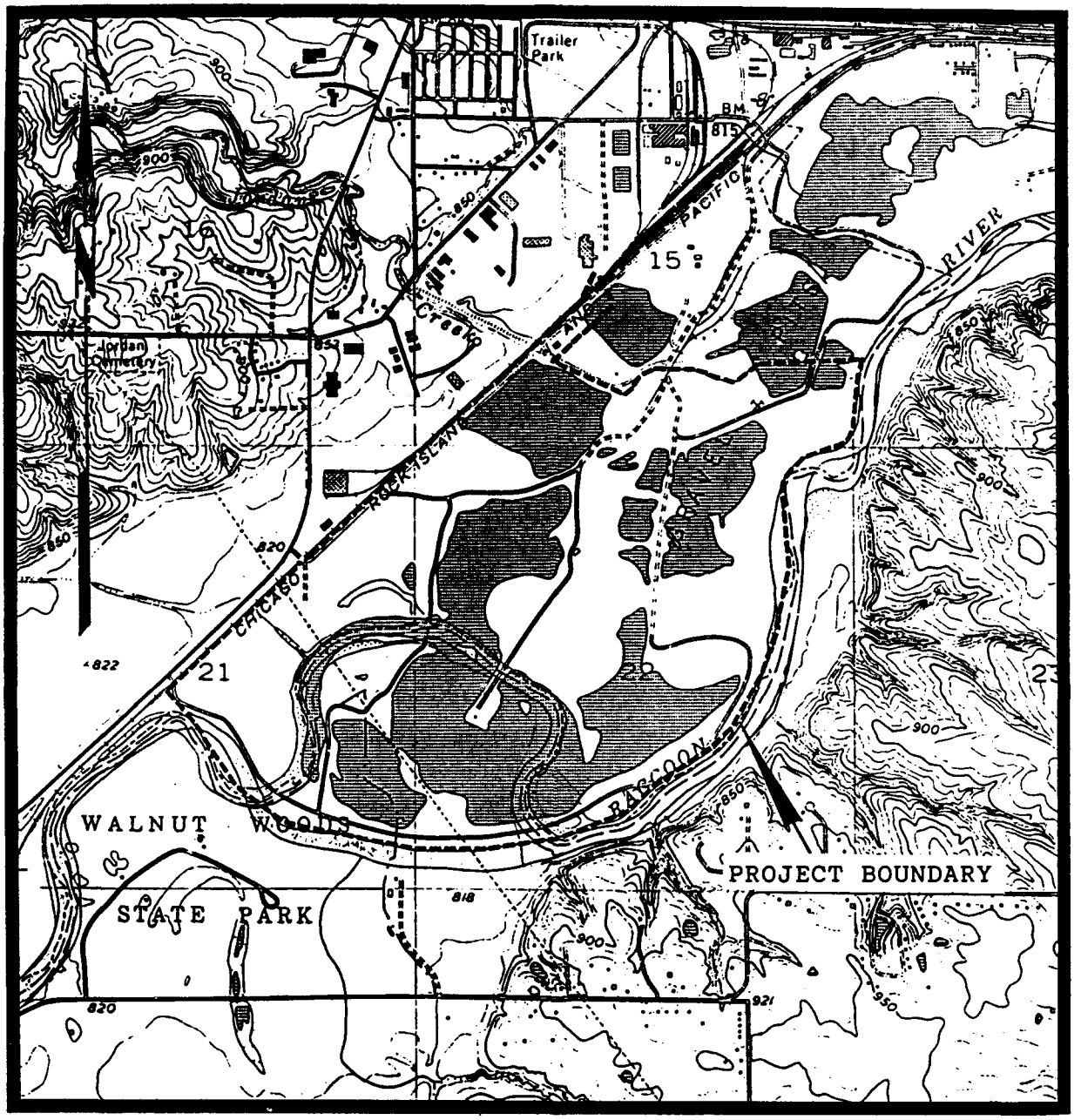


Figure 2. Project Area.
Source: USGS Des Moines SW, 1956 (photorevised 1967, 1971 and 1976), 7.5' series quad map
Scale: 1:24,000

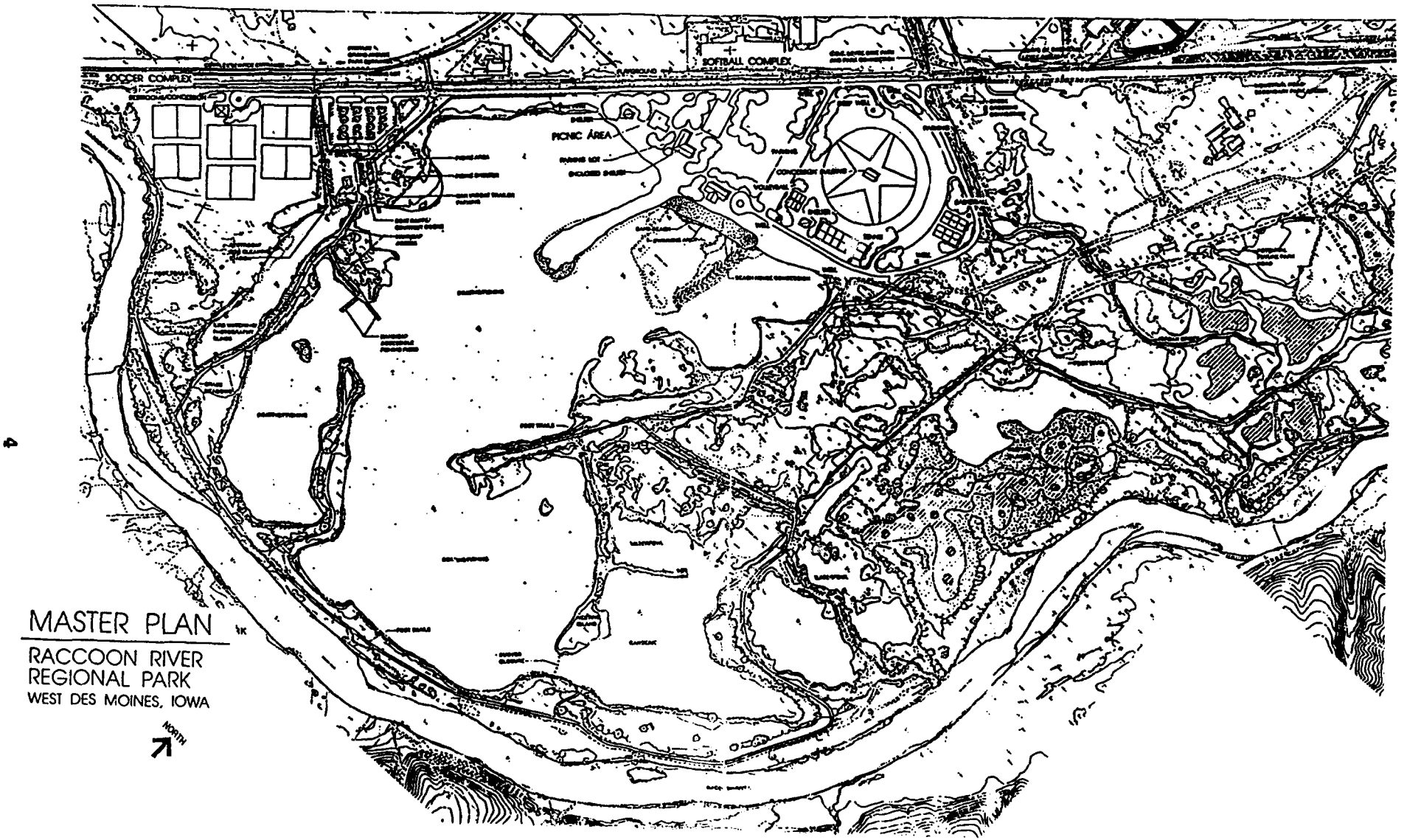


Figure 3. Master Plan Map of Raccoon River Regional Park.

DESCRIPTION OF THE PROJECT AREA

The proposed project area is situated at the southern edge of the landform region known as the Des Moines Lobe (Prior 1991:31). This region was formed by deposition from a lobe of the Laurentide Ice Sheet which surged into northcentral Iowa during the latter part of the Wisconsinan stage of the Pleistocene Epoch. The initial advance of the Des Moines Lobe ice sheet into Iowa began approximately 14,000 years before present (B.P.) and had almost entirely receded from the state by approximately 13,000 years B.P. (Bettis 1990; Hallberg et al. 1990). The advance halted at what is now the City of Des Moines and is marked by the Bemis end moraine. This advance also resulted in the establishment of the present course of the Raccoon River. Since the final retreat of this ice sheet, weathering and erosion have modified the landscape to some degree, but compared with other regions in Iowa, the topography and landforms "still retain the distinct imprints of recent glacial occupation" (Prior 1991:47). Furthermore, this region lacks the loess mantle which is characteristic of other regions because the final surge of glacial ice occurred during and after the period of greatest loess deposition in the state (Ibid.).

The topography of the Des Moines Lobe region is characterized by flat to slightly irregular terrain, with bands of rough, knobby terrain and relatively poor drainage. Bogs, swales, depressions, glacial lakes, marshes, and sluggish streams are typical of this poor drainage system. Glacial till underlies nearly the entire region with cobbles and boulders scattered as surface erratics over the landscape. The few rivers which drain this region have excavated deep valleys and have extensive sand and gravel terraces. The largest of these rivers is the Des Moines River which flows generally down the axis of the Des Moines Lobe region. This steep-sided, narrow river valley was formed through rapid excavation by swift, glacial meltwater. Some uneroded outwash deposit remnants are evidenced by terraces along the valley sides and are often quarried for commercial sand and gravel production (Prior 1991:36-47). Likewise, the extensive alluvial sand and gravel deposits along the Raccoon River, including those in the project area, have been commercially quarried over the years.

The project area is situated along the north bank of the Raccoon River approximately 6 mi (9.6 km) southwest of the confluence with the Des Moines River (see Figure 1). Within the project area, the terrain is characterized by level, alluvial floodplain where it has not been disturbed by the sand and gravel mining operations (Plates 1-6). The two parcels of city-owned land are low terraces that are currently in cultivation and have forested margins where the parcels abut the lake, river channel, and Jordan Creek (see Plates 1-3 and 6). Figure 4 shows the present configuration of the project area. The majority of this area has been disturbed to varying degrees by the post-1945 sand and gravel mining activities (see Plates 4 and 5).

The general soils in the project area are nearly level soils that formed in outwash and alluvium (McCracken 1960:General Soil Map). The soil types mapped in the project area prior to extensive sand and gravel mining included Huntsville silt loam (keyed as Hf on Figure 5), Cooper silt loam (Ct), Alluvial Land (Ac), Kato loam (KbA), and Waukegan loam (WeC) (McCracken 1960). Of these soil areas, most of the areas mapped as Huntsville, Waukegan, and Alluvial Land have since been quarried out to well below the water table. Those areas that are relatively intact and/or buried underneath re-deposited borrow include areas mapped as Cooper silt loam and Huntsville silt loam (see Figures 4 and 5). Cooper silt loam consists of poorly drained soil that occurs on low terraces or second bottoms along the Des Moines and Raccoon rivers and formed in alluvium,

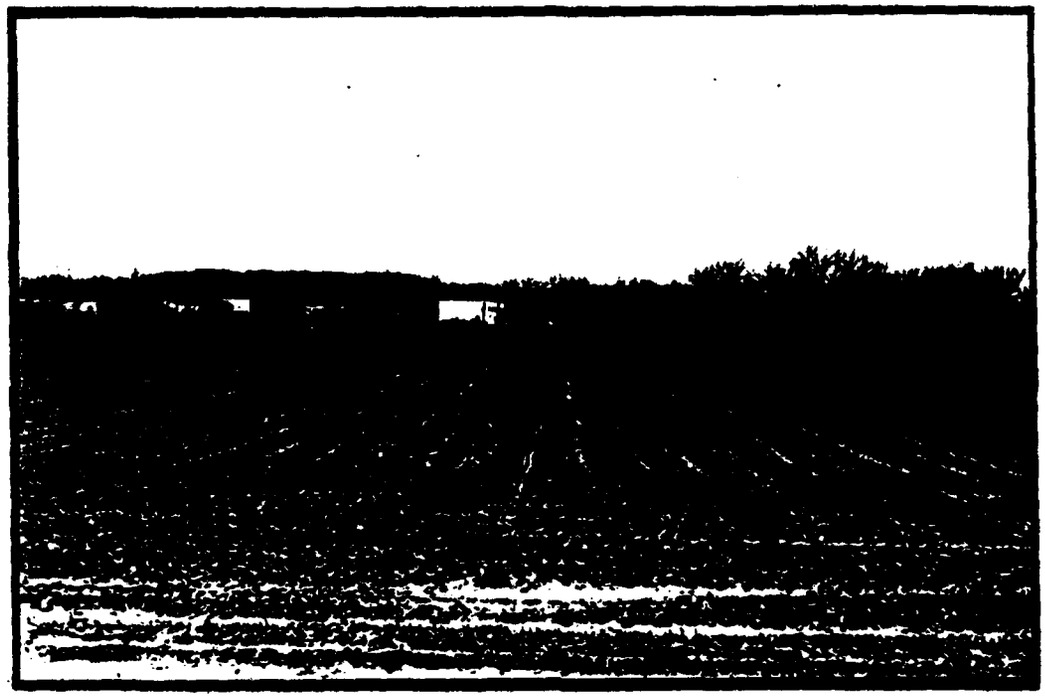


Plate 1. Cultivated Field in Northeast Corner of Project Area, View to the Northwest.
Field Date: December 17, 1992

Plate 2. Snow-Covered Cultivated Field in Northwest Corner of Project Area, View to the Southwest.
Field Date: February 4, 1993

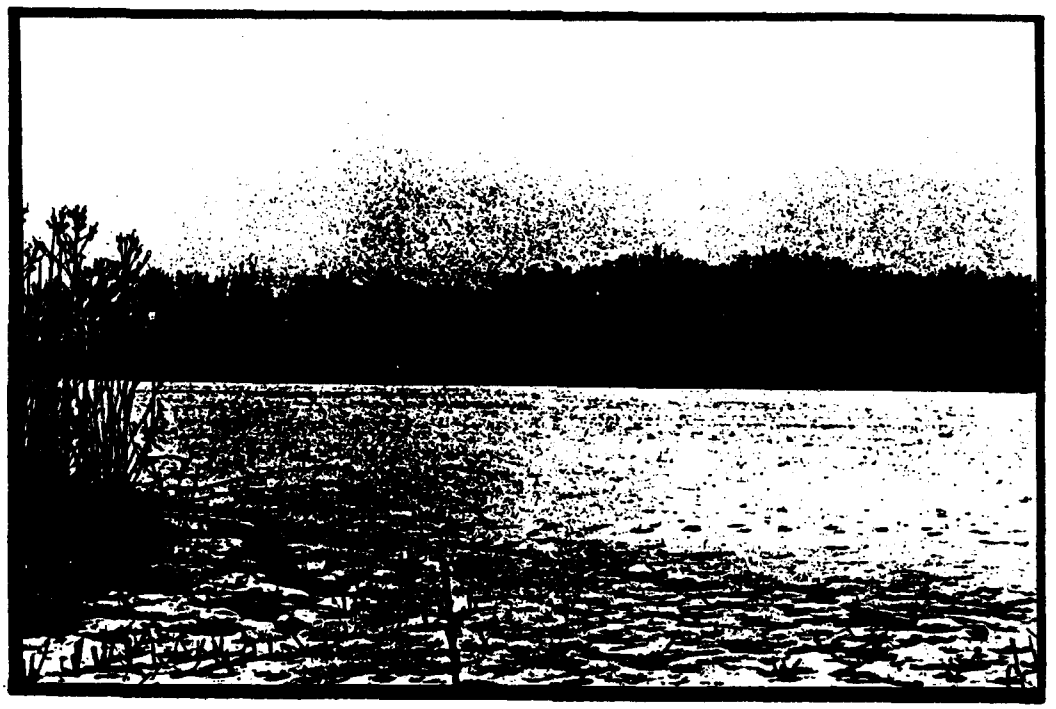


Plate 3. Snow-Covered Cultivated Field in Extreme Northwest Corner of Project Area, View to the South.
Field Date: February 4, 1993

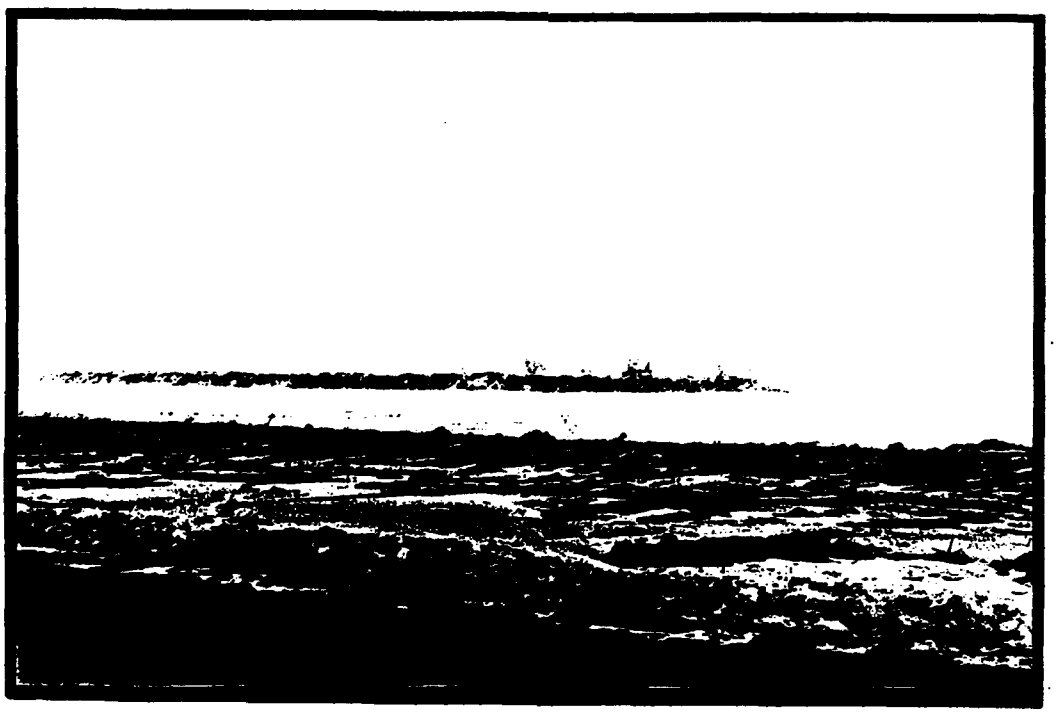


Plate 4. Quarry Lake and Haul Road, View to the South-Southeast.
Field Date: February 4, 1993

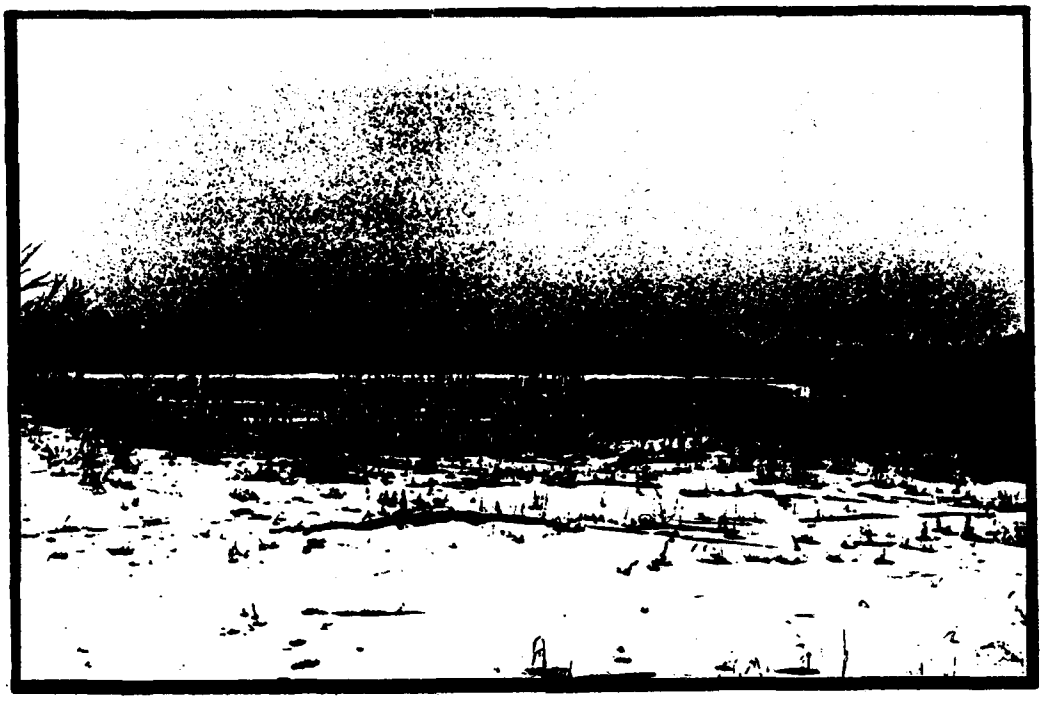


Plate 5. Smaller Quarry Pit in Southeast Portion of Project Area, View to the Northwest.
Field Date: February 4, 1993

Plate 6. Abandoned River Channel in Northwest Portion of Project Area, View to the South.
Field Date: February 4, 1993

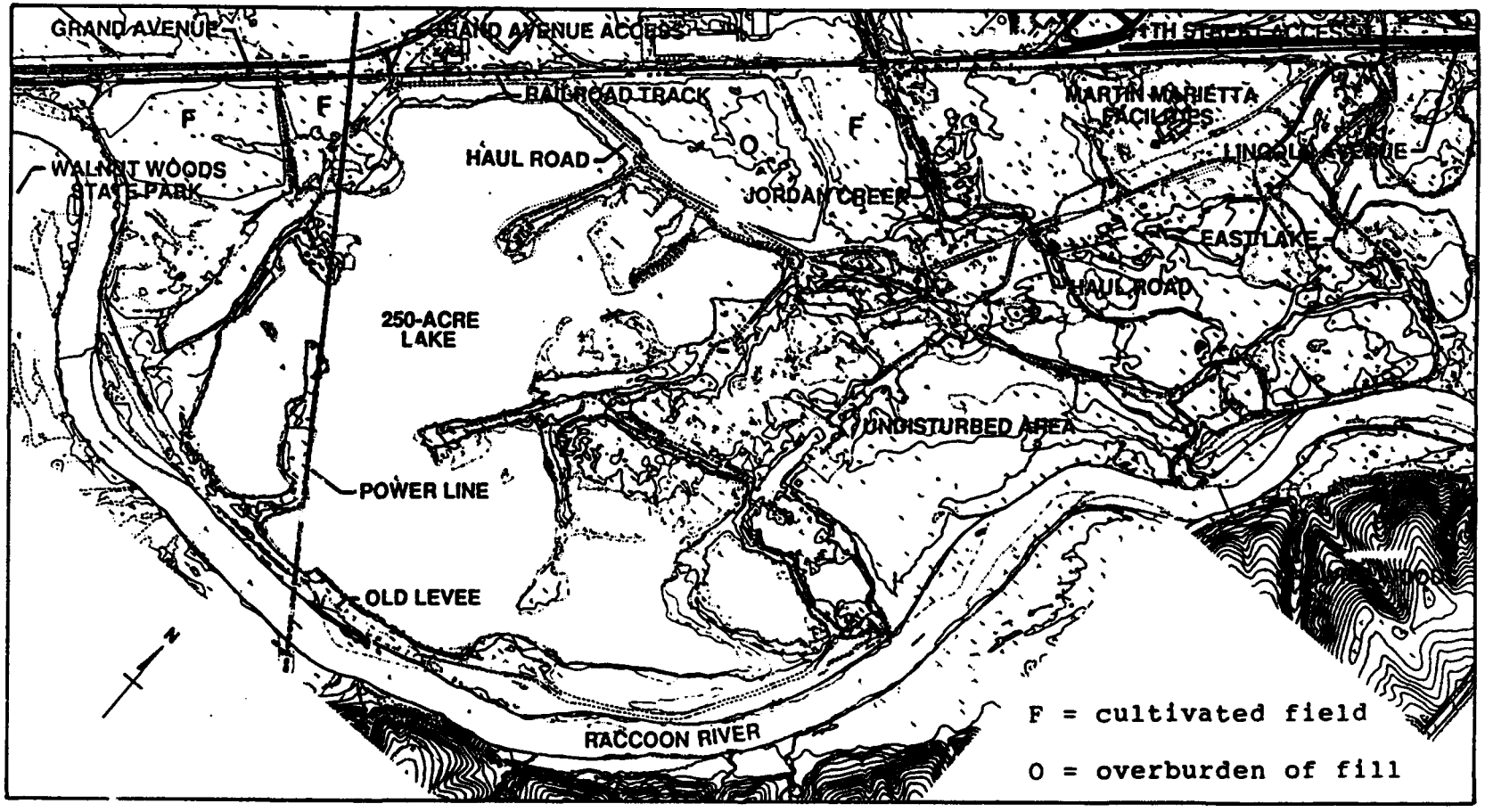


Figure 4. Map of Existing Site Features.
Source: Stanley Consultants et al. 1991

Figure 5. Soil Survey Map of Project Area.
Source: McCracken 1960:Sheet No. 13 and 1950 Aerial Photo

while the Huntsville silt loam consists of poorly to moderately well drained soil that occurs on bottom lands and formed in alluvium under a native vegetation of trees and/or prairie grass (Ibid.).

Borings taken by Terracon Consultants NE, Inc., as part of the Master Plan evaluation (Stanley Consultants et al. 1991:Appendix D), examined the soil profiles of selected areas of the proposed park. In the area of the proposed wildlife area in the southeast portion of the project area (see Figure 3), one soil boring revealed a profile that "generally consists of about 55 feet of sand deposits overlying a weathered clay shale "bedrock," typical to the area" (Ibid.:D-2). The soil survey mapped much of this area as alluvial land, with abandoned meander channel scars clearly visible on the 1950 aerial photograph (see Figure 5).

Additional soil borings in the area of the proposed softball complex (see Figure 3) revealed an area of approximately 10 feet of fill overlying 10 feet of black topsoil and brown silty clay (Stanley Consultants et al. 1991:D-2). This location is visible as a prominent mounded area on the northeast side of the main haul road and is presently under cultivation (Plates 7 and 8). In general, the areas along the northwest edge of the project area immediately adjacent and parallel to the railroad tracks (see Figures 2 and 4), were either undisturbed by the mining operations or have an overburden of fill burying an undisturbed, former ground surface. The main impact to these remnant areas has been from cultivation.

METHODS

Prior to the initiation of the fieldwork, a comprehensive review was undertaken of all pertinent archaeological and historical literature and state records. This review included an examination of the following: the archaeological site records and reports on file at the Office of the State Archaeologist in Iowa City; the historic maps and atlases and county history books on file at the State Historical Society of Iowa Library and Archives in Des Moines; aerial photographs on file in the Map Collections of the University of Iowa Library in Iowa City; the Polk County soil survey; and the 1991 Master Plan for the Raccoon River Regional Park.

The field study was conducted on December 17, 1992, and February 4, 1993, as weather conditions permitted. The fieldwork simply involved a drive-through and limited walk-over of the accessible areas of the proposed park in order to assess the extent of disturbance from the mining operations. Photographs were taken of representative views of this area. This study did not include a Phase I-level pedestrian surface survey and cannot provide project clearance.

In addition to the archival research and field examination, Gary Scott of the West Des Moines Parks and Recreation office, Bob Meskimen, George May, and Joe McGuire of Martin Marietta Corporation, Ernie Swanson of Des Moines, and Art Bettis of the Iowa Department of Natural Resources in Iowa City were contacted for information concerning the project area. These interviews were conducted either in person or by telephone and were documented in the project notes.

Plate 7. Mounded Area of Fill on Northeast Side of Main Haul Road, View to the Northeast.
Field Date: December 17, 1992

Plate 8. Northeast Edge of Fill Overburden Where it Abuts Field in the Northeast Corner of the Project Area, View to the North.
Field Date: February 4, 1993

RESULTS OF THE INVESTIGATION

A records search conducted at the Office of the State Archaeologist in Iowa City revealed that there are no previously recorded sites in the project area. The nearest recorded sites are 13PK56 and 13PK478 which are located on the south side of the Raccoon River within one-half mile or less from the project area. Site 13PK56 is an undetermined prehistoric site located on a terrace of the Raccoon River floodplain directly south of the project area. This site was recorded as part of the CIRALG survey in 1980. Site 13PK478 is a prehistoric site consisting of a corner-notched projectile point found on a gravel bar on the south side of the Raccoon River within Brown's Wood Park. It is directly across the river from the southeastern portion of the project area.

The available maps of the project area date from 1847-1960, with the earliest being the General Land Office original survey map (United States 1847). Other maps of interest included the 1872, 1885, and 1895 maps of Polk County (Iowa Engineering 1895; McVicker 1872; Warner and Foote 1885), the 1904 and 1907 topographical maps of Polk County (Iowa Publishing Company 1904; U.S.G.S. 1907), and the 1918 soil map of Polk County (Anonymous 1918). These maps show that the earliest historic settlement within the project boundaries dates from c. 1907 when a farmstead was established in the NW1/4 of Section 22. Two main buildings of this farmstead were shown on the 1907 topographic map (Figure 6). By the mid-1940s this farmstead was owned by the Elbert family and consisted of a main house, several hired-hand houses, a cattle shed, barn, and other outbuildings (Swanson, personal communication 1993). The pre-1907 maps showed no indication of this farmstead, suggesting that it originated in the early twentieth century. The nineteenth century maps further show that until c. 1904, a large portion of the project area was cut off by an oxbow or old meander channel of the Raccoon River which effectively made this portion an island (Figures 7-11). Access appears to have been limited during this period, thus inhibiting actual settlement.

According to the county history books, the earliest historic settlement in the project vicinity was made by John C. Jordan who built a cabin "six miles west of Des Moines" in the late 1840s (Dixon 1876:86; Union Historical Company 1880:358). This early settlement was made in Section 16, T78N-R25W, to the northwest of the project area. Jordan Creek is named in his honor. A later home of Jordan at this location is now a historic museum and is representative of the early settlement of the West Des Moines vicinity. Jordan did initially own the entire project area as indicated on the 1872 and 1885 maps (see Figures 8 and 9), but by 1895 B.F. Elliott was the majority owner (see Figure 10).

An oral history interview was conducted with Ernie Swanson of Des Moines to supplement the archival research. Mr. Swanson was a long-time employee of Martin Marietta and served as site manager for a number of years. He began his employment with this company in February of 1946, just after Martin Marietta had purchased the Raccoon River project area for mining purposes, and remained with the company for 30 years. According to Mr. Swanson (Personal communication 1993), the only buildings on the property were those of the Elbert farmstead, which he described as a big cattle ranch. The rich bottomlands and abundant water resources would have made for good livestock pasture and hay fields.

Mr. Swanson also recalled that during the course of the sand and gravel mining operations, a number of Indian arrow points, bison skulls and bones, and mastodon teeth were recovered from the dredge pump (Swanson, personal communication 1993). The depth of the material could not be

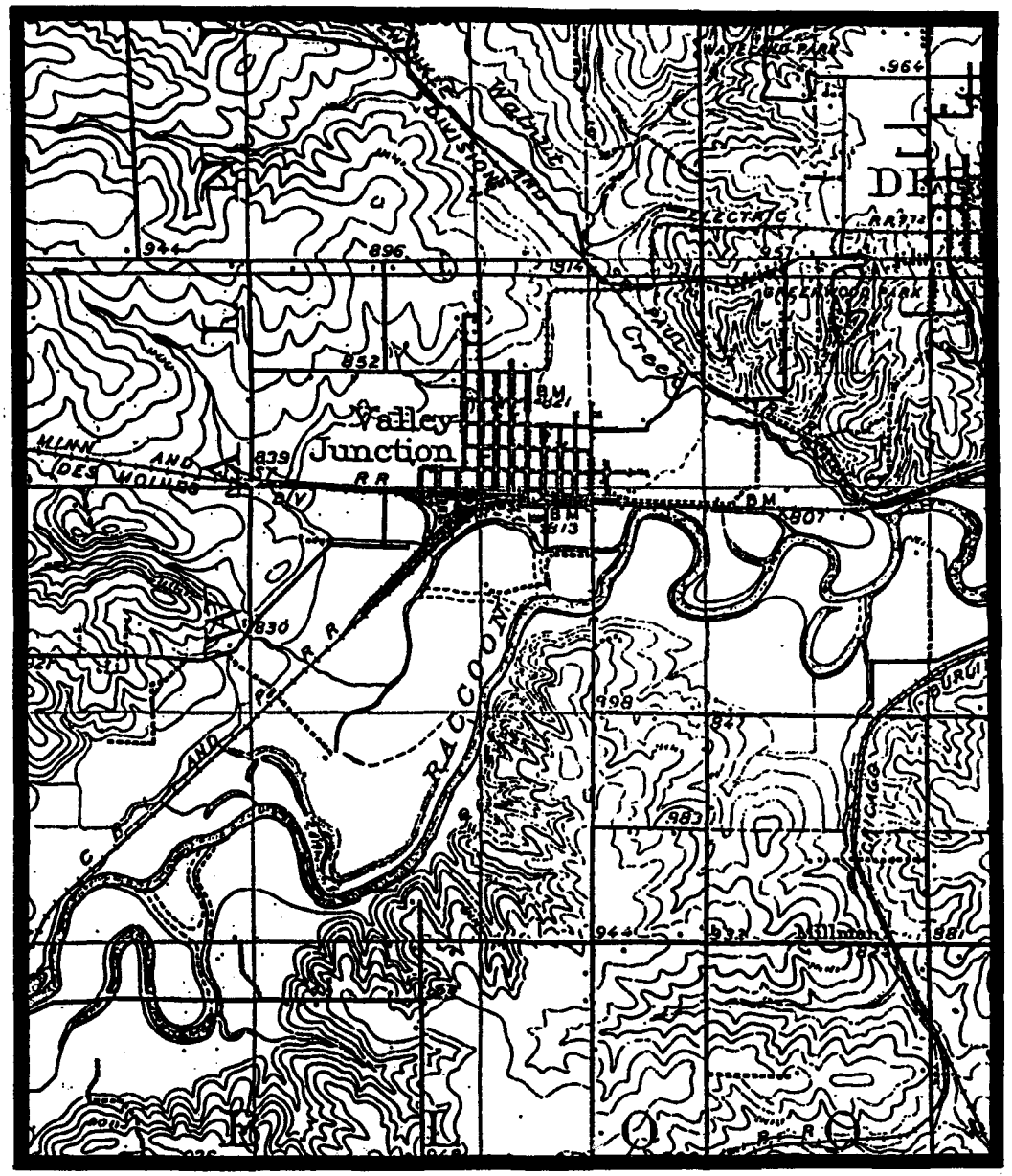


Figure 6. 1907 Topographic Map Showing Project Area and Farmstead Buildings.
Source: USGS 1907; State Archives, Des Moines

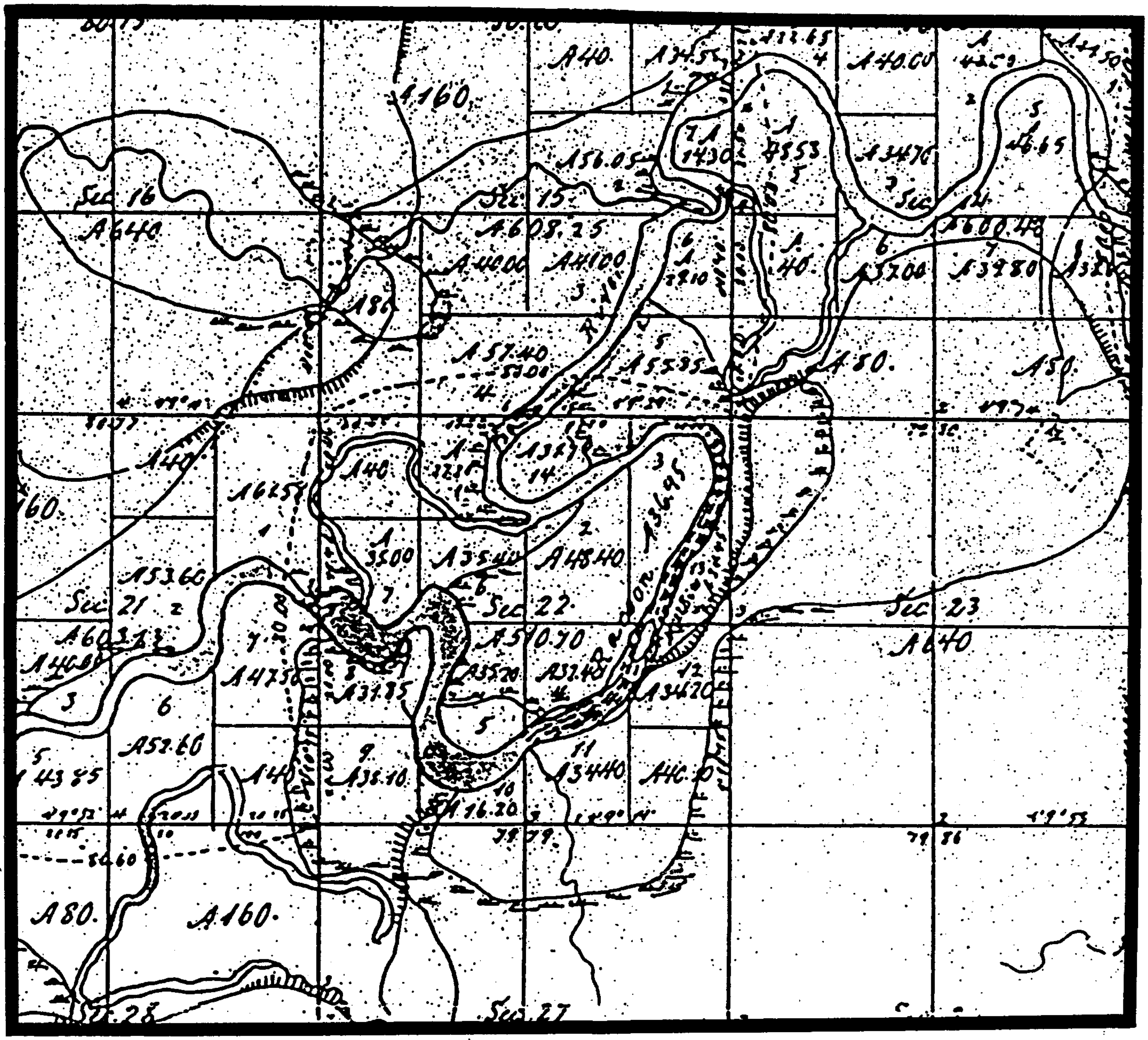


Figure 7. General Land Office Original Survey Map of Project Area.
Source: United States 1847

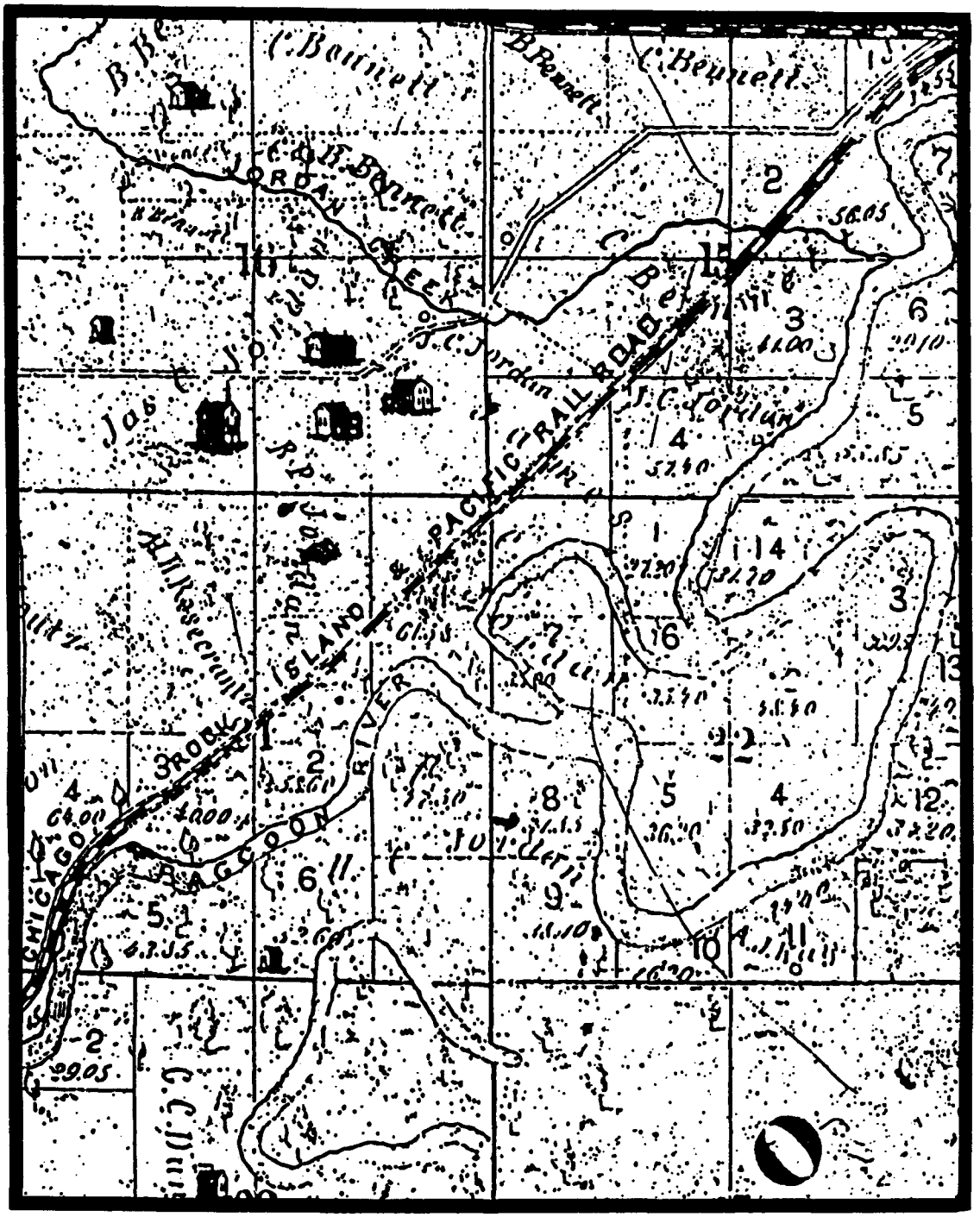


Figure 8. 1872 Map of Project Area.
Source: McVicker 1872

Figure 9. 1885 Map of Project Area.
Source: Warner and Foote 1885

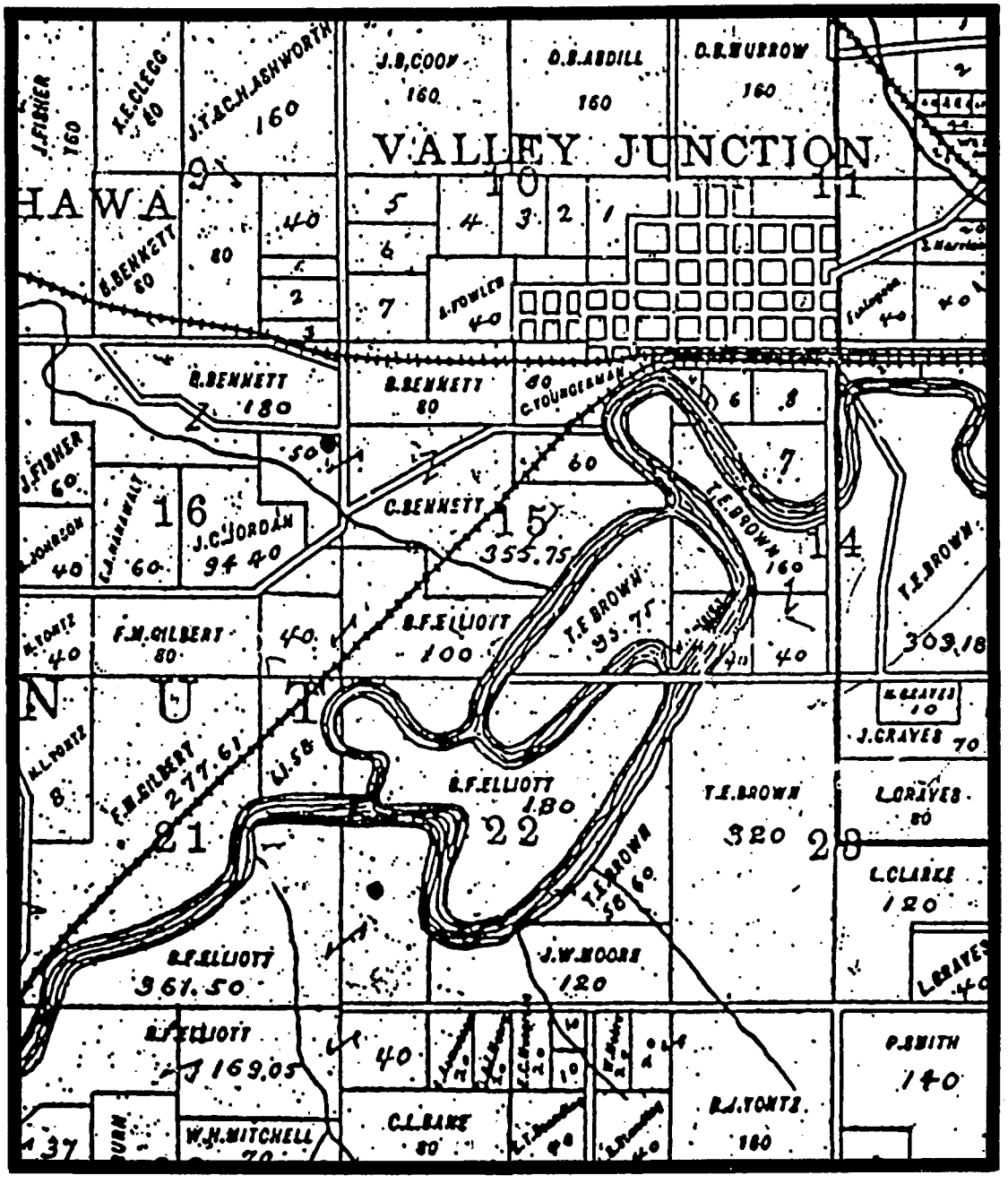


Figure 10. 1895 Map of Project Area.
Source: Iowa Engineering 1895

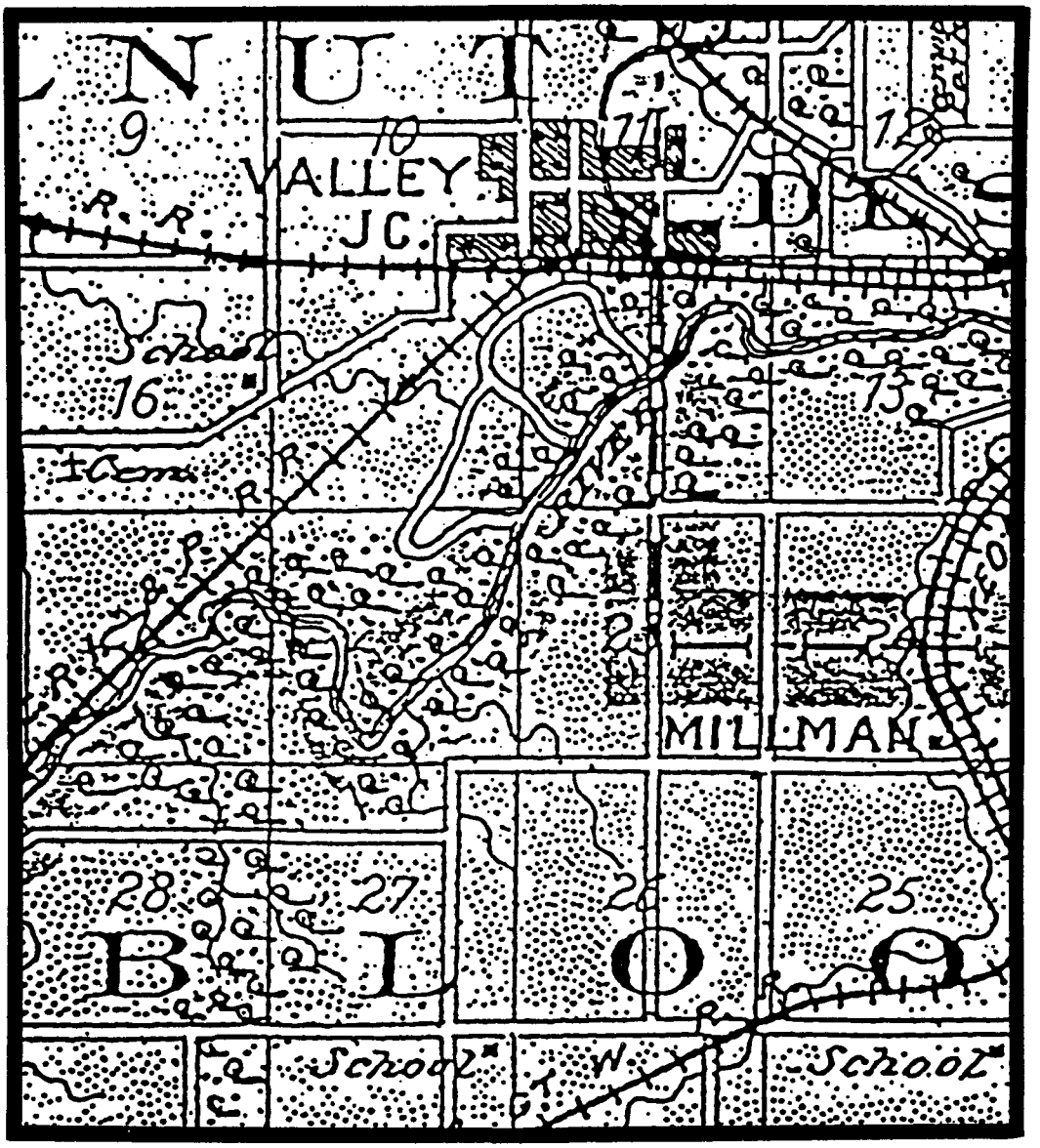


Figure 11. 1904 Map of Project Area.
Source: Iowa Publishing Company 1904

pinpointed because the dredging was done underwater. One of the workman had an extensive artifact collection; unfortunately, he is now deceased and the whereabouts of the collection is unknown. The material was recovered from over the entire Martin Marietta property including the Raccoon River Park project area. Native American occupation of the project area potentially could have spanned virtually the entire prehistoric period and into the early historic period, although the frequent flooding of this area would have limited occupation spans and utilization.

Examination of the aerial photographs dating from 1950-1967 provided further data on the land use history of the project area. The 1950 aerial photograph formed the base map for the Polk County soil survey and is shown in Figure 5. This aerial photograph clearly shows the abandoned river channel meander scars within the project boundaries as well as the farmstead and surrounding fields and the beginnings of the Martin Marietta mining operations. At that time, these operations were to the northeast of the project area, although one large pit extended into the southeastern portion of this area (see Figure 5). By 1961 the mining operations had extended well into the project area to the northeast and southeast of the farmstead (Figure 12). By 1967 the mining had extended even further to the southwest including portions of the farmstead itself (Figure 13). The fill overburden noted previously in the area of the proposed softball complex appears to have been in place by 1967 and shows a sharp contrast to the agricultural field immediately adjacent to the northeast. Since that time the mining operations expanded to the northwest creating the full extent of the present 250 acre lake (see Figures 13 and 4). In addition, the c. 1967 river channel in the southwest portion of the project area was diverted further to the southwest by the "Martin Marietta Cutoff" in the late 1960s-early 1970s. The bottomland area in-between the cutoff and the c. 1967 river channel was then largely removed through dredging (see Figure 4).

While the Martin Marietta Corporation still owns most of the project area, the excavation of sand and gravel has been concluded although sorting, shipping, and maintenance operations continue (Stanley Consultants et al. 1991:I-5). The field areas along the northwest edge of the project area have been intensively cultivated throughout the twentieth century and likely into the nineteenth century and continue to be cultivated by nonresident tenant farmers.

The limited field survey resulted in the confirmation of the major undisturbed versus disturbed areas and pinpointed several areas that are in need of a Phase I level cultural resources investigation prior to project construction. These areas are indicated on Figure 14 and include those areas along the northwestern boundary that are "virgin ground" in that they have not been adversely impacted by the mining operations, with the only impacts having been from cultivation (Swanson, personal communication 1993). These areas include one that was erroneously identified as a gravel pit on the photorevised topographic map (see Figure 2). The photorevisions were accomplished by utilizing aerial photographs, and this area was likely incorrectly identified as a pit because of the abnormal and contrasting elevation of the fill overburden that was placed adjacent to this area after 1956. The area covered by the fill overburden does not require further investigation because, according to the present project plans, this area will not impacted below the fill layer.

Another of the areas pinpointed for further investigation is the remnant of undisturbed ground surrounding the extant cattle shed and where the former farmstead was located. While this area does not have a high potential for significant archaeological remains, it does require some limited investigation in order to fully evaluate the farmstead remnant.

Figure 12. 1961 Aerial Photograph of Project Area.
Source: University of Iowa Map Collections

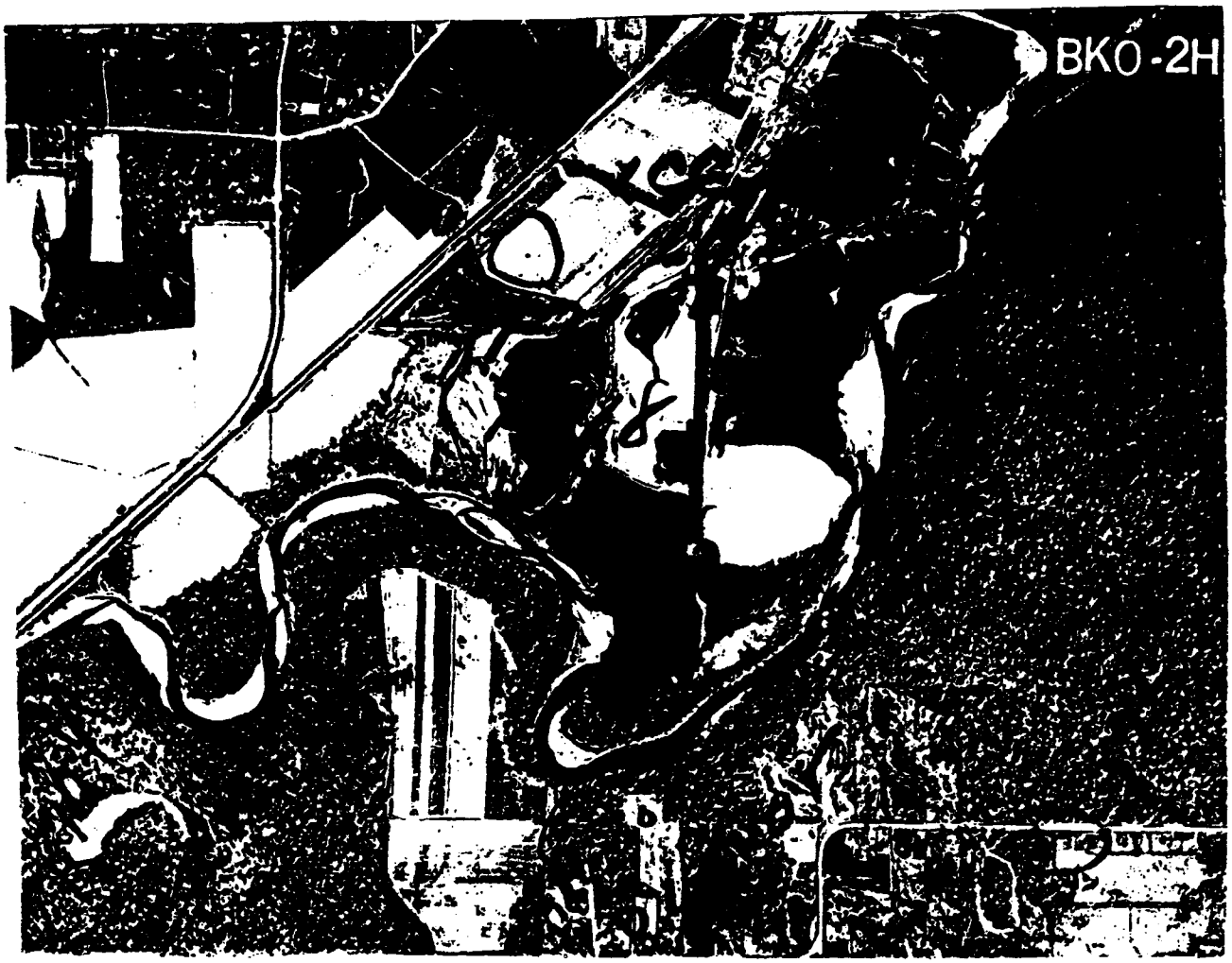
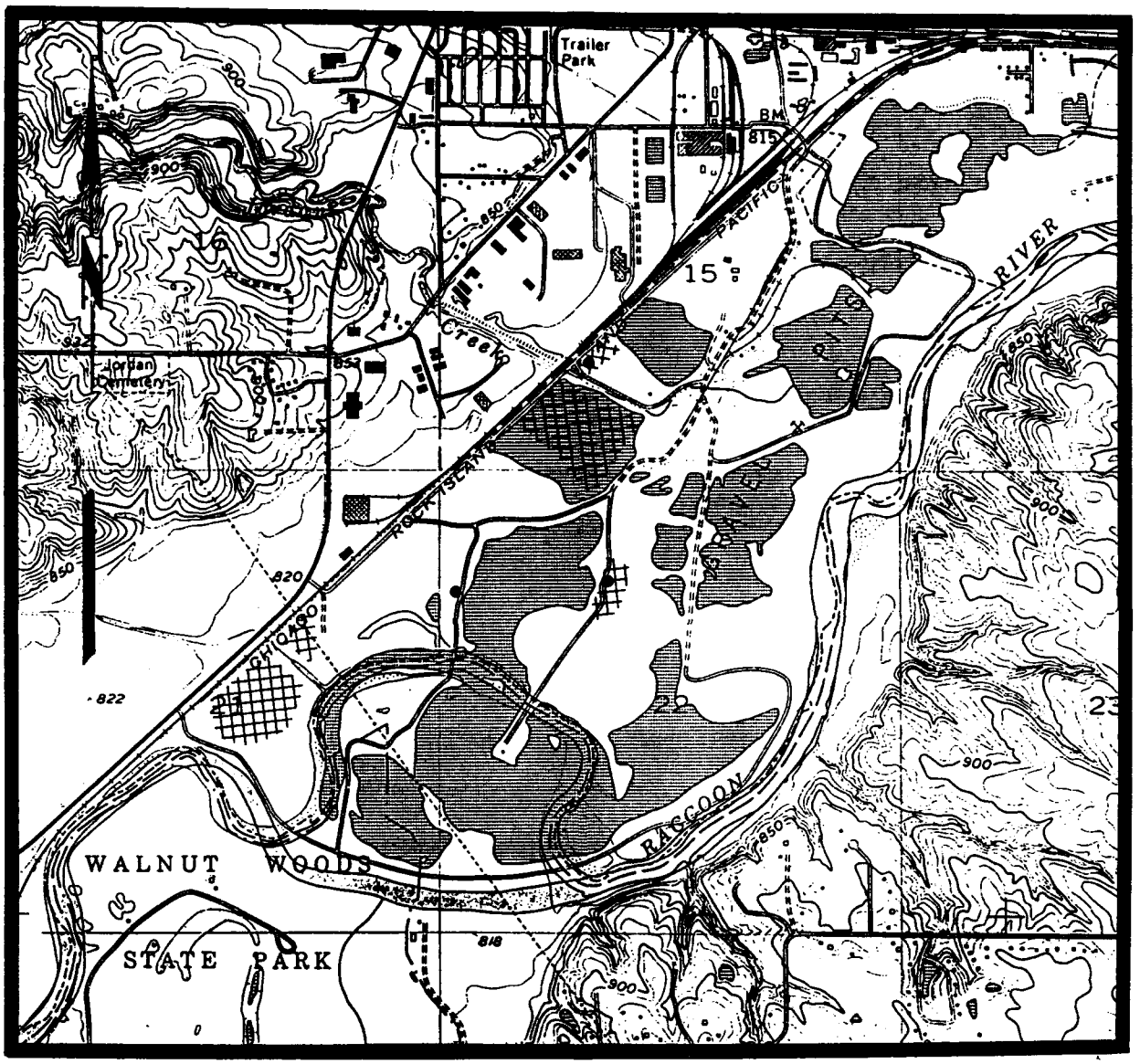


Figure 13. 1967 Aerial Photograph of Project Area.
Source: University of Iowa Map Collections



● = Structures to be recorded

▨ = Areas recommended for survey

■ = Gravel pits indicated on quad map--not all are located correctly.

Figure 14. Areas Recommended for Phase I Investigation.

The building itself, along with two other extant buildings associated with the mining operation, should be recorded in the Iowa Site Inventory even though all appear to be post-1943 buildings. The recording of these buildings should be limited to a brief architectural/historical description, location identification, and representative photographs.

The remnant "undisturbed" areas in the southeast portion of the project area are considered to have a low cultural resource potential and do not warrant further investigation. There is some potential for paleontological finds in this area and if any major finds are encountered during the construction process, the U.S. Army Corps of Engineers, Rock Island District, should be notified.

The greatest archaeological potential within the pinpointed areas is for Native American sites dating from the prehistoric and/or historic contact periods. This potential has been demonstrated by the "Indian arrow points" recovered during the Martin Marietta dredging operations in this vicinity and by the presence of recorded prehistoric sites in landform positions similar to those in the project area (i.e., sites 13PK56 and 13PK478). The depth of these potential cultural deposits could be at or near the present ground surface, with some potential for buried material below the present plow zone. According to Art Bettis of the Iowa Department of Natural Resources, the low terraces in this area have a veneer of Holocene deposits of depths that can reach 2-2.5 m and overlying sand and gravel deposits (Bettis, personal communication 1993). While the low terraces have less potential for archaeological remains than intermediate or high terraces because of their flood prone elevations, there is some archaeological potential, particularly for proto-historic and early historic period remains, that should be investigated (Ibid.). Bettis (Ibid.) also noted that in areas where the sand and gravel deposits are situated below the water table, as they are in the project area, there is little potential for archaeological remains within these deposits (Ibid.). Therefore, the greatest cultural resources concern is with the Holocene-age veneer overlying the sand and gravel.

As for the potential for hazardous waste materials within the project area, it is concluded that there are no areas of concern within the project boundaries. Discussions with Ernie Swanson, former site manager, and with Joe McGuire of the environmental division of Martin Marietta in Topeka, Kansas, indicated that the company's operations in this area were relatively free of hazardous waste materials and that none were dumped or buried on site. According to Mr. McGuire (Personal communication 1993), there were no oil or fuel dumps, all fuel storage was contained, all underground tanks and any contaminated soil have been removed, any old tires and solid wastes were hauled off the site and disposed of in a proper manner, and that to the best of his knowledge, there is nothing of a hazardous nature within the project area or its immediate vicinity. Mr. Swanson (Personal communication 1993) did note that some of the sand pits to northeast and outside of the project area were pumped out and refilled with fly ash by the concrete products company, but this deposit does not appear to pose any hazard to the project area.

SUMMARY AND RECOMMENDATIONS

The land use history study of the proposed Raccoon River Regional Park of the Des Moines Recreational River and Greenbelt in West Des Moines, Polk County, Iowa, resulted in the delineation of five areas totalling approximately 48 ac (19.2 ha) that will require a Phase I cultural resources investigation prior to the park construction. In addition, three extant buildings (a cattle shed and two mining structures) should be recorded in the Iowa Site Inventory as part of this investigation and prior to removal.

Archival, oral historical, and field investigation indicated that the vast majority of the proposed park area has been adversely impacted by the post-1940s sand and gravel mining operations. However, it is known that prehistoric and paleontological material was recovered during the dredging activities, thus indicating some archaeological potential in the remaining, intact portions of the project area and its vicinity. The potential for significant post-settlement historic archaeological sites is considered low.

Therefore, it is recommended that a Phase I-level cultural resources investigation be conducted in those areas pinpointed on Figure 14. This investigation should include pedestrian surface survey, subsurface testing, and limited recording of the two extant structures. The subsurface testing should be confined to those areas that will be impacted below the plow zone by the park construction and consist of techniques appropriate to the depth of impact. Shovel testing may be adequate in some areas, while others will require deeper Seymour auger tests which can reach depths exceeding 2 m. Consultation with a geomorphologist prior to the commencement of fieldwork is recommended.

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