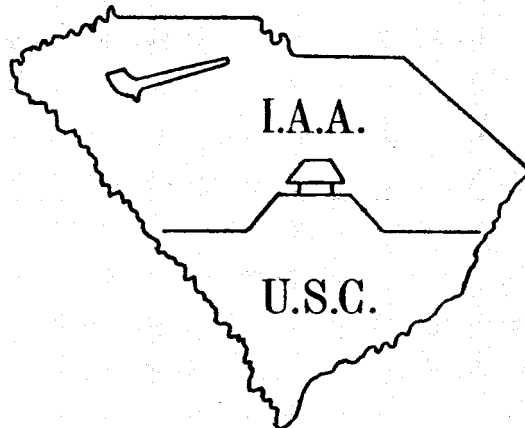


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THE INTENSIVE ARCHEOLOGICAL SURVEY
 OF A POTENTIAL
 INDEPENDENT SPENT FUEL STORAGE FACILITY,
 SAVANNAH RIVER PLANT,
 AIKEN AND BARNWELL COUNTIES, SOUTH CAROLINA
 by
 Glen T. Hanson and Richard D. Brooks
 Research Manuscript Series 141

RESEARCH MANUSCRIPT SERIES



Prepared Under
Contract EW-78-S-09-1072

**INSTITUTE OF ARCHEOLOGY AND ANTHROPOLOGY
UNIVERSITY OF SOUTH CAROLINA**

COLUMBIA, SOUTH CAROLINA

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The research reported herein was conducted under Department of Energy contract number EW-78-S-09-1072 with the Institute of Archeology and Anthropology, University of South Carolina.

Prepared by the

INSTITUTE OF ARCHEOLOGY AND ANTHROPOLOGY
UNIVERSITY OF SOUTH CAROLINA
December, 1978

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ACKNOWLEDGEMENTS

The authors would like to extend their appreciation to a number of individuals without whose assistance the survey would have been impossible. To Mr. George Lewis of the Augusta Archeological Society we offer our sincere thanks for the week of volunteer fieldwork he provided the project. His energy and knowledge was quite helpful in this undertaking.

Mr. Ronald Jernigan and Mr. William Lawless of the Department of Energy were very helpful in arranging for the logistics of the project. Mr. John Murdock and Mr. Donald Damewood of E.I. du Pont de Nemours, Inc., are thanked for their assistance.

Certain members of the Institute of Archeology and Anthropology staff provided their assistance. Dr. Kenneth Lewis and Mr. Stanley South offered useful guidance on the historic analyses. Drs. Robert L. Stephenson and Albert C. Goodyear provided their suggestions on the field aspects of the project during a visit. Mr. Darby Erd prepared Figures 1 and 2. Mr. Gordon Brown printed all of the photographs included in the report. Finally, Ms. Sandra Robinson typed the manuscript of this report.

MANAGEMENT SUMMARY

The intensive archeological survey of a potential site for locating an Independent Spent Fuel Storage Facility was conducted by Glen T. Hanson and Richard Brooks as a part of the specifications outlined in the contract between the United States Department of Energy and the Institute of Archeology and Anthropology, University of South Carolina (EW-78-S-09-1072). This survey was situated in the proposed I.S.F.S.F. area in the sandhills of the Aiken Plateau within the boundaries of the Savannah River Plant in Barnwell, County, South Carolina. The purpose of this project was to provide the Department of Energy with a complete inventory and evaluation of the archeological resources within the 550 acre parcel. These activities were accomplished in compliance with the National Environmental Policy Act of 1969 and Executive Order 11593.

Set in the high sandhills of the Aiken Plateau, the study area conformed to similar xeric environments surveyed during previous investigations. Based on the results of this previous research, a set of research problems was developed which focused on the nature of land use in low productivity zones. The expected pattern of prehistoric land use was one in which the upland sandhills were utilized as a resource procurement area for certain seasons resulting in small base camps and smaller limited activity sites. The historic pattern was expected to consist of small farms and tenant dwellings scattered throughout the study area.

To implement the survey a multi-staged design was formulated. Prior to field work, aerial photographs, maps and land plats were inspected in order to anticipate historic sites and survey accessibility. A records check at the Institute of Archeology revealed the presence of eight sites in the vicinity of the study area. All of these conformed to the expected pattern of marginal land use in the area. The intensive field survey incorporated systematic, predictive and opportunistic techniques to examine approximately 80% of the study area. Subsurface testing and rake testing were used to expose the ground surface in areas with dense forest litter. Finally, test excavations were conducted at the four archeological sites where surface evidence suggested dense occupations or unclear distributions.

Eight previously unrecorded sites were found during the survey. Only site 38BR257 occurred within the main construction area. All other sites (38BR251, 38BR252, 38BR253, 38BR254, 38BR256, 38BR258 and 38BR260) were situated outside of any major construction area. Three sites (38BR253, 38BR257 and 38BR258) showed evidence of prehistoric occupations while the remaining sites were attributable to the historic period. Based on the data gathered from each site assessments were made as to the significance of each resource using the criteria for eligibility for nomination to the National Register of Historic Places. Only three sites were considered to be eligible because of their importance in understanding Late Archaic land use (38BR258), Early Woodland land use (38BR253) and late historic land use (38BR251). By eligible, we mean that the archeological resources are capable of yielding information important to understanding past human systems. It does not imply that the sites are of such overwhelming significance to warrant immediate inclusion in the National Register of

Historic places, rather the data from the sites has the potential for answering questions about history and prehistory given our present knowledge. It should be mentioned that the Institute of Archeology and Anthropology is in the process of surveying the entire Savannah River Plant for archeological resources in order to provide the Department of Energy with a comprehensive assessment. Upon the completion of this survey, the significance of all sites mentioned in this report will be reconsidered in the context of the entire 78,000 hectare area. Thus, given our present knowledge of the Savannah River Plant and vicinity, the sites are considered as eligible.

The information obtained during the survey has contributed to the understanding of the human occupation of the sandhills. As expected the archeological sites were small and limited in artifact diversity. Prehistoric sites were situated in locations which suggest selective resource exploitation during certain months of the year. The historic settlement pattern consisted of small farms and homesites which in the main dated from the post-Civil War period to 1951.

Based on the results of this survey it is recommended that the construction area for the I.S.F.S.F. be cleared for archeological purposes. It is further recommended that the three sites considered as eligible for nomination to the National Register of Historic Places (38BR251, 38BR253 and 38BR258) be mitigated from any adverse effects by avoidance. If this is not possible, then an appropriate data recovery plan should be designed and implemented prior to construction.

INTRODUCTION

During the months of July, August and September 1978 members of the Institute of Archeology and Anthropology staff conducted an intensive archeological survey of the proposed Independent Spent Fuel Storage Facility (I.S.F.S.F.) on the Savannah River Plant, Aiken and Barnwell Counties, South Carolina (Fig. 1). The survey of this 550 acre parcel was made by Mr. Glen T. Hanson and Mr. Richard D. Brooks as part of a general contract with the Savannah River Operations Office, United States Department of Energy (number EW-78-S-09-1072). The purpose of this research was to locate, describe and assess the archeological resources within the proposed impact area and to provide the Department of Energy with recommendations as to the significance of the resources.

Twenty days were spent in the field, equalling 45 man-days of labor. In addition to Hanson and Brooks, Mr. George Lewis of the Augusta Archeological Society volunteered five days of his time to assist with the data recovery. Fieldwork was spaced over a two and one-half month period due to other contractual commitments and meetings. In the course of the survey approximately 80% of the 550 acre study area was inspected using various techniques (Fig. 2). Laboratory processing and analyses were conducted at the U.S.C. Archeology Laboratory on the Savannah River Plant. These procedures and all other work leading to the completion of the archeological report occupied a total of 7 weeks for a sum of 70 man-days. Thus, the entire survey project required approximately 115 man-days of effort through all phases.

This report will present the background, methods, results and recommendations stemming from the I.S.F.S.F. intensive survey. The purpose of the report is to provide the Department of Energy with a thorough presentation of all results and conclusions so that continued construction in the I.S.F.S.F. can be undertaken without adverse effect on the prehistoric and historic resources.

Writing responsibilities were divided as follows: Mr. Richard D. Brooks authored the historic background, historic artifact descriptions, historic site descriptions and evaluations and collaborated with Hanson on the concluding sections. Mr. Glen Hanson prepared the introduction, environmental background, prehistoric background, research orientation, methodology, prehistoric site descriptions and the concluding sections.

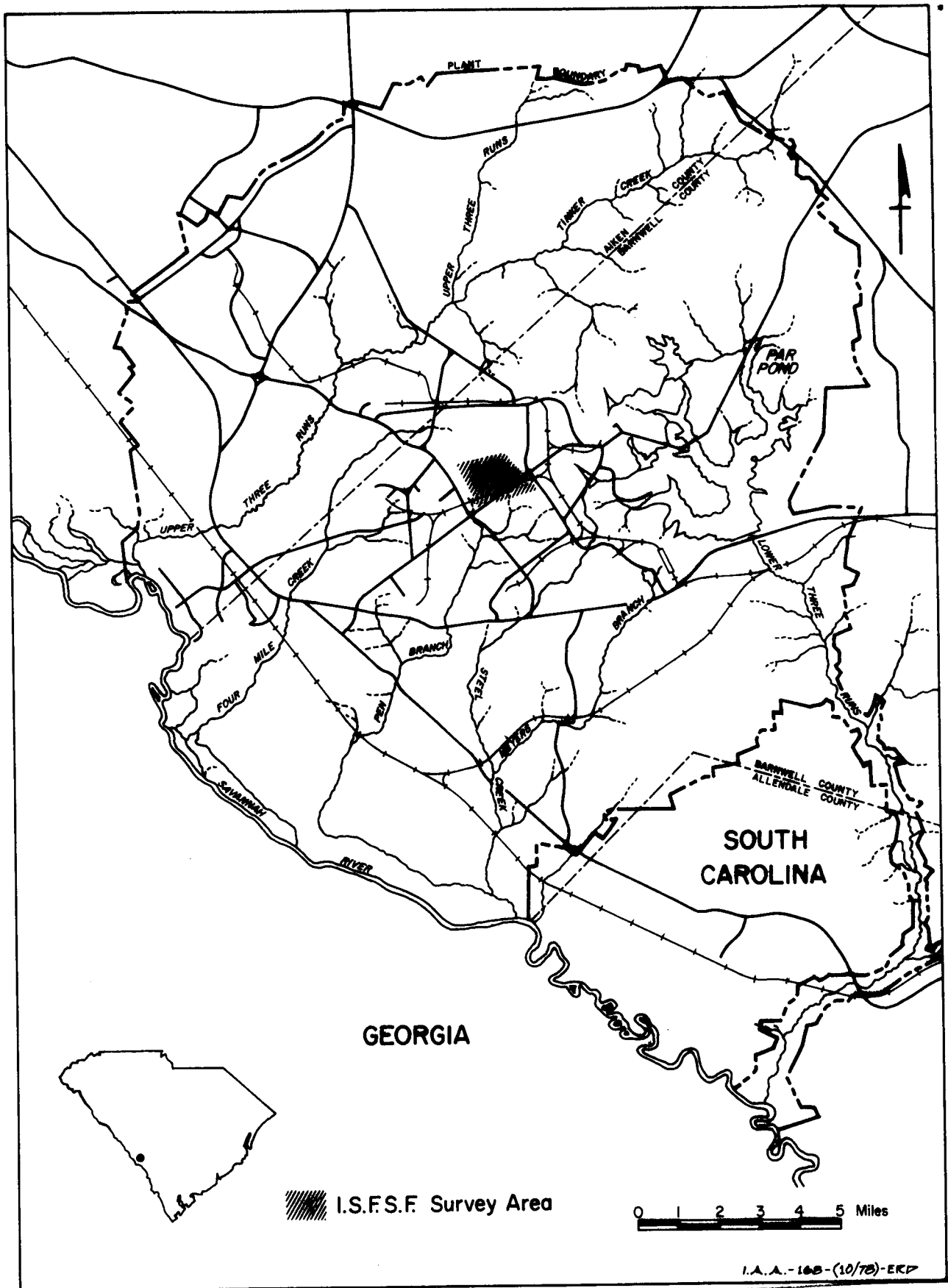
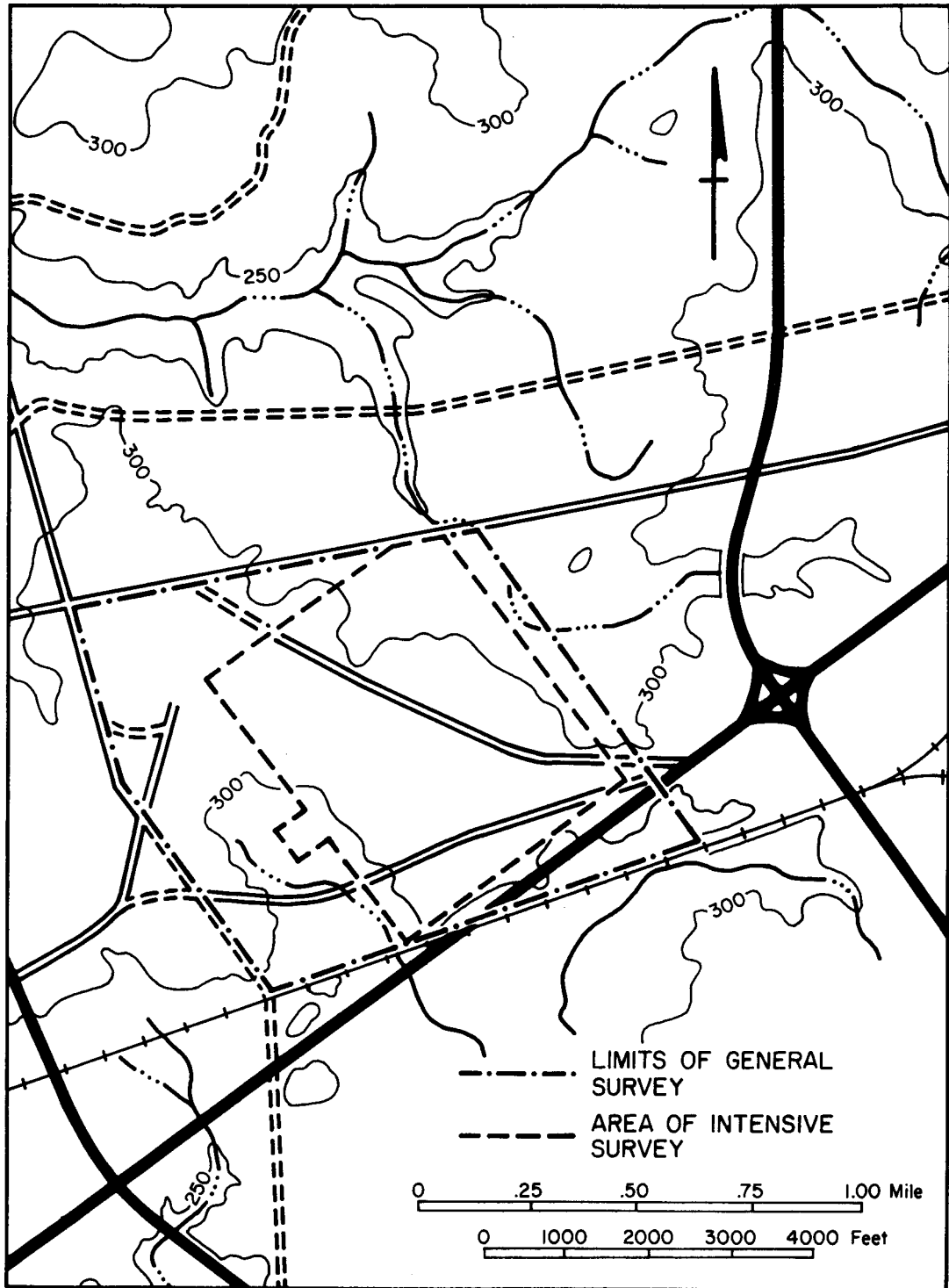


FIGURE 1. General Savannah River Plant Map (I.S.F.S.F. survey is hatchured).



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FIGURE 2. General I.S.F.S.F. survey area map and the immediate vicinity.

RESEARCH ORIENTATION

The research described in this report was undertaken with the central aim of determining the types and distribution of archeological resources within the proposed Independent Spent Fuel Storage Facility. Although this goal does not pertain to any specific theoretical problem domain, the related research orientation does. In the process of determining the archeological content of the I.S.F.S.F. area, an attempt will be made to relate the settlement distributions to the general problem of sandhill land utilization during prehistoric and historic times.

The previous preliminary inventory of archeological sites on the Savannah River Plant resulted in the recognition of certain patterns of archeological-environmental association (Hanson, Most and Anderson 1978). Among the more regular relationships was that between small, low frequency sites and upland contexts. The sites occurring in such xeric settings were most usually small lithic scatters without any temporally diagnostic artifacts. This pattern of limited land use in the upland sandhills was suggested to be directly related to the relatively low productivity of soils in these situations. This low productivity would not be expected to afford subsistence support for a human population on a year-round basis but rather provide resources on a seasonal basis. The activities associated with this area would therefore be expected to be minimal, and composed primarily of hunting and gathering.

With this inferred pattern for the sandhills in mind, the present research was aimed at gathering important supplemental data from an intensive survey base rather than the extensive preliminary reconnaissance base. By examining the 550 acre parcel proposed for the I.S.F.S.F. in great detail it was possible to obtain more specific information about the use of a small land parcel over the 10,000 years of human occupation in the Upper Coastal Plain. The main concern was with obtaining information relating to the location of sites, the relative dates of occupation, the range of assemblage variability and the density of sites in the sandhills.

Sites belonging to the historic period within the sandhills are less understood than the prehistoric sites because of the previous concentration on the aboriginal occupation. For this reason, the main focus of historic research during this study was on the description of historic sites within the I.S.F.S.F. area in terms of the occupation range, the types and functions of sites and the general land use of the uplands.

In summary, the research conducted in the course of this study was aimed at gathering data which would further elucidate the patterns of land use in the upland sandhills of the Aiken Plateau. Through such a research frame, the evaluation of the cultural resources for historic preservation planning is given direction. The sites will be assessed in terms of their ability to contribute important information about the nature of human occupation in the sandhills. Such information,

in conjunction with that obtained during previous research in the area, may enable a clearer appreciation of the human ecology of the Upper Coastal Plain.

ENVIRONMENTAL SETTING

The Independent Spent Fuel Storage facility area lies in the Aiken Plateau sandhills of the upper Atlantic Coastal Plain physiographic province which is composed of unconsolidated sediments of Cretaceous age or younger (Langley and Marter 1973:17). This general area falls within the Oak-Hickory-Magnolia Forest Ecotone described by Shelford (1963:86-88), which is characterized by a pine to scrub oak succession in xeric areas and a more stable oak-hickory sere in hydric contexts. The general climate can best be described as mild with monthly temperature averages ranging from 48° F in January to 81° F in July and an annual mean humidity of 70% (Langley and Marter 1973:65). Precipitation averages 47 inches annually with extremes ranging from 28.8 inches per annum to 73.5 inches per annum (Langley and Marter 1973:73).

Within the context of the Upper Atlantic Coastal Plain, the Aiken Plateau is a dominant feature in South Carolina. It extends from the Savannah River to the Congaree River and from the Fall Line to the inland edge of the coastal terraces at the Citronelle Escarpment (Siple 1967: 9-10). The sediments of this feature date from the Eocene, Miocene and Cretaceous and have a maximum depth in the Savannah River Plant of more than 700 feet (Siple 1967, Plate 2). A deep veneer of sand forms the uppermost surface of the Aiken Plateau. Throughout the plateau stream action has deeply dissected the surface forming a system of high ridges which form an upland plain and a series of narrow, steep-sided valleys (Siple 1967:9). Within the I.S.F.S.F. study area, the maximum relief is 90 feet, ranging from 250 feet a.s.l. in the Four Mile Creek drainage to 340 feet on a ridge between this drainage and the Pen Branch system (Fig. 3).

In terms of overall topography the I.S.F.S.F. area can best be described as a headwaters sand ridge which forms the drainage divide between Pen Branch and Four Mile Creeks. In the vicinity of the study area the ridge extends from the east to west at a maximum elevation of 350 feet. Other than the tributaries of the two stream systems the only hydrological resource in the immediate area is a small (8 to 10 acre) Carolina Bay in the north central portion of the study unit (Fig. 3). For the most part the area in question can be characterized as an extremely well drained ridge dissected by numerous intermittent streams. This dissection has caused moderate to extreme relief in the valleys while leaving the uplands quite flat.

With these geological characteristics in mind, the soils of the I.S.F.S.F. project area and the Aiken Plateau, in general, have predictable characteristics which influence the distribution of the biotic species. Three soil groups, as described by Aydelott (n.d.), occur in the study area (Fig. 4). On the upper portions of the ridge system, a Dothan and Norfolk soil group is present (Aydelott n.d.:9). This soil class is distinguished by sand underlain by sandy clay loam which is capable of supporting a highly productive pine crop as well as certain hardwood species. The extreme xericity of the soil would most likely prohibit the establishment of a rich hardwood community. On the other hand, the bottomlands associated with all intermittent and perennial streams are characterized by the mucky clay loams classed as Johnson and Okenee soils (Aydelott n.d.:12).

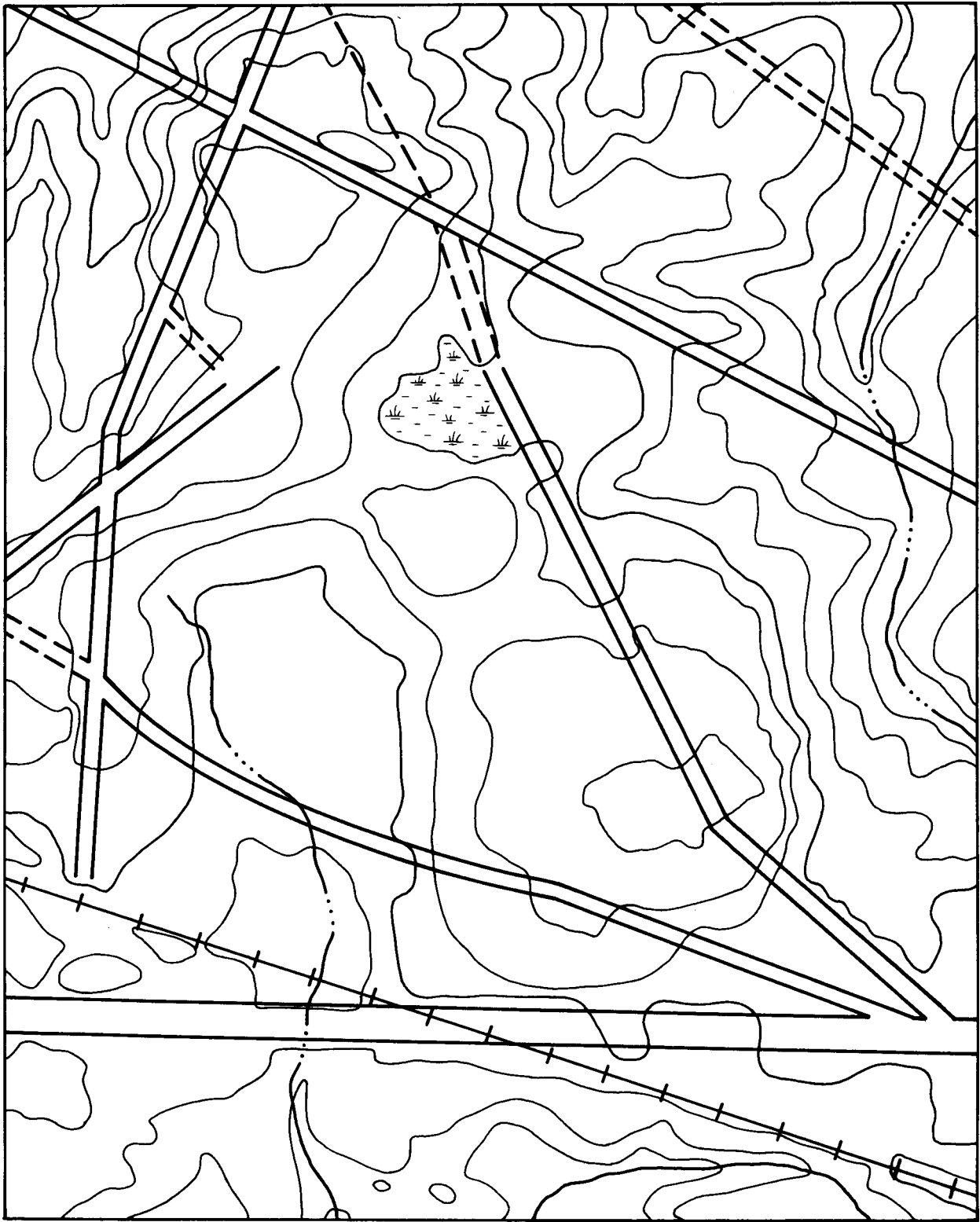


FIGURE 3. Specific I.S.F.S.F. survey area topographic map.

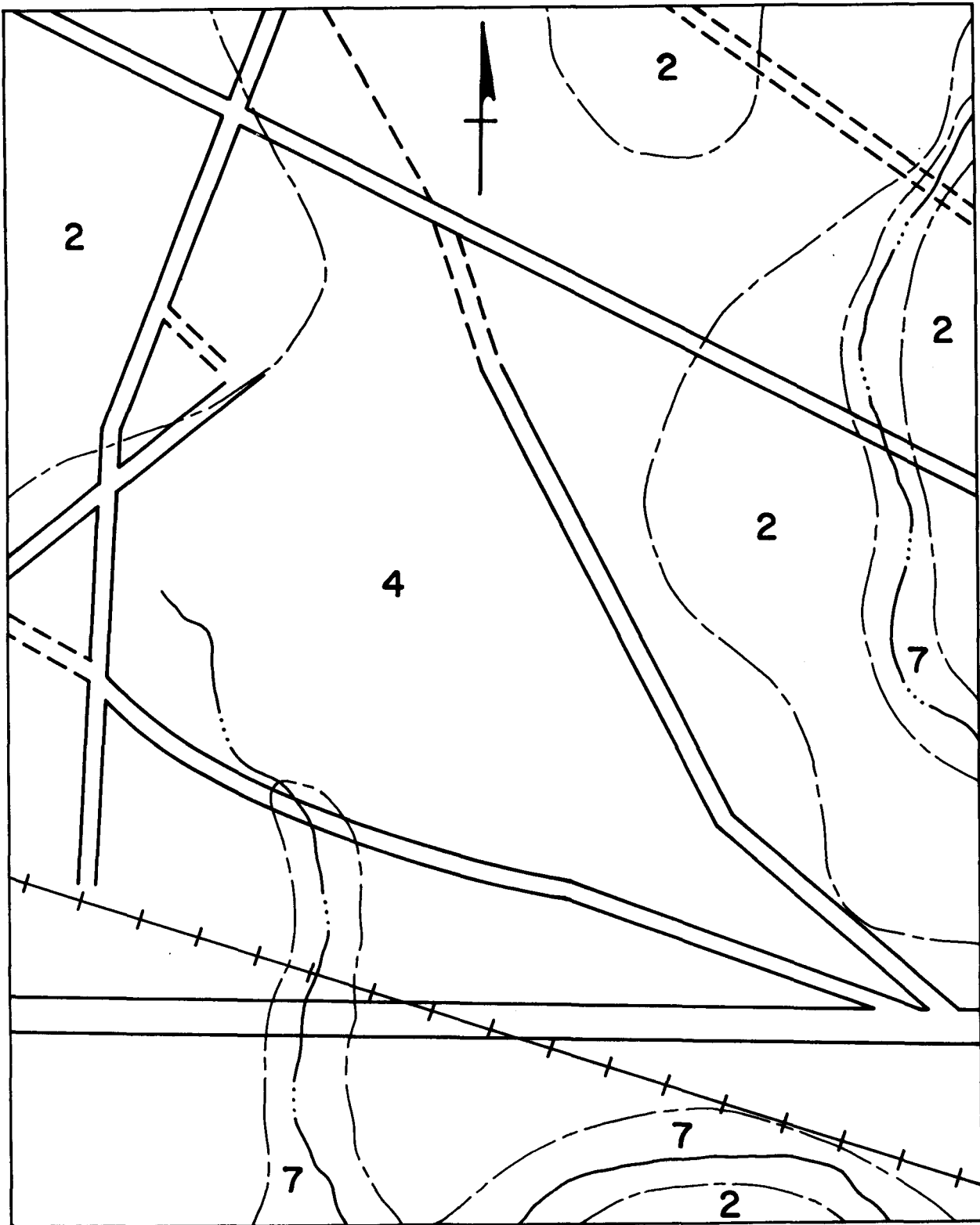


FIGURE 4. Specific I.S.F.S.F. survey with soils. (Key to number: 2= Vaucluse & Blaney; 4= Dothan & Norfolk; and 7. Johnston & Okenee)

This group of soils has the potential for supporting rich hardwood communities of oak, gum, hickory and maple. On the ridge slopes between these two soil groups, soils belonging to the Vaucluse and Blaney class occur (Aydelott n.d.:6). This category of soils consists of dark gray sand underlain by a pale brown sand which lies upon a brittle sandy clay loam (Aydelott n.d.:35). Due to rapid runoff and steep terrain, the productivity of Vaucluse and Blaney soils is low relative to the other two soil types present in the I.S.F.S.F. parcel. These relative differences in soil productivity are best expressed by the site use index assigned to each type based on the growth of pine species over a 50 year period. While the Johnson and Okenee soils do not have a site index because they support primarily hardwood species, the other two types have site indices of 80 (Dothan and Norfolk) and 65 (Vaucluse and Blaney) for loblolly pine (Aydelott n.d.:35).

Vegetation within the Savannah River Plant correlates strongly with the soil types. Two basic community types occur within the I.S.F.S.F. project area, the xeric and the small stream hydric. The former community type occurs naturally on the upland soils (Dothan and Norfolk, and Vaucluse and Blaney) as consists of a scrub-oak and pine association (Beavers, *et al.* 1973:34-35). This community would support a diverse number of xeriphytic species such as longleaf pine, post oak, bluejack oak, southern red oak, shortleaf pine and loblolly pine (Beavers, *et al.* 1973:34-35). Associated with this dry upland association of plant species would be a diverse group of wildlife species such as gray fox, red fox, raccoon, bobcat, opossum, rabbit, squirrel, and white tail deer. These fauna would be expected to occur in low to moderate densities within this habitat (Langley and Marter n.d.:157).

By contrast the floodplains of small streams would support a hydric vegetation community capable of producing dense stands of oak, sweet-gum, green ash, cottonwood, sycamore and red maple on the Johnson and Okenee soils. In addition to providing excellent habitat for the species on the uplands, this community would support bear, beaver, otter and muskrat (Langley and Marter n.d.:157). In contrast with the uplands, the floodplain hydric community would have been a rich reservoir of faunal and floral food resources, although a rather wet and inhospitable location for habitation.

In summary, the I.S.F.S.F. study area contains two vegetation communities which would have offered prehistoric inhabitants a range of floral (oak mast, hickory nuts) and faunal (both large and small game) resources. Due to differences in the available moisture in the soils the communities differ in their ability to support certain species which in turn causes a difference in relative food resource productivity. In absolute terms, the floodplain environment would have been a much richer environment for gathering and hunting than the uplands although dense cover and standing water may have mitigated against regular exploitation. On the other hand, the uplands would have provided similar species in lower frequencies but in vastly superior conditions for capture. However, when these two communities are compared with the mesic terraces of the Savannah River and the large stream hydric communities of the lower reaches of Four Mile Creek and Pen Branch (cf. Hanson, Most and Anderson 1978:11-15) their productivity on a year round basis can only be seen as secondary. For this reason, the I.S.F.S.F. project area in the upland

sandhills would be expected to be either a seasonal resource collection environment or an overall secondary ('back-up') resource zone. The implications of this environmental variability will be discussed in a later section of this report.

ARCHEOLOGICAL BACKGROUND

The Prehistoric Occupation of the Savannah River Valley

Within the drainage of the Savannah River below the Fall Line, investigations of cultural heritage from an archeological perspective have been focused on selected areas. For this reason an overview of the prehistory of the area must rely on information selectively investigated without regard for general archeological pattern. This general discussion of the occupational history within the study area and immediate environs will be an attempt to characterize the general prehistory of the Savannah River drainage within the Coastal Plain.

Archeological undertakings of a controlled nature were begun in the latter half of the last century by Thomas (1894) and Moore (1899) in their studies on prehistoric mound sites within river valleys of the eastern United States. These efforts resulted in the location and collection of selected large sites within the Savannah River area; however, these pioneer studies were of value only in documenting the presence of sites within the drainage. They have little value for modern studies beyond that mentioned, but these were the pioneering efforts in the study of the region's archeological resources.

The advent of more scientific archeological research within the area began with the efforts of William Claflin in the vicinity of the Fall Line at Stalling's Island. Claflin excavated a large shellmound on the island within the Savannah River during the 1920's and documented an assemblage of archeological materials indicative of the earliest ceramic complex in the eastern United States (Claflin 1931; Sears and Griffin 1950; Bullen and Green 1970). For this reason the Stalling's Island site has become one of the most important cultural resources known from the Southeast and has been subjected to intermittent investigations since Claflin's first study (Fairbanks 1942; Sears and Griffin 1950; Bullen and Green 1970).

In the delta region of the Savannah River, Antonio Waring was instrumental in the initial understanding of the prehistoric archeological record. During his brief life, Waring, through cooperation with various archeologists, recorded, collected and/or excavated almost all of the key archeological sites which would form the foundation of all future archeological research in the Savannah, Georgia area. Waring and others were responsible for the description of the basic ceramic types and general ceramic complexes such as the Deptford ceramic complex (Waring and Holder 1968), Woodland and Mississippian ceramic types (Caldwell and Waring 1939), and early Woodland ceramic types and assemblages (Williams 1968:152-215). The summary of Waring's work provided by Williams (1968) stands as a major contribution to the study of Savannah River prehistory.

Other research in the Savannah, Georgia area was conducted during the W.P.A. period on the Irene Mound site, a Mississippian period site.

Conducted over the course of several years, the excavations revealed the presence of a long-term occupation associated with a ceremonial center (Caldwell and McCann 1941). These excavations yielded the first thorough plan of such a ceremonial complex within the Atlantic Coastal area and extended the known archeological record into protohistoric times.

Subsequent research was delayed for almost two decades, until the 1960's when renewed interest in the initial ceramic period prompted the work of James Stoltman at Groton Plantation (Stoltman 1974). This re-search project involved the survey and test excavation of sites within the plantation for purposes of exploring the development of Late Archaic and Woodland cultures in the riverine area of the Coastal Plain. The major outcome of this research was the excavation of two sand mounts, Rabbit Mount and Clear Mount. These contained shell middens associated with some of the earliest ceramics known for North America. In addition, sites representative of Archaic, Woodland and Mississippian occupations were located in the survey, and the distribution of these sites suggested to Stoltman (1974:229-244) radical differences in subsistence and settlement practices at various times.

Following Stoltman's research, Drexel Peterson (1971) intensified the survey of the Groton Plantation area in order to refine specific hypotheses regarding ceramic chronology and cultural development. The general result of the study was the discovery that changes in subsistence strategies were not appreciable during the Woodland period, as was thought by Stoltman (1974). Another result was a ceramic chronology which included several additional "phases" during the Early Woodland period and later times. These latter results have yet to be substantiated from other research in the general area.

Concomitant with the latter research was the expansion of study in other areas of the Savannah drainage. This research includes survey and excavation at White's Mound (Phelps and Burgess 1964; Phelps 1968), Hollywood Mound (DeBaillou 1965), the Theriault site (Brockington 1971), Mississippian sites along the Savannah River (Ferguson, personal communication), the Augusta area (Ferguson and Widmer 1976), and recent work at Stalling's Island (Bullen and Green 1970). The combined results of these research efforts and those of individuals working earlier form the basis for the present understanding of prehistoric development within the Savannah River valley below the Fall Line. Although a synthetic overview of the prehistory of the area is as yet unwritten, the initial foundation exists for general formulations. The following summary of the occupational history within the lower Savannah River is intended to serve as a general chronological framework (see Table 1).

Paleo-Indian (9,500 - 8,000 B.C.)

The Paleo-Indian period is represented throughout North America by an archeological assemblage indicative of a hunting and gathering economy based on the exploitation of large, now-extinct fauna. Due to geological conditions following this Pleistocene adaptation, the recognition of Paleo-Indian sites is difficult. Holocene changes in stream localities believed to be favored by these early hunter-gatherers

TABLE 1

A GENERAL OCCUPATIONAL SEQUENCE FOR THE SAVANNAH RIVER BELOW THE FALL LINE

CULTURAL PERIOD	TIME SCALE	PHASE	DIAGNOSTIC ARTIFACT CLASSES
Historic	present		Non-native material products (e.g. mass-produced ceramics, glass, metal, frame and brick architecture).
	-----1700 A.D.-----		
		Irene	Irene filfot stamped, incised & plain ceramics, small triangular projectile points, Southern Cult objects
Mississippian	1200 A.D.		
	-----1000 A.D.-----	Savannah II	Savannah complicated stamped, plain & burnished ceramics, small triangular points
Late Woodland	700 A.D.	Savannah I	Savannah cordmarked and burnished ceramics small triangular projectile points
Middle Woodland	1 A.D.	Wilmington	Wilmington cordmarked ceramics, large triangular projectile points
Early Woodland	500 B.C.	Deptford	Deptford linear check stamped, simple stamped and check stamped ceramics
	-----1000 B.C.?-	Refuge Thom's Creek	Simple stamped, punctate & incised ceramics (sand tempered)
Late Archaic		Stallings III	Savannah River projectile points, decorated fiber tempered ceramics
		Stallings II	Savannah River projectile points, plain fiber tempered ceramics
	-----3000 B.C.-----	Stallings I	Savannah River projectile points
Middle Archaic			Guilford points Morrow Mountain points Stanly points
	-----5500 B.C.-----		Kirk points Palmer
Early Archaic			Dalton
	-----8000 B.C.-----		Quad points Suwanee points Clovis points
Paleo-Indian	10,000 B.C.		

Based on Stoltman (1974), Ferguson and Widmer (1976), Michie (1977) and Coe (1964).

(Michie 1977). Evidence for Paleo-Indian occupation has, however, been recovered from surface contexts throughout the associated Coastal Plain of Georgia and South Carolina (Michie 1977) and from the Theriault site on Brier Creek in Georgia (Brockington 1971). Although complete assemblages have yet to be found in association with the diagnostic fluted points typical of all of the above localities, the presence of the points would suggest some activity within the region during the latter portions of the Pleistocene.

Michie's (1977) study suggests a general model for the location of Paleo-Indian sites within the Coastal Plain based on the locations of 100 fluted points. He concludes that

The overall pattern of projectile point distribution seems to involve the larger river systems [of South Carolina] : such as the smaller Edisto Rivers. When these rivers are involved with point distributions and locations, the points usually occur at the intersection of creeks and the river's floodplains and on the highest portion of land near that intersection (Michie 1977:92).

Given this, one would not expect sites of this period to occur within the boundaries of the study area.

Early Archaic (8,000 to 5,500 B.C.)

The Early Archaic represents the initial response of prehistoric inhabitants of the Coastal Plain and North America, in general, to the ameliorating climatic conditions of the Holocene. The changes in climate and associated vegetation patterns and faunal populations during the immediate post-Pleistocene provided a much more suitable environment for human population growth. Hunting and gathering resources were more plentiful due to this change from a cooler climate to a milder climate with increases in deciduous nut and seed-bearing vegetation. Although variation occurred in this Holocene climatic sequence, the general present-day character of the Coastal Plain was beginning to develop at this time.

Archeological evidence of the earliest Holocene hunter-gatherers is composed of the presence of Dalton-Hardaway (Goodyear 1974; Coe 1964) occupations throughout the eastern United States. Assemblages associated with the Dalton-Hardaway point type are generally diverse with functional specificity indicated in tool form. The locations of sites of Dalton-Hardaway association in the Coastal Plain of Georgia have been examined by Fish (1976:22-23), who suggests a strong association between large stream systems and these Early Archaic types.

Following the Dalton-Hardaway, the Palmer point represents the latter portion of the Early Archaic period. Palmer points have been recorded from throughout the state of South Carolina and adjoining states within the Coastal Plain and Piedmont physiographic provinces. Materials recovered from the nearby site of Cal Smoak in the Edisto drainage (Lee and Parler 1972; Anderson, Lee and Parler n.d.) suggest a clear stratigraphic priority of Palmer occupations relative to Kirk and other Middle Archaic forms. This and other Palmer components from

the Fall Line and Coastal Plain (Michie 1971; Coe 1964) suggest strong associations with large stream systems, although in the Piedmont, House and Ballenger (1976) and Goodyear (1978) indicate an extensive upland, ridge top association for small Palmer components. These results may indicate a much more widespread occupation and diffuse land use pattern related to a broad spectrum subsistence base during the latter portions of the Early Archaic. However, this and any other inference for the period within South Carolina must await evaluation through excavation and more intensive analysis.

To generally characterize the Early Archaic period it must be mentioned that the evidence is indeed minimal, at best, for the Coastal Plain. Dalton-Hardaway and Palmer occupations are surely present based on the common occurrence of projectile points, but associated assemblages are as yet poorly understood. Distributional studies (Goodyear 1978; Goodyear, Ackerly and House n.d.) indicate a wide ranging land use pattern, which is suggested to relate to the exploitation of deer in the uplands and riverine resources in major drainages of the Piedmont. The general reconnaissance of the Savannah River Plant located 10 Early Archaic components, 3 Dalton and 7 Palmer, in geographical contexts ranging from high uplands to the river terraces of the Savannah (Hanson, Most and Anderson 1978). Given this distribution in all environmental zones of the Upper Coastal Plain, sites of this time period could be expected in the I.S.F.S.F. study area.

Middle Archaic (5,500 to 3,000 B.C.)

This period is characterized by a continuance of a generalized hunting and gathering subsistence pattern with differences being indicated by changes in projectile point morphology. Four point forms are typical of this period: The Kirk, Stanly, Morrow Mountain, and Guilford types (Coe 1964). The common distribution and density of these point forms throughout the Coastal Plain and Piedmont would suggest a greater population and extensive pattern of land use. With the exception of Lake Spring (Miller 1949), Theriault (Brockington 1971) and Cal Smoak (Lee and Parler 1972), a few sites in the general area of the Savannah River Plant have been excavated with evidence of the Middle Archaic. Little is known of the Middle Archaic assemblage for the Coastal Plain region aside from the ubiquitous hafted bifaces (projectile points).

Ten Middle Archaic components, eight Kirk and 2 Stanly - Morrow Mountain, were recorded during the general reconnaissance of the S.R.P. (Hanson, Most and Anderson 1978). As in the case of the Early Archaic sites, these were distributed in all major environments. Based on this pattern we expect to find some evidence of these sites in the study area.

Late Archaic (3,000 to 1,000 B.C.)

Within the prehistoric sequence of the Savannah River valley, the Late Archaic is perhaps the best examined cultural period due to its importance in understanding the initial development of ceramic technology in North America. Stoltman (1972, 1974) has synthesized the most

recent information available on the Late Archaic in the Savannah drainage and has suggested a riverine adaptation focused on shellfish with some upland utilization. The period is most commonly recognized by the presence of the Savannah River projectile point type, which is a large, broadbladed stemmed point.

Data representing this period have been excavated from 24 sites along the Savannah River from the lower Piedmont to the Atlantic Ocean. These sites are discussed by Stoltman (1972) in great detail, especially with reference to the presence of fiber tempered pottery. Among the more important of these sites, because of the availability of radiocarbon dates, are Stalling's Island (Claflin 1931; Fairbanks 1942; Bullen and Greene 1970), White's Mound (Phelps and Burgess 1964), Rabbit Mount (Stoltman 1974), Bilbo (Williams 1968:152-197), Dulany (Williams 1968), and Sapelo Island (Williams 1968). Other sites include Refuge (Williams 1968:198-208), Lake Spring (Miller 1949), Chester Field (Williams 1968:208), Daws Island (Hemmings 1972), Walthour (Caldwell 1952:314), Meldrim (Williams 1968:182-183), and Oemler (Williams 1968:182-183).

Associated with these sites is a variable lithic industry best represented at Stalling's Island, Rabbit Mount, Bilbo, and Lake Spring (Stoltman 1972:45). The raw materials range from slate to chert depending on the local availability of these materials. Savannah River points dominate the assemblage with numerous unifacial tools, cobble tools, large nonhafted bifaces, steatite "netsinkers," bannerstones, and steatite bowls (Stoltman 1972:46-47). This diverse assemblage of tool types is complemented by various antler, bone and shell tools found at Rabbit Mount and Stalling's Island (Stoltman 1972).

The presence of fiber tempered ceramics at sites of the Late Archaic is restricted to what Stoltman(1974:19) refers to as the Stallings II and Stallings III phases. Basically, these two phases are distinguished from each other by the presence of only plain fiber tempered ware in Stallings II times as opposed to the decorated ware of Stallings III. Stallings I has basically the same assemblage as the other two phases except that it lacks ceramics.

Based on the distribution of sites for the Late Archaic there does not appear to be a major distinction in settlement patterns between the three phases; indeed, the phases may be simply taxonomic distinctions based on ceramics without any relevance to settlement or subsistence patterns. As in the other Archaic periods, sites tend to focus on large drainages and are often found within the floodplains of rivers on alluvial rises or mounts. Shellfish were heavily utilized as were mammalian fauna (Stoltman 1974). Excavation of sites has focused on the large shell bearing locations which may be large riverine base camps, but little information is available for upland Late Archaic sites.

The known Late Archaic occupation of the S.R.P. is represented at 10 sites, the majority (6 sites) of which are situated on floodplains and terraces (Hanson, Most and Anderson 1978:121-122). These sites are generally large and high in artifact content. On the other hand, the four upland sites contain relatively fewer artifacts and tend to be smaller than the terrace-floodplain sites. From this tentative pattern, late

Archaic sites in the I.S.F.S.F. study would be expected to be of limited size and artifact content.

Early Woodland (1,000 B.C. to A.D. 1)

The Woodland period has been defined by Willey (1966) as a general period during which ceramics, burial mounds and agriculture were common; however, this definition is primarily one based on artifactual traits, the most common of which is ceramics. As mentioned in the description of the Late Archaic, ceramics are known from the Savannah River area well before the 1,000 B.C. date given here. Stoltman (1974:20-21) simply states that the Early Woodland is defined on the basis of sand tempered ceramics for the region, in the absence of definitive proof of mounds or agriculture. For this reason, the use of the term Woodland is useful only as an heuristic device for relative chronological purposes. The discussion of the various Woodland phases which follows will provide a general understanding of the variation in ceramic style and settlement patterns associated with the ceramic time indices.

Determination of the exact starting dates for the Early Woodland period in the Coastal Plain area has been confused by similarities between many of the fiber tempered and sand tempered wares. The major problem arises with the Thom's Creek/Awendaw types, which are sand tempered, punctate design types similar to the fiber tempered Stallings III ceramics. Other designs common on these ceramics are simple stamping and incising (Phelps 1968). South (1973) has grouped these Thom's Creek ceramics and those of the later Refuge complex into a Formative ware group association with those of the Stallings II and III phases. This latter grouping may best characterize the general transition between the two groups of ceramics since the only real basis for separation is the fiber temper/sand temper attribute. Ceramics of both temper types occur within Rabbit and Clear Mounts at Groton Plantation in similar contexts furthering the contention that the sand tempered types are transitional (Stoltman 1974:215).

Within the Savannah drainage system the locations of Thom's Creek and Refuge sites appear to be similar to those of the Late Archaic. Stoltman (1974:215,216) has mentioned that the Early Woodland ceramics occur in both floodplain-terrace and upland associations. This general pattern would seem a reasonable expectation for the Savannah River Plant because of the approximately similar environmental contexts in the two localities.

Beyond the ceramic assemblages little is really known of the Thom's Creek and Refuge phases, especially in terms of lithic artifacts. This paucity of information makes any inferences concerning the first half of the Early Woodland weak at best. The overall similarity between Stallings sites and Thom's Creek/Refuge sites may be some evidence to support a functional similarity argument although this is only conjecture at this time.

Deptford phase evidence, in contrast to the preceding phases, has

been recovered from sites on the Atlantic and Gulf Coastal Plains from North Carolina to Florida to Alabama. Milanich (1972) has provided the most comprehensive examination of the Deptford phase throughout its geographic range. This study views the Deptford phase as a non-agricultural based economy dependent on intensive hunting and gathering. It is most readily identified in the archeological record by sand tempered ceramics with linear check stamped, simple stamped, and check stamped designs (Milanich 1972; Caldwell and Waring 1939).

Within the Savannah River region, Deptford is well represented by evidence from the Bilbo Site (Williams 1968:152-197). The Deptford Site (Williams 1968:140-151), the Refuge Site (Williams 1968:198-208), White's Mound (Phelps and Burgess 1964), and the Groton Plantation sites (Stoltman 1974; Peterson 1971). The majority of information concerning the Deptford phase in the Savannah River region concerns ceramics with only minimal reference to the associated assemblages. The only general associations present at these sites are small triangular projectile points, small stemmed projectile points, shell and bone ornaments and tools, and assorted flake tools. This limitation in the information base for assemblages of Deptford can be traced to a rather single minded concentration of most investigators on the ceramic development of the Deptford ware group with little attention to the other characteristics of the Assemblage. Milanich (1972) must be credited with one of the only efforts directed at the reconstruction of the entire lifeway associated with the Deptford ceramic pattern; however, much of his information and results are focused on the coastal region and the Gulf sub-region which are far removed from the Savannah River.

The spatial distribution of Deptford sites has been investigated at Groton Plantation with the conclusion that the Deptford ceramic sample is distributed equally between the floodplain and upland (Stoltman 1974:237). This pattern of increased use of the uplands is believed to correlate with an increasing dependence on the biotic resources of non-floodplain environments. Thus, one may expect to find Deptford ceramic sites in the areas of the plant removed from the swamp, such as the terraces and along the major streams.

In summary of the Early Woodland it can be stated that there is a stylistic change in ceramic design which is correlated with a general change in settlement pattern. This period is one of transition from the floodplain oriented subsistence base in the Late Archaic to the more diffuse subsistence base in the Woodland evenly distributed in most environmental contexts. The known settlement pattern present on the S.R.P. supports this conclusion in that sites of moderate and high artifact frequency and size occur on terrace and floodplains while those of smaller size and lower content occur in the uplands. This pattern suggests an increased use of the uplands indicative of a more diffuse subsistence base (Hanson, Most and Anderson 1978). Given this pattern on the S.R.P. Early Woodland sites could be expected to occur in the I.S.F.S.F. project area.

Middle Woodland (A.D. 1 to 700)

Most cordmarked ceramics with sand temper are included in the Wilmington Cord Marked (or Wilmington Heavy Cord Marked) type described by Caldwell and Waring (1939) and Stoltman (1974). Although sherd temper is considered to be a major attribute of this type (Caldwell and Waring 1939), Stoltman (1974:25) argues that sand tempering can be considered within the range of temper variability for the type since all other characteristics of the ceramics found at Groton Plantation fit the description. Basically then, Wilmington is identified by a predominance of coarse cordmarked ceramics within the Savannah River area.

Sites which are reported to contain Middle Woodland ceramics within the Savannah drainage are known from the mouth of the river to the Fall Line. These include Oemler, Walthour, Meldrim, Cedar Grove, Deptford Bluff, Greenseed Field, King's New Ground Field, White's Mound, Rabbit Mount, Clear Mount, and several others in Groton Plantation (Stoltman 1974:24-27). Information from these sites concerns primarily ceramics with the notable addition of mound associations (Stoltman 1974) in several cases. Within the Groton Plantation survey the majority of the ceramic sites occurred within the upland province in contrast to the preceding periods.

Little is known of the assemblages associated with the ceramics of this phase, but data from the Groton study allow for some understanding of the general settlement pattern. Stoltman (1974:214-215, 236-241) concludes that since almost 80% of the Wilmington ceramics recovered in the survey were found in the uplands, a concentration on upland resources was the base of the subsistence technology including some form of slash and burn agriculture. Although this is a conjecture based on minimal evidence, the strong association of these ceramics in the non-floodplain environment would indicate a shift in settlement and possibly subsistence patterns. If this is the case, then the Middle Woodland should be a well represented period within the plant because of the large area of upland composed of terraces and the Aiken Plateau.

Although a distinction could not be readily made between Middle and Late Woodland sites on the S.R.P. because of a lack of good diagnostic artifacts, the arrangement of these sites mirrors the pattern at Groton (Hanson, Most and Anderson 1978). Sites of these time periods are scattered throughout the S.R.P. Thus, it is likely that Woodland sites will occur in the I.S.F.S.F.

Late Woodland and Mississippian (A.D. 700 to 1,700)

These two general periods have been combined for purposes of this summary because of a general lack of distinction between the ceramics of the Savannah I and Savannah II phases in the area of the study. The diagnostic ceramic type of the Savannah I phase is Savannah Cordmarked (or Savannah Fine Cordmarked) defined by Caldwell and Waring (1939), while Savannah Complicated Stamped, Savannah Check Stamped and Savannah Burnished Plain are considered as diagnostic of the later Savannah II phase (Stoltman 1974:27-31). The problem arises from the lack of exclusiveness in the

two ceramic distributions, i.e. Savannah Cordmarked occurs almost always with the latter types. Thus from about A.D. 700 to 1,200 the Savannah ceramic wares predominate without a great deal of distinction.

The Savannah phases are documented at sites from the Fall Line to the Atlantic coast. Hollywood Mound, which was excavated partially by DeBaillou (1965) and Thomas (1894), is located near Augusta, Georgia on the Savannah floodplain. The site contains all types of Savannah ware ceramics associated with a large, multi-staged temple mound (DeBaillou 1965:6-10). Although other sites with Savannah ceramics are known from the middle Savannah River, only Lawton Field (Moore 1899) has any published documentation. In the vicinity of the city of Savannah, Georgia the work of Waring (Williams 1968) and subsequent research during the W.P.A. period (Caldwell and McCann 1939) has yielded several sites of this Late Woodland-Early Mississippian period.

Deptford, Haven Home ("Indian King's Tomb"), and Irene are the best documented of these estuary region sites. Due to the rich cultural deposits contained within these sites, (e.g. burials, grave goods, whole vessels, mounds, beads, and other exotic material culture), the information base is much better than for earlier periods. The first two sites mentioned, Deptford and Haven Home contain a limited series of Savannah ceramics and are used by Stoltman (1974:27-29) to characterize the Savannah I phase. Both sites contain burials and large accumulations of artifactual debris. Only the Savannah cordmarked and burnished types occur at these sites, in association with earlier Wilmington ceramics. Unlike most earlier sites Haven Home and Deptford contain numerous burials indicating a more concentrated mortuary practice than was previously known for the Savannah area. This development appears to be continued and elaborated in the following phases.

Research by Moore (1899) and Caldwell and McCann (1941) has revealed the nature of development in the Mississippian culture at the Irene site. This complex mound center documents the ceramic chronology from Savannah phases through the Irene phase. Within the eight construction episodes at the Irene temple mound ceramics of the Savannah phases are present in all levels, being gradually replaced by Irene ceramics in the final stages of the occupation (Caldwell and Waring 1939; Caldwell and McCann 1941:43-46). Associated artifact assemblages for the Savannah phase occupation at Irene are unclear because of the pre-excavation disturbance at the site. Thus, one is faced with only a ceramic type description of the Late Woodland-Early Mississippian time period consisting of the Savannah ware of complicated stamped, check stamped and burnished sherds. Since only ceremonial sites have been excavated, any distributional inference would be misleading except to note Stoltman's comment that there was a "trend toward population nucleation [near floodplains]" (1974:243). One may add to this the increased occupation of the estuarine area surrounding the mouth of the Savannah.

The Irene phase has received greater attention in recent times along the coastal area of Georgia (Pearson 1977; Caldwell 1971). This phase has until most recently been defined by ceramics and mound complexes (Caldwell and McCann 1941; Caldwell and Waring 1939). Diagnostic ceramic indicators of this final Mississippian phase in the Savannah region are Irene filfot

stamped, Irene plain and Irene incised (Caldwell and Waring 1939). Associated with these ceramics are mounds, flexed burials, shell ornaments, and some artifacts typical of the Southern Cult, a pan-Southeastern ceremonial complex of late Mississippian times. At Irene evidence of subsistence reflects a reliance on corn, large mammals, fish, shellfish, and avifauna (Caldwell and McCann 1941).

Pearson's study of the coastal Irene settlement-subsistence pattern offers insight into the diverse subsistence base during the late Mississippian on Ossabaw Island (1977). The general results of the study indicate a structured settlement hierarchy composed of four site classes which correlate strongly with access to diverse environmental-resource zones. Smaller sites were associated with areas of less environmental variability while the large sites were located to provide maximal access to multiple resources (Pearson 1977:96-98). Although this study examines an island-estuary situation, the value of the results is that the nature of late Mississippian settlement is more complex than the situation suggested by earlier results. In the context of the Savannah River drainage, Irene phase sites must be examined with respect to diverse settlement structure and complex subsistence strategies. Previous work on the S.R.P. (Hanson, Most and Anderson 1978) located only 5 sites of the Mississippian period. Four of these occurred on the terraces of the Savannah River while only a single site was recorded in the uplands. Given this low sample size, no predictions of Mississippian site occurrence can be made for the I.S.F.S.F. study area.

Prehistoric Summary

In summary of the prehistoric occupational history in the Savannah drainage system it is possible to outline a basic cultural progression beginning with specialized hunter-gatherers (Paleo-Indian) and culminating with complex agriculturalists (Irene). This trend appears to be similar to those occurring elsewhere in the eastern United States (Ford 1974; Griffin 1967). Development seems to be due to a feedback relationship between population and potential resources leading to ever more increasing intensity in subsistence strategies. Related to these changes are those of more complex social networks, which allowed for adjustments of problems stemming from perturbations in environmental stability and social interaction.

Within the I.S.F.S.F. study area in the Aiken Plateau sandhill region, the site pattern is expected to reflect seasonal resource procurement, because this xeric region could not have supported adequate food staples to maintain human population throughout the year. Associated with these sites should be artifact assemblages of low to moderate frequency and diversity depending on the intensity of resource utilization. The expected chronological range for sites could possibly extend from the Early Archaic to Mississippian, although the observed pattern would suggest a greater probability for Woodland use of the sandhill area (Hanson, Most and Anderson 1978:126-128).

Historic Background

European settlement of the central Savannah River area began in the mid 1730's with the origins of Augusta and New Windsor. The area of "...New Windsor, opposite Augusta, with Fort Moore at its center, was thinly settled (Fig. 5). Beginning in 1736, a trickle of German-Swiss moved into the area" (Wright 1976:87). Johannes Tobler, in 1736, with his family and "...50 other Swiss families, set out from Switzerland for Carolina" (MacDowell 1970:50) to settle the New Windsor area. In 1752 Tobler started printing the South Carolina and Georgia Almanac. Although not printed every year it was the first literary adventure in the Carolina back country (Mac Dowell 1970). This portion of the back country was slowly settled and had its detractions as well as attractions.

New Windsor...had achieved a reputation for ungodliness. Land in the region was not productive, and New Windsor's principal source of income was derived from the Indian trade. George Galphin, who established a base at Silver Bluff a few miles below Fort Moore, carried on a thriving business with the Creeks from about 1750 to the Revolution (Wright 1976:87).

Indian problems in the late 1750's and early 1760's (the French and Indian War) detracted from the area's appeal. Creeks at times would rob cowpens and drive away settlers and slaves (Meriwether 1940:73). Indian treaties in the mid and late 1760's brought a peace to the area and settlers began coming in larger numbers. Settlement in the Savannah River Plant area began along the Savannah River above the swamp on the Sunderland Terrace. From there settlement advanced along the more fertile zones of the plant; the stream valleys and lowlands went first. The sandy uplands, for the most part, would not be densely settled for another hundred years.

The Revolutionary War was the next hindrance to new immigrants. Although the Savannah River Plant area itself saw no real action, Augusta was besieged three times by the American forces. In 1781 battles around the plant area included Wiggins Hill and Beech Island (McCrary 1902:552). Vince's Fort, on Lower Three Runs Creek, was evacuated by Rebel forces upon hearing of the approach of Tory troops (McCrary 1902:476). Rebel and Tory groups in the area surged back and forth, burning each others houses and scaring away others (Brown 1894).

With the end of the Revolution, the area once again began receiving new settlers and large tracts of unimproved and unclaimed land began to be cleared for crops. Although farming practices differed greatly, the majority of farmers cultivated large tracts of land with little or no thought to fertilizing or contour farming. The land quickly became worn out and the farmer would either move on to a new farm or open up a new tract of land (Sosin 1967:173). Eli Whitney, near Savannah, and Robert Watkins, in Elbert County, Georgia, improved on older cotton gins (Watkins 1796:1), helping cotton to become a major cash crop in the pre-Civil War years. Prior to the arrival of a regional rail system, cotton and tobacco were transported to market by river carriers, either pole boats or steam boat.

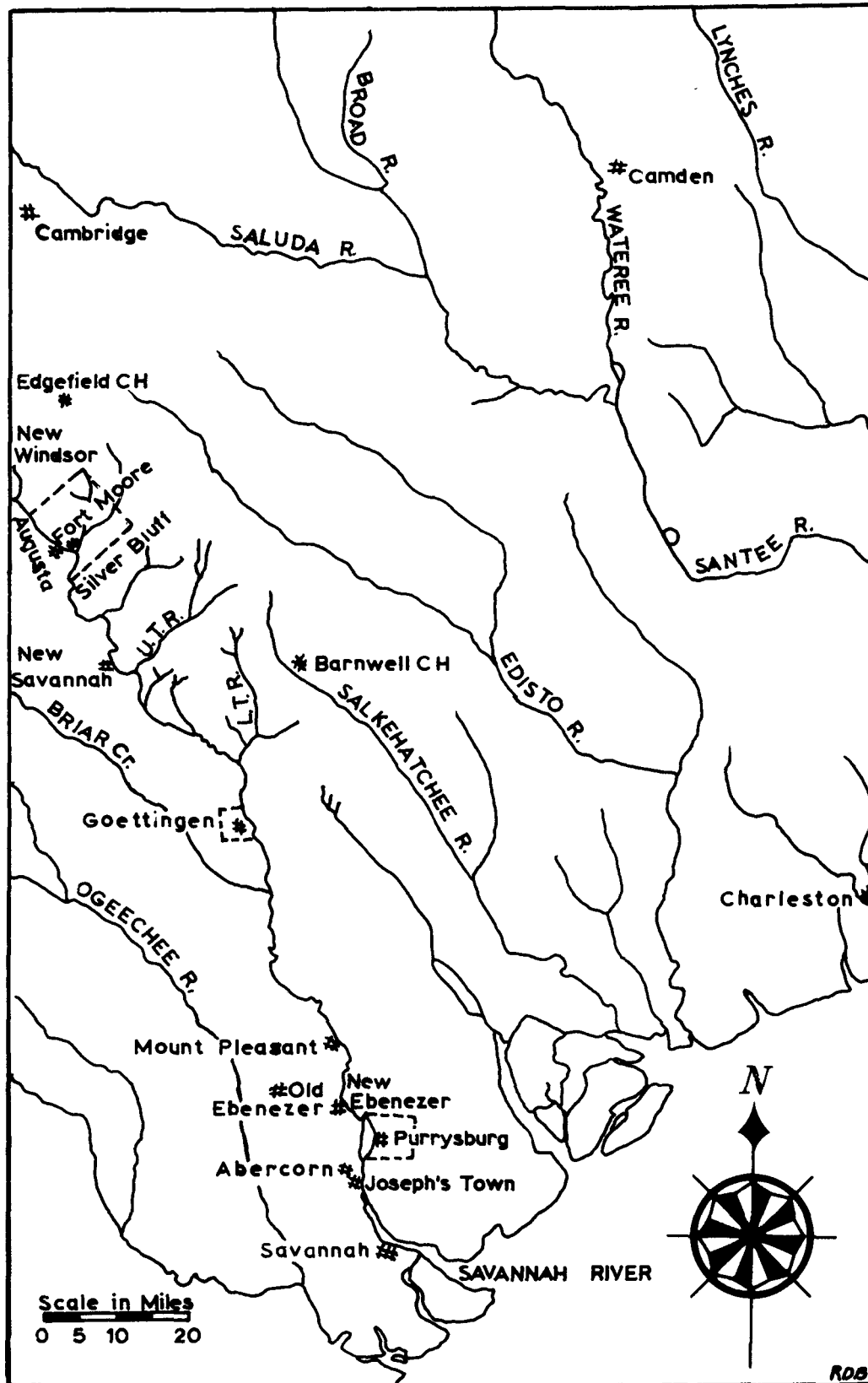


FIGURE 5. Savannah River settlements from 1730 through 1825
 (Sources: DeVorse 1966; H.S. Tanner 1825).
 (U.T.R. equals Upper Three Runs Creek and L.T.R. equals
 Lower Three Runs Creek).

Area farmers probably brought crops to either Point Comfort, near Ellenton, or near Stoney Bluff Landing, near the mouth of Lower Three Runs Creek, for shipment to Savannah (Fig. 6). Once the railroads came through the area, river transport all but died.

With the coming of the Civil War agricultural production slowed, as it did in most of the South. With most able bodied men in the army, there were few to keep the plantations running efficiently, especially towards the end of the war. Research to this point tends to imply that Federal troops were probably in the area during Sherman's march from Savannah to Columbia (Barrett 1956), but whether or not they did damage to area plantations is unknown.

The era of reconstruction brought an end to the southern antebellum lifestyle, as the end of slavery brought difficult times to southern planters. Because it was no longer profitable to run large plantations when the help had to be paid, large plantations were broken up into smaller units for tenant farming. Better transportation and mechanization that would make farming on a large scale by individual land holders profitable were still in the future.

Once the railroads built tracks through the plant area, small towns along their routes and crossings sprang up.

Ellenton was born when the Charleston and Western Carolina Railroad was built in the 1870's. The section that ran from Charleston, South Carolina to Augusta, Georgia, cut through Robert Jefferson Dunbar's plantation near his big three storied home where the superintendent of construction, Mr. Millett, boarded. He became so charmed with Mr. Dunbar's attractive nine-year-old daughter, Ellen, that he requested the company to name the station near the Upper Three Runs neighborhood for her (Cassels 1971:3).

About this same time Black suffrage was beginning in the area. White farmers objecting to this at times rioted.

...(one such) riot that shook the foundations of Aiken county was the Ellenton riot which culminated in the trial of eleven citizens of the county in the United States Court in Charleston on the Federal charge of conspiring to obstruct the right of suffrage on the part of certain colored men (Henderson 1951:11).

Uneasy relations between the races lasted until after the end of the Reconstruction period.

By 1900 the Savannah River Plant area could boast of having nine small towns or communities (Ellenton, Dunbarton, Hawthorne, Donora, Hattievill, Robbins, Meyers Mill, Greenland, and Bush), and seven of these had rail connections (Fig. 7). Population figures for Silverton township in Aiken County indicate a population increase in 1900, but a decrease in 1910. Fourmile township in Barnwell County decreased during that same period. Ellenton's population rose steadily from 1890 to 1910 (Bureau of the Census 1913).

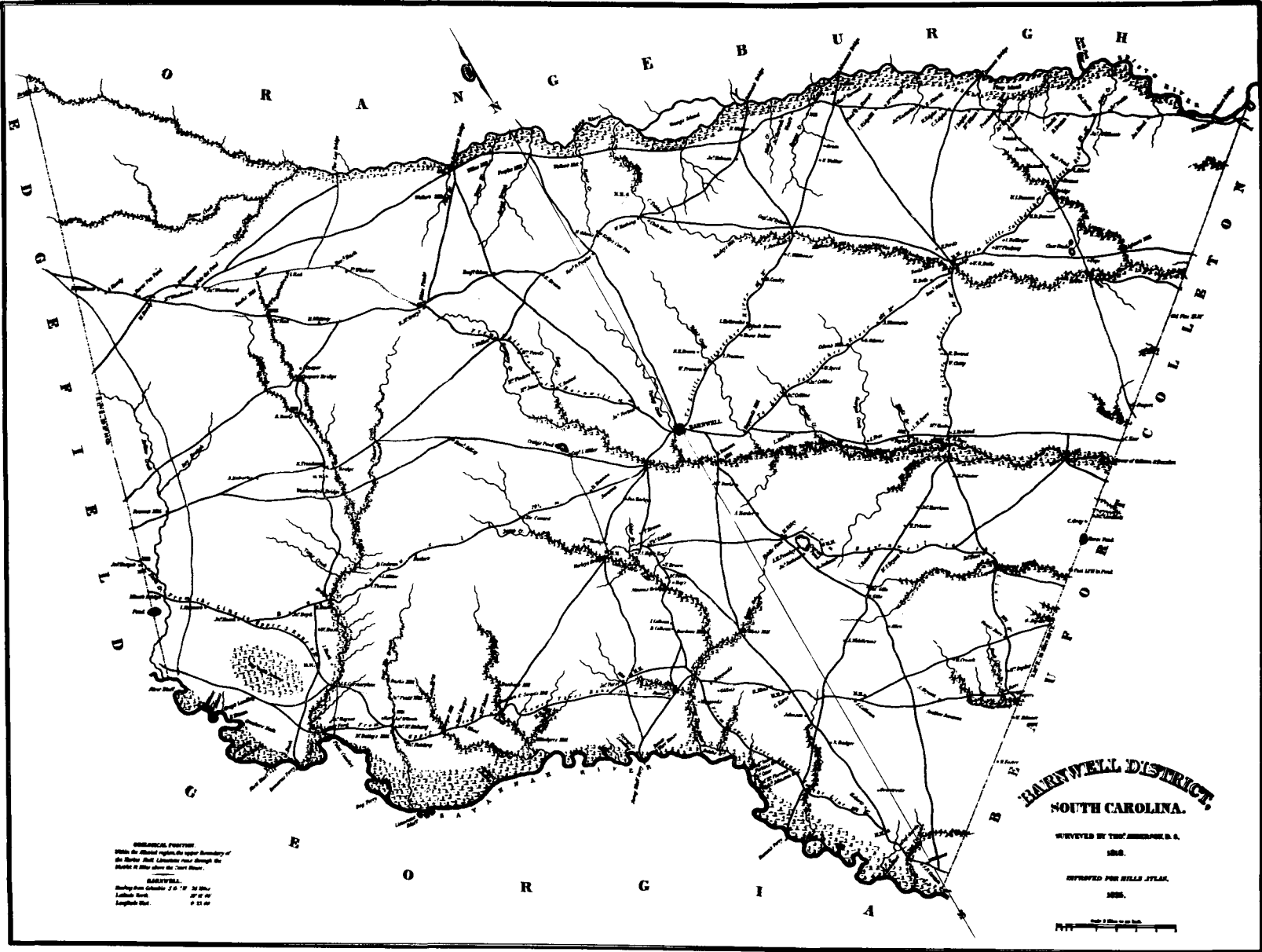


FIGURE 6. Barnwell District in 1825, from Mills Atlas (1825).

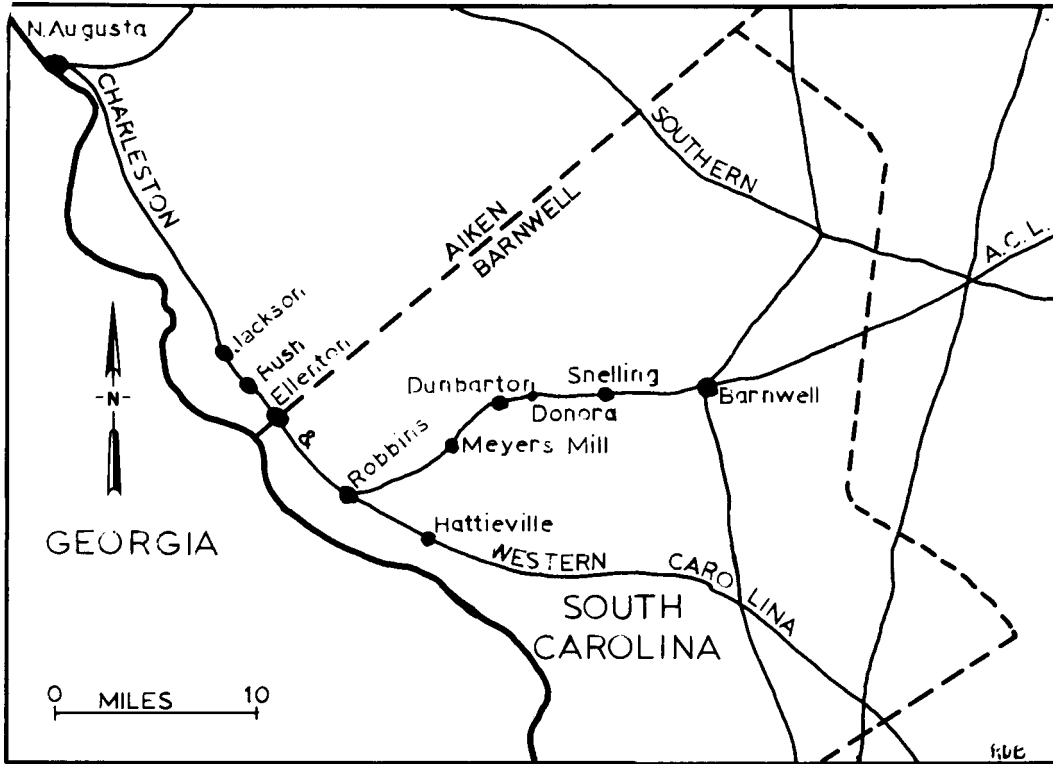


FIGURE 7. Aiken-Barnwell area in 1910 (From the *1910 Official Map of South Carolina*). Railroads are shown by solid lines.

By 1912 the Talatha Telephone company and the White Pond Telephone Company were operating in the Savannah River Plant area (Caughman 1912: 361,365,370). By at least 1938, Ellenton and Dunbarton were on the transmission line from Barnwell (Public Service Commission Map 1938).

During World War I large scale migration of rural southern Blacks to the urban North caused the formation of large Black ghettos (Kellogg 1977:310). This migration was caused in part by the fact that land farmed in the South could no longer support them and the northern cities offered a promise of industrial employment. This migration left many southern tenant farms empty and fields fallow. At this time land owners began planting their fallow fields with quick growing pines. By the late 1920's and 1930's land owners were leasing land to lumber companies for 5 to 20 year periods and allowing these companies to set up saw mills on their property. Timber harvesting became a viable alternative to cash crops, such as corn, cotton and asparagus, on land that was not very productive. After the lumber company leases ran out the land apparently went back to cultivation.

METHODS

The implementation of this study involved the planning of appropriate field methods, the intensive inspection of all areas and the detailed analysis of artifactual materials. The discussions that follow provide a thorough discussion of the methods employed.

Survey Methods

Preliminary Research

Prior to undertaking any intensive fieldwork, certain preliminary views of the study area were gained by background research. To obtain a basic understanding of field conditions such as vegetation density, accessibility and modern landmarks, preliminary inspection of recent color infrared photographs was made. This showed that the I.S.F.S.F. area was predominately covered with pine plantations in non-flooded sections roughly corresponding to the distribution of Vacluse-Blaney and Dothan-Norfolk soils. Riverine zones and the margins of the Carolina Bay showed dense hardwood stands. The only cleared ground surfaces within the entire project area were dirt roads. From these observations we were able to conclude that a survey strategy was needed that would involve the removal of dense forest litter (i.e. pine straw and leaves) in order to gain visibility of the ground surface. Further, access to certain portions of the study area would be difficult.

Since the S.R.P. was abandoned by private land owners in the early 1950's, no standing structures of any habitation were present in the facility. To determine the terminal settlement distribution in the I.S.F.S.F. (circa 1951) an inspection of large scale (1"=500') aerial photographs dating to January 1951 was warranted. Three farm sites were located on the aerials and a forth was inferred on the basis of a large tree adjacent to a dirt road (Secondary Road 123). Figure 8 is a tracing of the survey area as it appeared at the time of abandonment. Site numbers on this map indicate those places designated as archeological sites. In addition to site information these photographs provided important information on late historic land use. Most significant was the fact that all modern pine plantations in the I.S.F.S.F. area were previously agricultural fields suggesting that sites found in such places would have been somewhat disturbed.

Using land plat records dating from the acquisition of the S.R.P. property by the Corps of Engineers, a search for land owner history was initiated at the Barnwell County courthouse. Unfortunately, the property records were less complete than originally believed and only land plats for the last private occupants of the land were found in the search. This information is discussed in the individual site descriptions later in this report.

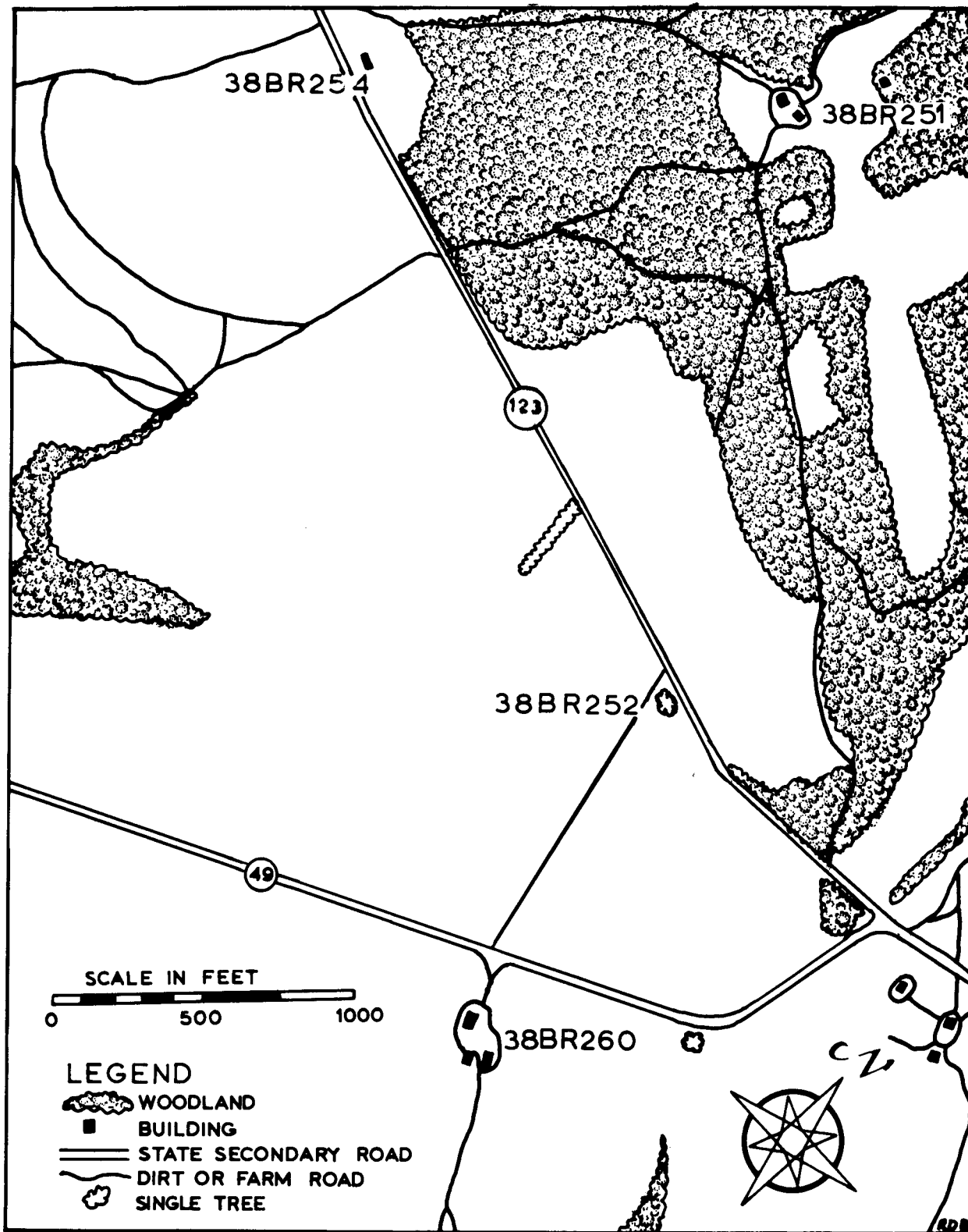


FIGURE 8. 1951 aerial photo sketch map of the I.S.F.S.F. study area showing the location of buildings and assigned site numbers. (Source: Black and white aerial photograph dated 9 January 1951 by AeroService Corporation, Philadelphia, Pennsylvania).

Finally, a records check of site files of the Institute of Archeology and Anthropology showed that ten sites had been recorded within one mile of the proposed I.S.F.S.F. area. Eight of these (38BR79, 38BR80, 38BR81, 38BR82, 38BR83, 38BR84, 38BR85 and 38BR86) are located along Four Mile Creek to the north of the study area. However none of these are listed on the National Register of Historic Places. All but 38BR86, are non-diagnostic lithic scatters located within 350 meters of water. 38BR86 is a large lithic and ceramic scatter with a definite Woodland occupation and possibly an Archaic component. Historic materials were also found at this site. To the south of the study area 2 sites occur on a tributary of Pen Branch, 38BR69 is a small lithic scatter with no discernible temporal affiliation, while 38BR70 is a moderate sized lithic and ceramic scatter assignable to the Woodland period. Both sites are within 300 meters of water and near a break in the topography leading to the streams.

Based on this information and that obtained during the general S.R.P. reconnaissance, an expected pattern of site type and distribution was generated. Most of the prehistoric sites in the vicinity were expected to be either small lithic scatters or lithic and ceramic scatters. Few were expected to contain chronologically diagnostic materials such as hafted bifaces or decorated ceramics. The locations of sites were expected to be in close proximity to water (i.e. within 500 meters) and near an environmental transition. All of these sites would be expected to be the result of food procurement and short-term settlement in the Aiken Plateau.

Finally, a brief two day field reconnaissance was conducted prior to intensive field survey in order to verify the aerial photo observations. During this time two sites (38BR252 and 38BR254) were recorded. Both were historic period farm sites recognized on the 1951 aerial photographs. In general, the reconnaissance consisted of an unsystematic walk-through of the study area to familiarize the surveyors with the area.

Intensive Survey

The primary goal of the intensive survey was the thorough examination of the intensive survey area (Fig. 9) using methods to assure adequate and reliable coverage. In wooded environments such as those in the proposed I.S.F.S.F. area, the attainment of this goal requires a creative approach to archeological survey. The major problem in locating archeological sites is ground surface visibility. Where leaves and pine straw cover the ground as in the study area, a technique must be developed which will expose the ground to examination without prohibitive expense.

Two techniques were used in the intensive survey segment of this study, rake testing and shovel testing. The former involves the removal of forest litter over an area of approximately 9 square meters with a stiff tined rake; the latter consisted of the excavation of a one by one meter test unit to a depth of 30 centimeters and the screening of all

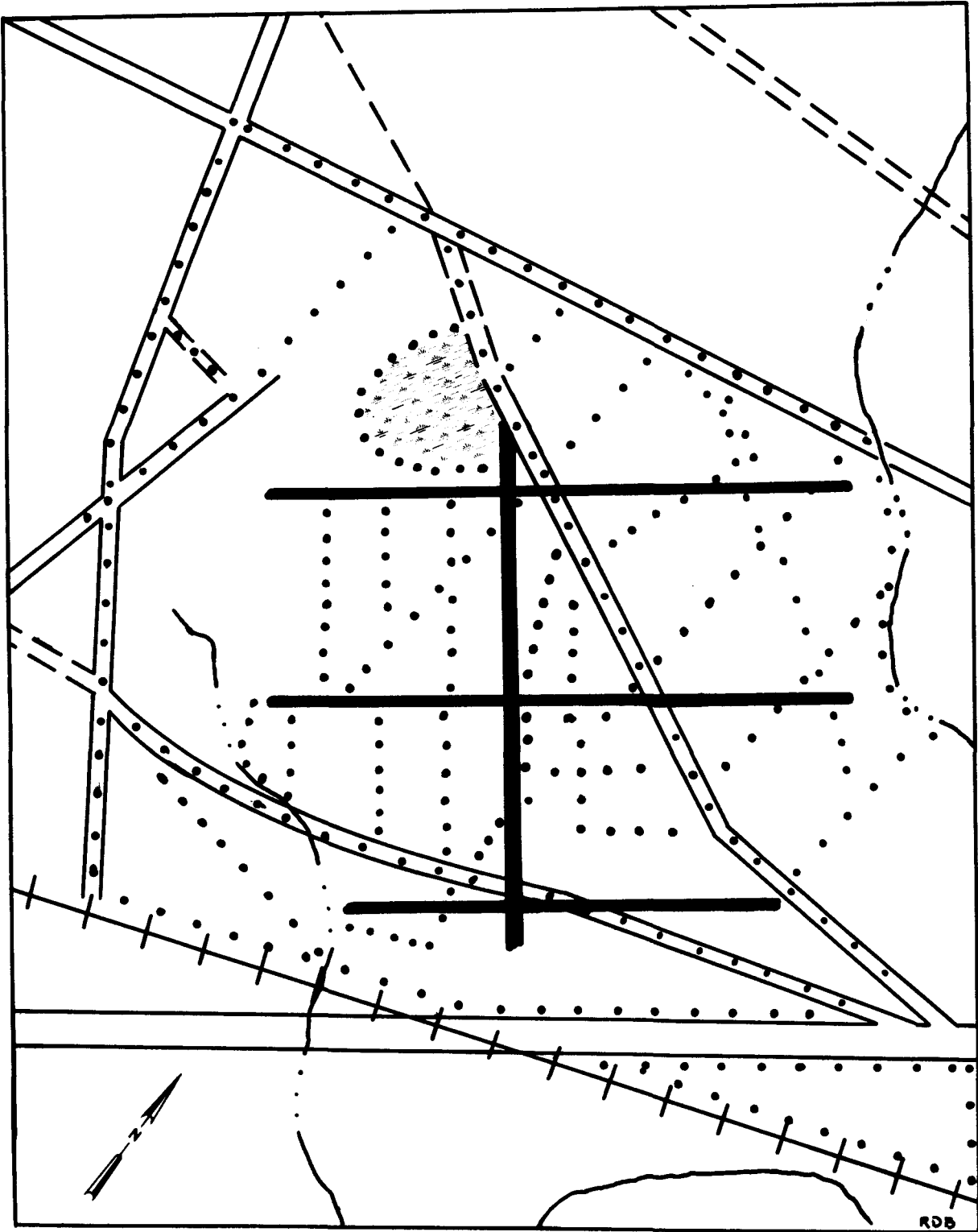


FIGURE 9. Location of intensive survey areas (Dotted lines represent predictive and systematic transects; solid lines represent areas exposed by the building of seismic access lines).

sediment. Although both of these methods allowed for the examination of ground surfaces, the rake testing was by far more efficient. Test pit excavations required two crew members to complete and averaged between 15 and 30 minutes from start to finish. Only a small amount of ground was inspected using shovel tests. On the other hand, a rake test consumed only 3 or 4 minutes of time and opened an area 9 times as large as that opened by shovel testing. Thus, the use of rakes as a tool for removing obfuscating debris from the ground in an intensive survey would seem the reasonable choice for future surveys in areas where sites are not expected to be buried by sediments.

To assure adequate coverage of the I.S.F.S.F. area, three specific survey strategies were employed during the intensive survey. The first consisted of the intensive inspection of all roads within the study area (Fig. 9). The surface of the dirt roads and adjacent ditches were carefully inspected for artifacts. Three sites were found during this phase of research, 38BR256, 38BR258 and 38BR260.

The second phase of intensive survey consisted of the inspection of the areas between the roads within the area of intensive survey as defined in Figure 2. Linear transects were systematically walked throughout the study area with rake and/or shovel tests made at intervals of 25 meters. The location of these transects is shown in Figure 9 by the dotted lines. In addition to the systematic transects, two areas were surveyed with transects which were believed to be high probability site areas. These were the edge of the terrace on the eastern edge of the study area and the Carolina Bay edge in the north central portion of the study area. Since previous research on the S.R.P. indicates these were likely site locations, rake tests were placed at intervals of 15 meters along the entire terrace edge and the Carolina Bay perimeter.

Three archeological sites were discovered during this transect phase, 38BR251, 38BR253 and 38BR257. The last site was found in a shovel test during the systematic transect phase, while the others were found during the predictive transect phase in rake tests. No other sites were found during the study.

The third phase of the intensive survey consisted of the intensive inspection of four cleared lines which were laid out for seismic research. These lines had been cleared of vegetation and scraped to a depth of 10 centimeters below the ground surface offering excellent visibility. The location of these four corridors is represented by wide, solid lines on Figure 9. Close inspection of these lines revealed no further evidence of archeological sites.

The final phase of the study involved the testing of four sites (38BR251, 38BR252, 38BR253, and 38BR254) to determine the depth and extent of the cultural deposits. All of these sites were within the main impact area of the I.S.F.S.F. Although 38BR257 was in the primary impact area, it was not tested as only 2 flakes were found during widespread rake and shovel testing over an area of 2,000 square meters. Site testing consisted of the excavation of test units to non-artifact bearing levels. 38BR251 was tested at a single 1 by 1 meter unit. Three 1 by 1 meter units were dug at 38BR253. At 38BR252, a 1 by 1 meter unit was excavated

followed by the excavation of 2 one by two meter units. Finally, a pair of 2 by 2 meter units were excavated at 38BR254. The results of this testing are discussed in the individual site descriptions.

In summary, the intensive survey of the I.S.F.S.F. was accomplished through the use of several strategies. Given the dense forest litter and vegetation of the study area, the survey made an attempt to reduce bias by such factors and to provide thorough coverage. Approximately 80% of the total land area of the study area was examined for cultural resources resulting in the discovery of eight previously unrecorded sites. Testing at sites located within the proposed impact area provided information about the size and depth of the site, as well as providing better samples of the artifact assemblages.

Laboratory Methods

Following the recovery of artifactual materials from each site, the collections were returned to the U.S.C. Archeology Laboratory on the Savannah River Plant for washing, analysis and cataloging. Analysis was conducted by the authors at this facility. All collections were cataloged using the Institute of Archeology and Anthropology system by Ms. Sandra Robinson. The materials will be curated at the Institute of Archeology and Anthropology, University of South Carolina. The discussion that follows describes the analysis procedures used for prehistoric and historic artifacts along with the descriptions of appropriate artifact categories.

Prehistoric Laboratory Procedures

All artifacts which were initially determined to be of aboriginal origin were categorized according to a system which focused on formal and functional variability. Lithic debitage (i.e. waste material) was sorted into classes on the basis of lithic reduction stages. Four classes of whole flakes were used (i.e. primary decortication flakes, secondary decortication flakes, thinning flakes and chunks) and a single class, flake fragments, was used for fragmentary pieces. Four lithic tool classes were recognizable in the collections (i.e. hafted bifaces, bifaces, unifaces and hammerstones). Each of these classes has certain types of functions assigned on the basis of form. Further the hafted biface category, also referred to as projectile points or knives, has value in determining the age of site occupation. These diagnostic point types are Savannah River points (Claflin 1931) and small triangular points within the present study. Finally, prehistoric ceramics were sorted according to surface finish since all sherds found during the survey had sand temper. Three types of surface finish were seen on the sherds recovered during the study, (i.e. cordmarking, linear check stamping and smoothing). All of these types are characteristic of the Woodland Period.

Since the samples of artifacts recovered from each site represents only a portion of the entire assemblage, no statistical comparisons between sites were made; however, the assemblages are discussed in terms of possible function and chronology in the context of each site description. The brief descriptions of artifact categories which follow will familiarize the reader with the criteria used in classifying the materials. All lithic material with the exception of hammerstones is chert.

Lithic Debitage

Primary Decortication Flakes (also Primary Flakes): These are flakes removed from a core or large chert nodule during an initial manufacturing stage. They are characterized by the presence of cortex, a weathered surface, on most of the dorsal surface.

Secondary Decortication Flakes (also Secondary Flakes): Flakes of this type are removed from a core or biface during secondary working and are discerned by the presence of cortex on a portion of the dorsal surface. Both primary and secondary decortication flakes suggest the presence of

early stage lithic tool manufacture at a site.

Thinning Flakes (also Flakes of Bifacial Retouch): These are usually small flakes removed during the shaping and thinning stages of tool manufacture; they may also be the result of sharpening dulled tools. These flakes are the most typical evidence of prehistoric occupation, as manufacturing was a common activity which produced large quantities of debris.

Flake Fragments: This category of debitage includes all fragmentary flakes broken during manufacture or some post-occupational disturbance.

Chunks: These are blocky and angular debitage pieces which do not conform to any of the above classes.

Lithic Tools

Hafted Bifaces (also Projectile point/knives): Artifacts of this type are bifacially worked tools that are formed to fit a haft. They are usually triangular in general form with a flat, stemmed or notched base. Functions assigned to these artifacts are cutting and piercing. Hafted bifaces have been determined in most cases to have temporal ranges which are useful in dating sites. Two such types were found in the I.S.F.S.F. survey. Savannah River points are large stemmed bifaces which date to all phases of the Late Archaic. Small triangular points are isosceles triangles of bifacially retouched chert which date to the Woodland Period.

Bifaces (also Other bifaces): These are large, bifacially retouched nodules of chert which have an irregular sharp edge along their entire perimeter. Their functions could range from cutting to chopping with many being preforms for hafted bifaces.

Unifaces: This category of finished tools consists of flakes which have been retouched along a single surface forming a relatively steep working edge. They may have been used for scraping or woodworking.

Hammerstones: These tools are usually stream cobbles which have been used to manufacture stone tools through a percussion technique. They are recognized by battered surfaces.

Prehistoric Ceramics (surface finish)

Cordmarked: This type of ceramic surface finish is represented by a textured surface showing the negative imprint of cordage. The cord marks are usually linear along the surface and parallel.

Linear Check Stamped: Sherds of this type have an impressed stamping which resembles the impression of a flat-toothed gear along the clay running parallel and in close proximity to other similar imprints.

Plain (also Smoothing): Sherds of this type have been smoothed to an even surface finish. No other texturing is present. These sherds could represent either the basal portions of decorated vessels or part of a completely plain vessel.

Historic Laboratory Procedures

The historic artifacts underwent several analyses. The first of which included the tabulation of the artifacts for the artifact tables. The second analysis included a close inspection of the glass and ceramics for distinguishably different and/or individual pieces. Analysis of these historic ceramics and glass was greatly facilitated by placing them on a white background. This was done because against this white background slight color changes in the glaze are readily distinguished. In the case of ceramics, creamware and pearlware exhibit a slight greenish tinge or a blue tinge respectively, in the glaze, as opposed to ironstone/white-ware which exhibits none. The following Artifact Descriptions are keyed to the Historic Artifact tables in each site description.

Ceramic Artifact Category Descriptions

Porcelain/serviceware: No date range. No pieces of porcelain were found that exhibited any decoration.

Undecorated pearlware: Date range 1780-1830 (South 1977:212)"... it can readily be distinguished by the way in which the glaze appears blue in the crevices of footrings and around handles" (Noel Hume 1970:131).

Ironstone/whiteware: Date range 1813 to present (South 1977:210-211). Ironstone/whiteware appears in "various forms of hard whitewares and semi-porcelain that are extremely difficult to date with accuracy..." (Noel Hume 1970:130-131).

Alkaline glaze stoneware: Date range 1800 - present (Greer 1970). Usual colors range from light yellowish green to olive green, probably of local manufacture.

Albany slip stoneware: Date range unknown. "Usually exhibited by a black, brown, or white slip glaze over the body of the vessel,(South, personal communication)," probably locally made.

Glass Artifact Category Descriptions

Opaque glass: Date range 1650 to 1880 (Noel Hume 1970:62). This refers to that olive-green/olive-amber colored glass that was produced without decolorizers, commonly called black glass (Noel Hume 1970:71; Kendrick 1976:52). As the name implies this glass is basically opaque or black in appearance, and poorly made containing many bubbles and stress marks (Noel Hume 1970:60-71).

Manganese glass: Date range 1880-1915 (Kendrick 1976:54-55; Toulouse 1972:534). This is glass that was decolorized by the inclusion of manganese into the manufacturing process (Toulouse 1972:534). This glass changes from clear to a purple color. The intensity of the purple is determined by how long it was exposed to sunlight (Kendrick 1976:54-55). This is not to be confused with deliberately colored purple glass, which is much darker.

Brown glass: Date range unknown. Exhibits the same color characteristics as that glass containing beer and whiskey for today's market, with the same range of colors.

Blue glass: Date range 1750-present (Noel Hume 1970:62). A well made glass containing few if any bubbles, and is similar in appearance to glass produced today (i.e. Noxzema jars).

Green glass: No date range. Usually a well made glass containing few bubbles, it is similar to the color range of the green wine and soda bottles (7-UP, Mountain Dew, etc.) made today.

Green and Aqua Tinted glass: No date range. These two categories are similar in description and appearance. Both are basically clear until held to a white paper when they will exhibit their particular tint or tinge, which is caused by the iron content in the glass (Vienneau 1969:11).

Cola bottle glass: Date range 1899 to present (Coca Cola 1974). Similar in appearance to aqua tinted glass but is generally 3 to 5 mm. in thickness. The mouth is generally shaped to accept a crown cap, embossed letters will usually distinguish this from non-soda bottles.

Clear glass: Dates generally after 1860 (Jones 1971:11). As the name implies this glass exhibits no color or tint when held to white paper.

Opal glass: Dates from about 1869 when it was first patented as a liner for Mason's zinc jar cap, to keep foods from acquiring a metallic taste from the zinc (Toulouse 1972:350-351). Similar in appearance to milk glass except it exhibits an opal-like appearance.

Milk glass: Date ranges from after 1870, although it was first produced in the 1840's (Belknap 1949). It is that glass that has either zinc or tin included in the manufacturing process as a coloring agent (Kendrick 1976:54).

Window/mirror glass: No date range. The window category includes glass that exhibits no curvature and is generally less than 3mm. thick. The mirror category also exhibits no curvature but is generally greater than 3mm. thick and may or may not be silvered.

Fruit jar lid: Dates after 1869 when it was first patented (Toulouse 1972:430). Made of either opal or milk glass.

Architectural Artifact Category Descriptions

Cut nails: Date range 1790 to present (Noel Hume 1970:253). Rectangular in shape, usually without a head and tapering to a square end. Usually too rusted to identify type with certainty.

Wire Nails: Date range 1887 to present (Fontana 1965:89), earlier manufacture dates are known; however, expense of these nails and their rarity would preclude this date.

Brick: Date range unknown.

Plaster broad: Date range unknown.

Activities Artifact Category Descriptions

Farm tools: Date range unknown, however, possible figures on the plows indicate a date circa 1880's to 1890's. The only artifacts classed under this heading were pieces of plow parts.

Miscellaneous hardware: Date range unknown. This class consists of bolts and nuts of various sizes.

Miscellaneous Artifact Category Descriptions

Wire: Date range unknown. This class consists of various sizes of wire from 1 to 6 cm. long.

Unidentified metal: Date range unknown. Various shapes and sizes of metal pieces of unidentifiable usage.

Other: No date range. This class consists of 1 oyster (*Crasostrea* sp.) shell (38BR256); bottle tops, metal shell casings and spark plug metal.

THE ARCHEOLOGICAL RESOURCES OF THE I.S.F.S.F. AREA

During the intensive survey of the I.S.F.S.F. area, 8 previously unrecorded archeological sites were located. Each of these sites was examined in detail in order to provide the necessary data for assessment of the sites relative to National Register of Historic Places criteria. Three sites were representative of prehistoric occupations while the remaining five sites represent historic occupations. The descriptions that follow are designed to provide the reader with the essential information recovered at each location. A summary of the survey results concludes the section. The locations of each site is shown on Figure 10.

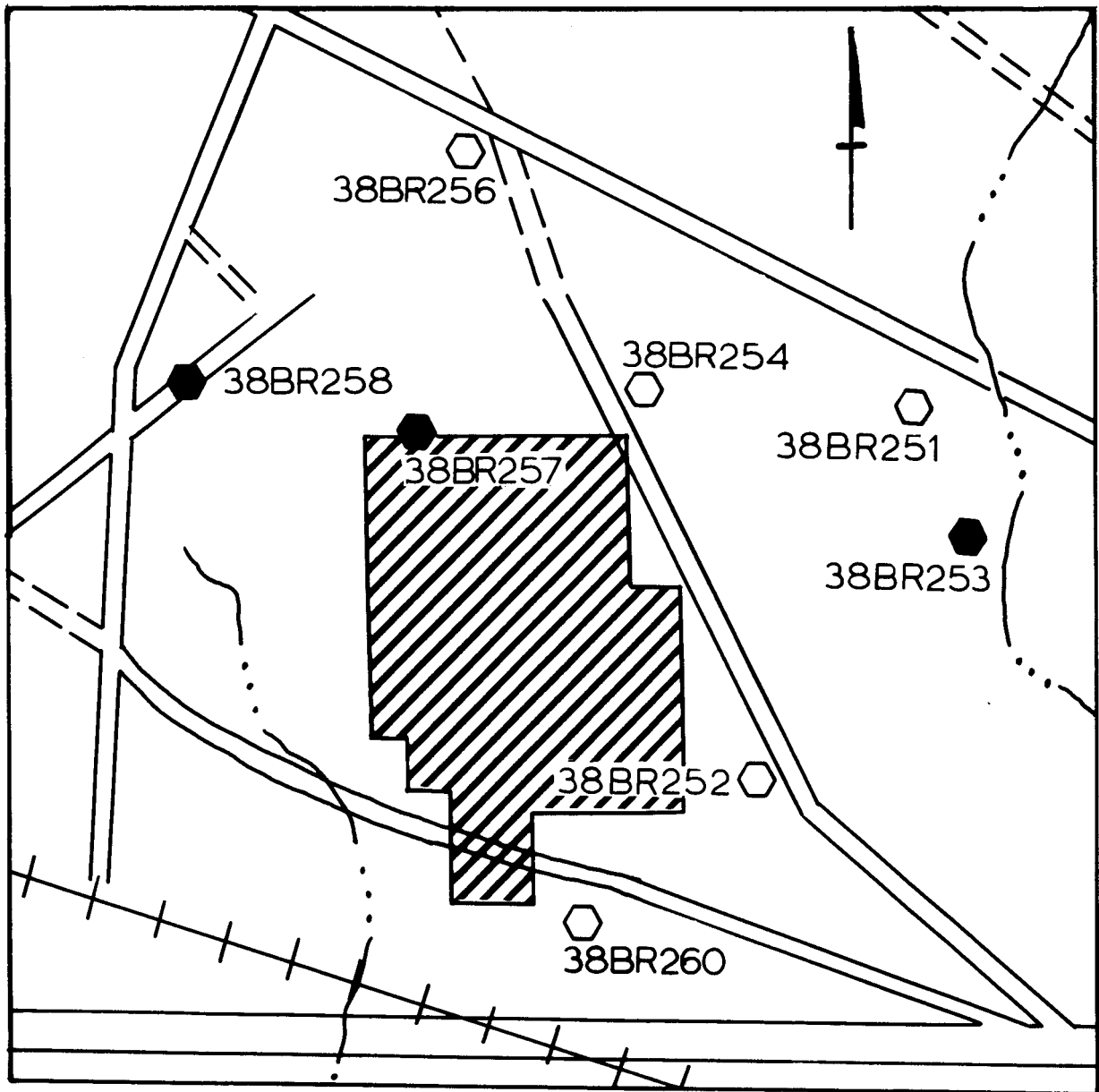


FIGURE 10. Archeological site map. (Solid hexagons are prehistoric sites; hollow hexagons are historic sites; and the hatched area is the construction site).

Prehistoric Sites

38BR253. This prehistoric lithic and ceramic scatter is positioned on a terrace overlooking a small tributary of Four Mile Creek on the east. This location lies outside of the proposed construction area for the I.S.F.S.F. at Universal Tranverse Mercator (U.T.M.) coordinates 3680325 meters North and 441940 meters East in Zone 17 (Fig.10). No records of this site were present in Institute of Archeology and Anthropology site files. It was first discovered during the intensive survey of the I.S.F.S.F.

First recognition of the scatter occurred while implementing the survey of predicted site locations along the terrace edge. Surface artifact debris consisted of ceramic sherds, lithic debitage, broken hafted bifaces and hammerstones. These were scattered over an area of approximately 9,000 square meters (100 meters east-west by 90 meters north-south). Most of the artifacts were recovered by raking away the forest litter of pine straw and examining the exposed ground surfaces. Approximately twenty 3 by 3 meter rake exposures were made to obtain the surface collection.

To complement surface collections and determine the site's depth, three one by one meter test pits were excavated to sterile (non-artifact bearing) sediments. All three excavation units yielded occupational evidence consisting mainly of lithic debitage and fragmentary hafted bifaces. Some ceramics were recovered in one of the tests. In each of the test pits sterile sediments were encountered at 15 centimeters. These very coarse, yellow, clayey sands contrasted markedly with the tan sands on the surface. Therefore, the site is well defined in three dimensions having a maximum depth of approximately 15 centimeters throughout. The location of the test pits is shown in Figure 11.

The chronological period during which the site was occupied was determined on the basis of ceramic finish similarities and a single diagnostic hafted biface. Ceramic surface with chronological significance was limited to two sherds, a linear check stamped sherd from the Deptford phase and a cord marked sherd with general Woodland associations. This evidence, although not overwhelming, suggests that the site was occupied sometime between 500 B.C. and 700 A.D. Complementing this data is the single small triangular hafted biface which is a common tool type of the Woodland period (Stoltman 1974).

This site was set in a rather interesting environment which may have been the main reason for its use as a base camp. Although modern vegetation patterns cannot be reliably used to predict prehistoric patterns, it is reasonable to assume that soils have remained unchanged. Soils limit the vegetation capabilities of a location by their water holding capacities, their texture and their nutrient levels. Thus, the presence of 38BR253 near the edge of two soil types, Vaucluse-Blaney and Johnson-Okenee, suggests its location was near two distinct vegetation zones. As discussed in the environment section of this report, the Johnson-Okenee soils are characteristic of bottomlands with dense hardwood vegetation and the Vaucluse-Blaney soils are common to slopes and uplands with more xeric vegetation (Fig. 12). The division between

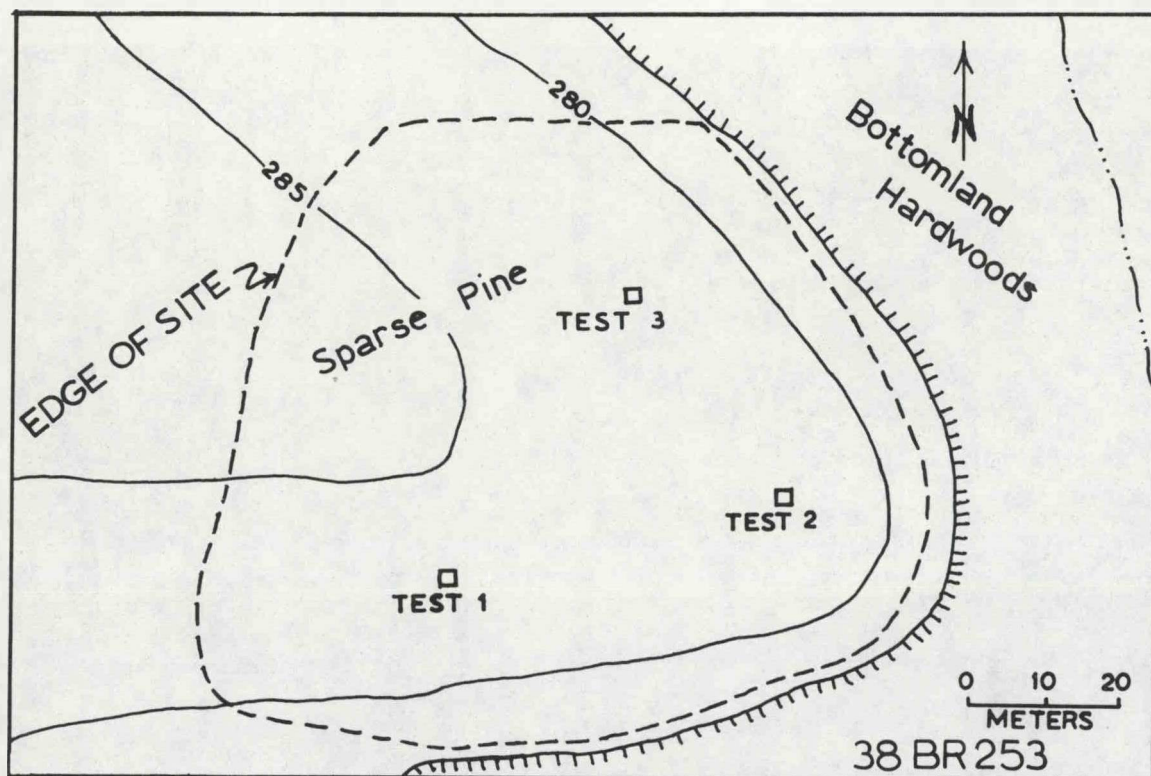


FIGURE 11. Map of 38BR253 showing general contours and location of test excavation units (dashed line designates limits of the site).



FIGURE 12: Photograph of 38BR253

the two soil-vegetation association is the terrace edge upon which 38BR253 is situated. Another important geographic property of this location is the stream which is only 50 meters to the east. Taken together the proximity to water and the accessibility of two distinct environmental zones would have made this setting excellent for the exploitation of floral and faunal resources in the Aiken Plateau.

The composition of the artifact assemblage at 38BR253 is suggested by the combined artifact sample obtained during the survey. Table 2 presents the artifact classes found at the site with their respective weights and frequencies. Lithic debitage, consisting of 54 items, made up the majority of the collection. The relatively high proportion of thinning flakes suggests the maintenance of stone tools while the other debitage categories, secondary decortication flakes and chunks, suggest tool manufacture. Flake fragments do not allow any inference as to activity. Further evidence of lithic tool maintenance and manufacture is provided by the two hammerstones. These quartz cobbles which show evidence of extreme battering on their surfaces were probably used to flake preforms and finished chipped stone tools. The three fragmentary hafted bifaces provide evidence that they were used, broken and discarded at the site. Their inferred functions include use as a cutting implement and as a projectile, both of which can be related to hunting. A single biface fragment was too small to determine whether it was a preform or knife.

The presence of six ceramic sherds, indicative of three different vessels (based on paste, color and temper comparisons), suggests that the site was used for more than a few days. Ceramic vessels being cumbersome and fragile would not be expected to be used during brief food procurement forays. Thus, based on the artifact collection from 38BR253 it is reasonable to conclude that the site was occupied for an extended period of more than a few weeks and was used as a base camp for hunting and other food procurement, for food preparation and for tool manufacture and maintenance. The total artifact frequency (66) falls within the large site pattern derived from analysis of sites located during the general reconnaissance of the S.R.P. (Hanson, Most and Anderson 1978).

Since its abandonment the site has been subjected to disturbance by agricultural activities such as clearing and plowing which may have caused some alteration of the artifact distributions. Examination of 1951 aerial photographs showed that the site was used as a field. Some erosion in the form of surface washing of fine sediments took place as indicated by the increasingly finer texture of the soil downslope. However, no gullies or major erosional activity have disturbed the site, leaving it a fairly well preserved locality. Excavations in the test pits showed that the artifacts were not churned by plowing or other disruptive activities. For this reason it can be concluded that the site is quite well preserved and that its spatial and artifactual integrity have not been greatly altered.

Given the diverse artifact assemblage, the ecotonal setting and the limited disturbance of the site context, the site can be considered as an important archeological resource. Indeed, it has the

TABLE 2

38BR253: ARTIFACT SUMMARY

<u>Lithic Debitage</u>	<u>Frequency</u>	<u>Weight (grams)</u>
Secondary Decortication Flakes	4	8.0
Thinning Flakes	27	34.0
Flake Fragments	22	19.9
Chunks	1	.9
<u>Lithic Tools</u>		
Hafted Bifaces (Fragments)	3	3.8
Bifaces (Fragments)	1	7.1
Hammerstones	2	675.5
<u>Ceramics (Grouped by surface decoration)</u>		
Cordmarked	1	8.1
Linear Check Stamped	1	28.0
Plain	1	8.7
Eroded surfaces	3	26.5
<u>Diagnostic Hafted Biface</u>		
Small Triangular Point (Fragment)	1	1.1

potential to yield significant information about prehistory, specifically the nature of upland utilization by populations during the Deptford phase and Middle Woodland period. The artifact content at the site demonstrates that the site was probably a base camp used for a finite time period for specific food procurement and processing activities. If investigated further, the site would provide archeology with a better understanding of resident group size, activity structure, technological variability and seasonal resource capture during the Woodland Period. Such knowledge would greatly contribute to a general understanding of the adaptive strategies employed during the period, especially in comparison with data from Woodland habitation sites in other locations.

38BR257. This rather small prehistoric flake scatter is situated on the crest of the interfluvial ridge in the middle of the main construction area for the I.S.F.S.F. Its U.T.M. coordinates are 3679850 meters east and 441360 meters east in Zone 17. The closest water is the Carolina Bay located approximately 250 meters to the north (Fig. 10). A records check of the site files at the Institute of Archeology and Anthropology showed no site recorded in this location. The site was discovered during the systematic transect survey.

Evidence for this site was found in a small shovel test along a linear transect through the central portion of the study area. A single fragmentary chert flake was found during the screening of soil from the test hole. Subsequent rake and shovel tests in the vicinity revealed only one more flake fragment at about 10 meters from the original finding. This extremely low artifact density lead to the conclusion that the site was limited in content and small in size. No quantitative estimates of site extent were possible because only two artifacts were present. The fact that only two chert flake fragments were recovered after over 1.5 man hours searching at this location suggests a ephemeral occupation or use.

The environmental setting of this locus is quite uniform over a large area. Falling in the center of a large tract of ridge top characterized by Dothan-Norfolk soils, the local situation presently supports a managed stand of loblolly pine. Given our understanding of soil-vegetation associations, we would expect the prehistoric association to have been a xeric community composed of pine and small scrub hardwoods. This environment would most likely have been used for faunal exploitation. In fact, the flakes may represent the maintenance of hunting or butchering site. However the data from this site is insufficient to support anything but speculative statements as to site function. No chronological placement can be made due to the lack of diagnostic artifacts.

In summary, this site does not contain information suitable for resolving future research questions important in archeology. Its singular value lies in its ability to help understand the distributional characteristics of small hunting related sites. This information is already obtained so there is no need to suggest additional work at the site. It is not eligible to nomination to the National Register of Historic Places for these reasons.

38BR258. This large prehistoric lithic scatter is situated on the extreme western edge of the study area on a high hilltop near the drainage divide between Four Mile Creek and Pen Branch. This location falls well outside of the proposed I.S.F.S.F. construction area at U.T.M. coordinates 367620 meters north and 440820 meters east (Fig. 10). The search of site records at the Institute of Archeology and Anthropology revealed no previous designation for this site. It was first discovered during the general survey of the western portion of the study area to inventory sites in secondary impact areas.

The site was recognized by lithic debris scattered in Road E-1. Further surface inspection showed the materials extended over an area of approximately 10,000 square meters (100 meters by 100 meters). Since a large area of ground was exposed by road grading and drainage ditches, only surface collection was done at the site. Examination of the roadcuts showed that the culture bearing deposits terminated at about 20 centimeters near the contact between the coarse surface sands and a sandy clay subsoil.

The sample of the artifact assemblage contains numerous chert debitage pieces, three hafted biface fragments and a small 'thumbnail' scraper (uniface). Tool manufacture and maintenance are represented by the 46 flakes and chunks (Table 3). The presence of a single primary decortication flake and 2 secondary decortication flakes suggests that primary tool fabrication took place at the site. The remaining debitage suggests secondary tool manufacture and tool maintenance. Three hafted biface fragments, one of which is a base from a Savannah River point, suggest the use and discard of cutting tools at the site. Lastly, the small scraper was probably used in some woodworking capacity. In summary, this artifact assemblage sample would appear to represent a number of diverse activities relating to meat processing (cutting), tool manufacture and maintenance and woodworking. It is possible that this combination of activities represents a hunting camp. Such an inference is also supported by the environmental setting of the site.

The natural environment of 38BR258 is quite xeric and distant from water. The Dothan-Norfolk soils in this context, above 340 feet, are very coarse and low in available water. In fact, no pine management has been considered for this area because of the low soil productivity. The present vegetation consists of scrub hardwoods and diminutive pines (Fig. 13). Erosion has badly disturbed many surfaces that were cleared for road and powerline construction. This rather unproductive environment would support some faunal species but not very high densities. On the whole, this location seems to suggest low productivity of food resources and would certainly not be suitable for long term residence.

Little firm evidence was present for assigning the site to a specific chronological period, other than the aforementioned Savannah River point. The two other hafted biface fragments recovered on the surface were too small to assign to a diagnostic category. Thus, it must be concluded that the site was occupied during the Late Archaic period sometime between 3000 B.C. and 1000 B.C.

With respect to the complete information set for 38BR258 it appears

TABLE 3

38BR258: ARTIFACT SUMMARY

<u>Lithic Debitage</u>	<u>Frequency</u>	<u>Weight (grams)</u>
Primary Decortication Flakes	1	4.0
Secondary Decortication Flakes	2	15.0
Thinning Flakes	11	20.2
Flake Fragments	29	23.4
Chunks	2	5.1
 <u>Lithic Tools</u>		
Hafted Biface (Fragments)	3	6.5
Uniface (Thumbnail type)	1	2.0
 <u>Diagnostic Hafted Bifaces</u>		
Savannah River Point (Fragment)	1	4.1



FIGURE 13: Photograph of 38BR258

that the site was a multiple activity loci relating to some aspect of the Late Archaic hunting pattern in the sandhills. In contrast to sites found in similar locations during previous research in the area (Hanson, Most and Anderson 1978), 38BR258 is rather uncommon. High artifact frequency and artifact diversity are not common to the upland ridges of the sandhills. For this reason, the data already available for 38BR258 indicate that the site is very significant in understanding Late Archaic land use patterns in the Aiken Plateau. Although the site has been partially disturbed by road building and maintenance activities, it still contains important information. This information could contribute to the resolution of research questions such as, How intensive was the Late Archaic use of the Aiken Plateau? Was it limited to the Late Archaic period? The data available at the present can only hint at answers. Thus, this site should be considered as eligible to the National Register of Historic Places and should be avoided, if possible, during construction related to the I.S.F.S.F. If avoidance is not possible, then appropriate measures should be taken to mitigate any adverse effects.

Historic Sites

38BR251. This historic artifact scatter is located on a ridge nose about 100 meters from an unnamed tributary of Four Mile Creek. This location is just outside the proposed construction area for the I.S.F.S.F. at Universal Transverse Mercator (U.T.M.) coordinates 3680250 meters North and 441720 meters East in Zone 17 (see Fig. 10). No records of this site were present in Institute of Archeology and Anthropology site files. It was first discovered during the intensive survey of the I.S.F.S.F.

Initial location of this site came during the transect phase of the survey. The first location of artifacts occurred in a fire break on the north slope of the ridge nose. Investigation of the ridge nose located two piles of roofing tin, a well, a trash area, and a debris mound (Fig. 14). The mound contained rotting wood, as did the well, brick and metals, indicating that this house was probably bulldozed when acquired by the government in 1951. Surface investigation of the site and raking two meter by two meter squares of forest litter determined the area of the site to be approximately 5,000 meters (100 meters east-west by 50 meters north-south).

Surface inspection indicated that the majority of the site had very little of the top layer of tan sandy loam left, most of the site was down to a yellow course sandy-clay of the Vaucluse-Blaney soils group. This yellow sandy layer on other sites was void of artifacts, except for surface collections. An area west of the post oak (Quercus stellata) appeared best suited for testing (Fig. 15), a 1 by 1 meter test pit was dug to a depth of approximately 15 cm. to the yellow sand layer. Artifacts recovered included ceramics, glass, brickbats and plow parts (Table 4). The largest collection of artifacts was obtained from a trash area just north of the test pit.



FIGURE 14: Photograph of the debris mound at 38BR251.

Table 4

38BR251: Artifact Summary

<u>ARTIFACT CLASS</u>	<u>FREQUENCY</u>	<u>WEIGHT*</u>
KITCHEN		
Ironstone/whiteware	2	609.0
Alkaline glaze	2	13.5
Manganese glass	8	85.5
Brown glass	3	12.3
Blue glass	1	2.9
Green glass	1	0.6
Aqua tint glass	2	361.4
Clear glass	14	402.6
ARCHITECTURE		
Brickbats	6	81.1
ACTIVITIES		
Farm tools	1	81.2
MISC.		
Unidentifiable metal object	5	66.3

* Weights in grams

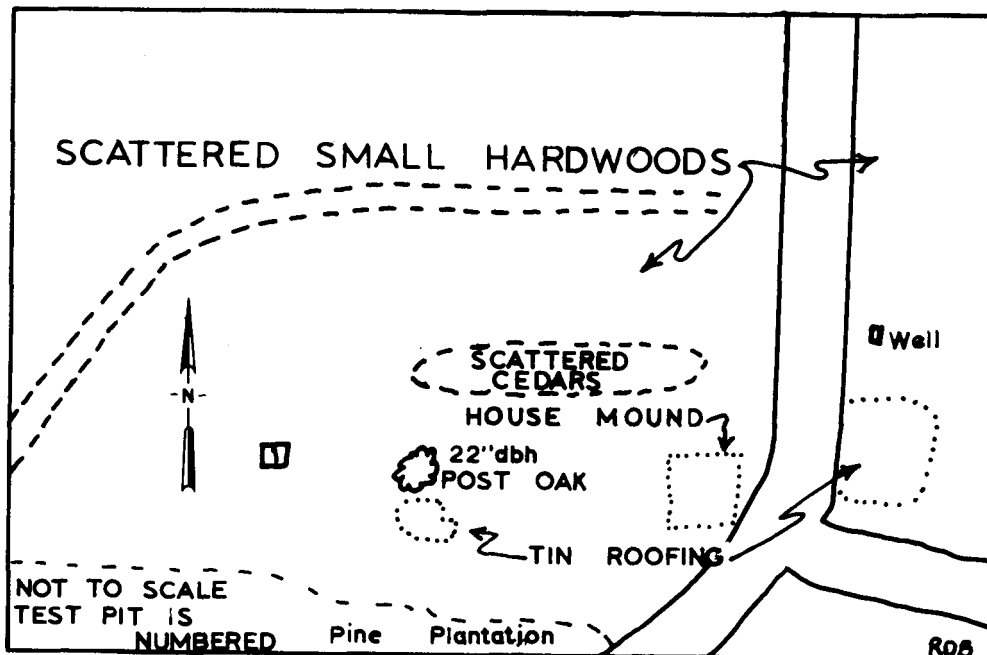


FIGURE 15. Sketch map of 38BR251.

38BR251 belonged to Eliza Dunbar as early as 1895 according to Barnwell County Records, and in 1935 Lizzie Dunbar gave the land to Mattie Simmons. The plat of this transaction shows the location of a house in approximately the same position as this site. The land remained with the Simmons family until it was purchased by the government. The site is also located on the 1951 aerial photo sketch map (see Fig. 8). This photograph was an aid in determining the size and extent of the site.

The artifacts (see Table 4) indicate, through dating techniques, that the site was occupied possibly from 1880 to 1951. They also indicate that this site, as other sites discovered by this survey, conforms to the Historic Artifact Pattern first recognized by Brooks (1979) in the Russell Reservoir Survey. This suggests that, based on artifactual evidence only, the site is most probably a tenant farmer or a small farm owner occupation, and dates from the beginnings of the tenant period following the Civil War about 1870 and occupied usually up to the 1940's or 1950's. The overwhelming majority of artifacts falls within the kitchen class (South 1977). Glass dating from the post Civil War era comprises the larger percentage of these artifacts. Although the house was probably bulldozed and portions of the site are without topsoil, the integrity of the site appears to be in good shape. With the well still standing, the trash area intact and wood still present in the house mound, this makes this an excellent study area.

The land surrounding the site is in scattered small hardwoods indicating that the area was allowed to grow naturally, rather than being planted in pines. This means that the area has not been disturbed since the house was destroyed, when Willie Simmons sold the property (50 acres) to the government. No mention was made of accompanying buildings in the deed. This may indicate that there were no buildings standing when the property was sold, which would mean that the area was allowed to remain undisturbed since it was abandoned, possibly in the 1940's.

This site could possibly be nominated to the National Register of Historic Places, because of the integrity of the house mound and other areas of the site. This period in history, the Tenant era, is not very well known archeologically, the majority of historic sites in South Carolina belong to this era. Serious investigation of these sites is necessary. The significance of this site is open to question. However, full scale investigation of a site of this type (tenant/small land owner) could lead to information of value.

38BR252. The historic artifact scatter is located on a ridge between Four Mile Creek and Pen Branch. This location (see Fig.10) is on the edge of the proposed construction area of the I.S.F.S.F. at Universal Transverse Mercator (U.T.M.) coordinates 3679900 meters North and 441960 meters East in Zone 17. No records of this site are in the files of the Institute of Archeology and Anthropology site files. It was first discovered during the intensive survey of the I.S.F.S.F.

Initial location of this site came during the preliminary reconnaissance phase of the survey. This site was located because of the

size of a willow oak (Quercus phellos) next to the road. During the Russell Reservoir Survey (Taylor and Smith 1978) it was noticed that there was a correlation between large hardwood trees and historic sites. When the tree was encountered during this survey the area was checked for historic artifacts and small amounts of ceramics and glass were recovered (see Table 5). Later during the testing phase of the survey three test pits were excavated to a depth of 40 to 45 cm (Fig. 16) and the artifact frequency was many times greater than in the initial road surface collection. A second collection of the road surface was made following heavy rains. To attain better control of the artifact distribution, the road was segmented into 10 meter long units for 100 meters. The artifact sample from this collection increased the total for the site considerably. The size of the site was determined to be approximately 3,000 sq. meters (100 meters northwest-southeast by 30 meters northeast-southwest).

Surface inspection and excavation revealed that the site had been almost completely destroyed by either bulldozing or plowing activity. Inspection of the aerial photograph (see Fig. 8) indicated that there was no structures located there in 1951, and inspection of 1946 and 1939 maps also indicated no structure giving a fairly reliable terminus ante quem. The artifacts (see Table 5) indicate that the site was occupied after 1880 with a median date of about 1903. The excavated artifacts were evenly dispersed within the first 45 cm. of tan sandy loam. The yellow course sand substratum contained no artifacts. Both of these sands are from the Dothan and Norfolk soil group.

There were no plats available to indicate who may have lived at this site although the property belonged to Lizzie Dunbar and the 1935 plat of her property indicates that there were no structures at this location.

This site other than a large artifact collection has little significance to the archeological record, the site has no integrity left as it was obviously destroyed.

38BR254. The historic artifact scatter is located on a ridge between two unnamed tributaries of Four Mile Creek. This location (see Fig. 10) is on the edge of the proposed construction area of the I.S.F.S.F. at Universal Transverse Mercator (U.T.M.) coordinates 3680020 meters North and 441470 meters East in Zone 17. No records of this site are in the files of the Institute of Archeology and Anthropology site files. It was first discovered during the intensive survey of the I.S.F.S.F.

Initial location of this site came during the aerial photographic survey of the area, and the location of this site on the ground came during the initial testing portion of this survey. The site is bounded on one portion of the road by 14 to 27 inch d.b.h. sweetgums (Liquidambar styraciflua) and along the entire north side by small scattered oaks (Quercus sp.) and elms (Ulmus sp.). According to the 1951 aerial photo (see Fig. 8 for sketch) there was one building located here; however, the earlier plats do not note a building at this location and it is assumed that it was built after 1935. Artifacts were collected in ten meter intervals along the road for one hundred meters. It was assumed that the house would be located along the road where there was the greatest concen-

Table 5

38BR252: Artifact Summary

<u>ARTIFACT CLASS</u>	<u>FREQUENCY</u>	<u>WEIGHT</u>
KITCHEN		
Porcelain	1	0.7
Ironstone/white ware	5	8.4
Brown slip	1	5.7
Manganese glass	30	89.0
Brown glass	4	5.8
Blue glass	2	4.0
Green glass	1	1.0
Aqua tint glass	26	68.6
Clear glass	49	78.8
Cola bottle glass	1	1.2
Opal glass	2	10.6
Milk glass	5	18.3
ARCHITECTURE		
Window glass	1	2.9
Wire nail	6	40.4
Brickbats	62	807.9
ACTIVITIES		
Farm tools	7	2844.6
Misc. hardware	2	83.8
MISC.		
Wire	6	9.0
Unident, metal object	12	262.7

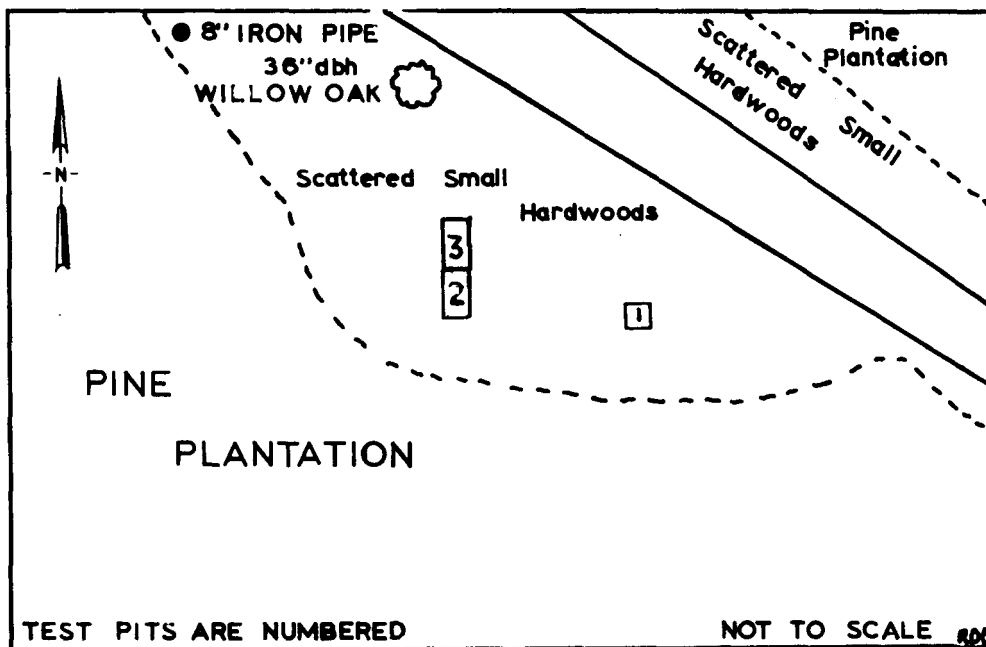


FIGURE 16. Sketch map of 38BR252.

tration of artifacts. When the house was located it was checked against the aerial photo and they matched. Two test pits (2 x 2 meters) were dug (Fig. 17) to a depth of 10 to 15 cm. depending on the depth of the top level of brown sandy loam; the second level was course yellow sand (Dothan and Norfolk soils group) and had no artifacts. The frequency of artifacts from the test pit was very low when compared with the road collection. Although the artifacts (Table 6) indicate an age older than the plat dates, the terminus post quem and ante quem are very close. The area of the site is approximately 5,000 sq. meters, (100 meters north-south and 50 meters east-west).

The date range of this site makes it too young to be considered for nomination to the National Register.

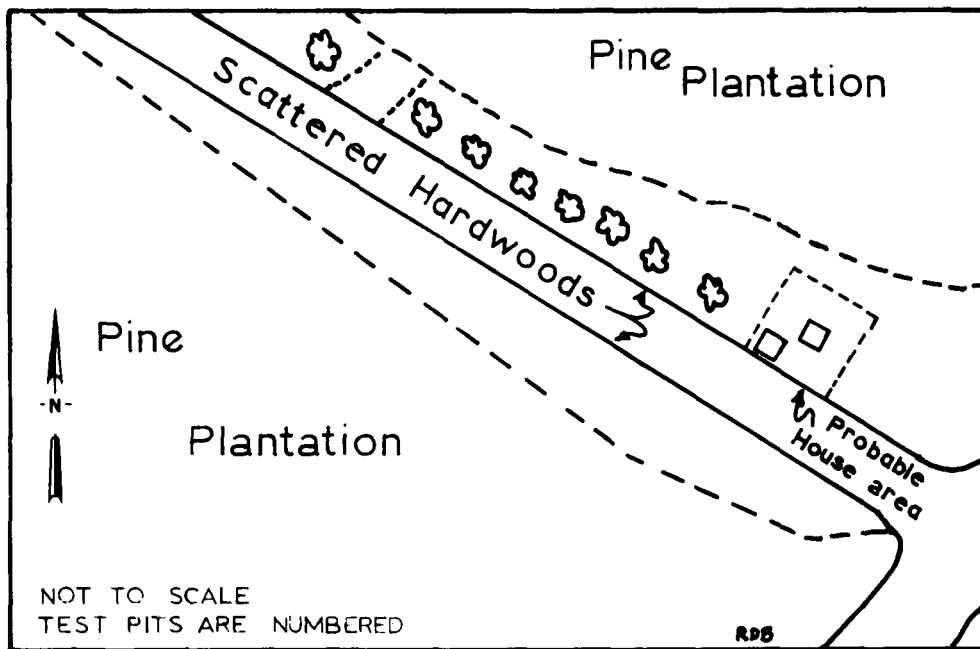


FIGURE 17. Sketch map of 38BR254.

Table 6

38BR254: Artifact Summary

<u>ARTIFACT CLASS</u>	<u>FREQUENCY</u>	<u>WEIGHT*</u>
KITCHEN		
Ironstone/whiteware	15	20.8
Alkaline glaze	3	12.0
Albany slip	3	15.6
Brown slip	10	55.5
White slip	1	3.1
Opaque glass	2	2.9
Manganese glass	78	166.7
Brown glass	2	1.9
Blue glass	2	0.6
Green glass	6	7.9
Aqua tint glass	51	124.8
Clear glass	87	80.3
Cola bottle glass	19	65.1
Opal glass	1	3.0
Milk glass	9	30.6
ARCHITECTURE		
Window glass	2	-
Mirror glass	2	-
Cut nail	2	16.2
Wire nail	2	14.8
Brickbat	30	952.2
Plasterboard	1	0.3
Wood	1	1.5
ARMS		
Shot gun casing	3	8.6
Bullet	1	8.9
ACTIVITIES		
Spark plug	1	13.6
Misc. hardware	1	179.1
MISC.		
Unident. metal object	1	13.6

* Weights in grams.

38BR256. This historic site is located on a ridge knoll and slope between two unnamed tributaries of Four Mile Creek, on the outer north-western edge of the proposed construction site of the I.S.F.S.F. at Universal Transverse Mercator (U.T.M.) coordinates 3680320 meters North and 440820 meters East in Zone 17 (Fig. 10). No record of this site is on file at the Institute of Archeology and Anthropology site files. It was first discovered during the initial road inspection of the I.S.F.S.F.

Apparently the site was partially or totally destroyed during the construction of road C-5. The artifacts (Table 7) are continually washing out of the road and/or being washed down the slope; however, no evidence of a house could be located. Structures are located on the Simmons plat of 1935. The artifact types, particularly the pearlware indicate that this site may have been the earliest in the project area, and structures are located on the aerial photo of 1951, giving this site a definite terminus ante quem of 1951-52, while the artifacts roughly give this site a terminus post quem of between 1780 and 1830 (Noel Hume 1970). The area of the site is approximately 3,000 sq. meters (100 meters northwest-southeast and 30 meters northeast-southwest).

No test units were dug at this site, as it appeared to have been seriously disturbed.

38BR260. This historic site is located on a ridge nose overlooking Pen Branch. It is on the southern boundary of the proposed construction area of the I.S.F.S.F. at Universal Transverse Mercator (U.T.M.) coordinates 3679300 meters North and 441940 meters East in Zone 17 (Fig. 10). No record of this site is on file at the Institute of Archeology and Anthropology site files. It was first discovered during the intensive survey of the I.S.F.S.F.

Initial location of this site came during the aerial photo (see Fig. 8) inspection of the area. The area had been under suspicion earlier for a historic site because of the commensal undergrowth. Because of the undergrowth the artifacts (Table 8) were collected in an opportunistic manner. The size of the site according to the area of commensal growth is approximately 5625 sq. meters (75 meters north-south, and 75 meters east-west).

A plat of 1940 shows the location of a structure in the approximate location of the commensal growth (Fig. 18). This site was part of the "Flat Iron Tract" unfortunately its exact dates of occupation are not known. Apparently the dates on this property are not old enough to satisfy the criteria for Nomination to the National Register.

Table 7

38BR256: Artifact Summary

<u>ARTIFACT CLASS</u>	<u>FREQUENCY</u>	<u>WEIGHT*</u>
KITCHEN		
Porcelain	4	11.4
Ironstone/whiteware	44	141.4
Undecorated Pearlware	2	2.1
Alkaline glaze	1	9.7
Albany glaze	1	6.1
Brown slip	2	76.7
Opaque glass	6	19.9
Manganese glass	9	39.9
Amber glass	1	2.1
Brown glass	2	4.6
Blue glass	1	0.3
Green glass	3	3.3
Aqua tint glass	30	83.4
Clear glass	8	81.8
Milk glass	1	3.5
ARCHITECTURE		
Window glass	3	5.0
Cut nail	7	31.5
Wire nail	1	6.0
Brickbat	3	719.5
ACTIVITIES		
Farm tool	1	356.4
MISC.		
Oyster shell	1	20.5
Wire	1	11.7
Tin	1	2.3

* Weights in grams.

Table 8

38BR260 Artifact Summary

<u>ARTIFACT CLASS</u>	<u>FREQUENCY</u>	<u>WEIGHT*</u>
KITCHEN		
Ironstone/whiteware	5	44.4
Manganese glass	1	1.3
Brown glass	8	53.4
Clear glass	2	6.9
Whole bottles	3	307.6
Milk glass	2	5.3
Tin fruit jar lid	1	43.5
ARCHITECTURE		
Brickbats	3	2094.2

* Weight in grams.

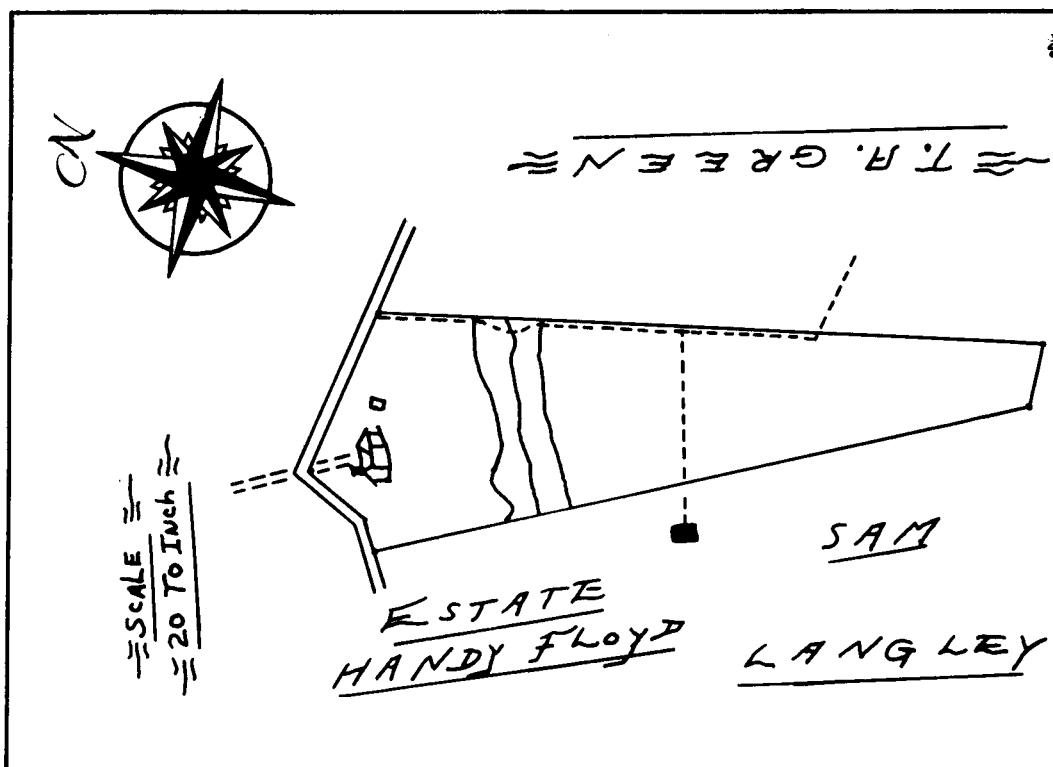


FIGURE 18. 1940 Plat map of 38BR260, the 'Flat Iron Place'.

SUMMARY

The data from the eight sites tend to indicate that the Aiken Plateau, at least within the I.S.F.S.F. survey area, did not support a dense human population through the entire occupation span of the area. The prehistoric sites are representative of a segment of a larger, seasonally oriented land use pattern which appears to have been focused on the exploitation of specific resources within the uplands. During historic times (post 1700 A.D.) the land use pattern in the uplands appears to have been limited to small farms.

The earliest recognized occupation of the study area was during the Late Archaic period, sometime between 3000 and 1000 B.C., as indicated by the Savannah River point at 38BR258. Evidence from this site suggests that it was used for a limited time for the purpose of obtaining and processing food resources from the high uplands. The following occupation in the area occurred during the first half of the Woodland period as indicated by the diagnostic cordmarked and linear check stamped ceramics at 38BR253. This site, located near a small stream on the eastern edge of the study area, contained evidence for an intensive, but short lived, use. The diversity of artifacts and the size of the scatter suggests that the site was a small base camp. The very small lithic scatter at 38BR257 did not offer a large quantity of artifactual data, but it did support the conclusion that only minimal activity took place at the location.

When taken together these data tend to support the conclusions drawn from previous work on the S.R.P. which states that the uplands were not, at any time in prehistory, a major habitation zone, but rather were used for specific resource procurement. The data from 38BR253 and 38BR258 have been shown to conform to this model. Closer examination through excavation and complete data recovery would enable a more thorough understanding of the specific activities which transpired during the occupations. For this reason, the two sites are considered as significant archeological resources worthy of preservation. The value of these resources in all cases rests upon their potential for providing useful information for archeological research.

Although documentary evidence from the S.R.P. area indicates an historic period occupation beginning in the early 1700's (Meriwether 1940), the earliest occupation in the I.S.F.S.F. area appears to have begun at around the beginning of the 19th century. This first occupation is represented at 38BR256 by the presence of pearlware sherds. This site appears to have been continuously occupied until the early 1950's as evidenced by the range of artifact types. The integrity of the site has been partially destroyed by the construction of road C-5 and a water line. The location of this site falls outside of the proposed construction area for the I.S.F.S.F.

Other evidence for the historic occupation (38BR251, 38BR252, 38BR254, and 38BR260) in the study area post-dates the Civil War and can be attributed to small scale agricultural exploitation.

These sites contain artifactual material of similar types and temporal ranges. The combined aerial photographic, documentary and archeological information for these sites indicates that they were small and attributable to single families. Evidence in the Barnwell County records suggests that the farms were the property of Black families. For the most part these holdings did not exceed 200 acres.

As a matter of the acquisition of the S.R.P. in the early 1950's all buildings on the plant site were either removed or destroyed. This action has greatly altered the present condition of the sites, leaving behind only the remnants of the structures. All of the sites in the I.S.F.S.F. area show indications of disturbance. Only 38BR251 presently has sufficient integrity to be considered as eligible for the National Register of Historic Places. The other four historic sites are either too disturbed, too young or too insignificant to be considered eligible.

Thus, of the eight sites found in this survey, three could be considered worthy of nomination to the National Register (i.e. 38BR251, 38BR253 and 38BR258). Each of these sites has been shown to contain important information about the activities which took place during their occupation spans. The conservation of this information through preservation or mitigation must be considered during the planning and construction of the Independent Spent Fuel Storage Facility.

RECOMMENDATIONS

Based on the findings of this study several recommendations can be made regarding the preservation of archeological resources within the I.S.F.S.F. area. These recommendations are presented in order to provide the Department of Energy with information for alternate land use plans in the area.

- 1) Since no significant archeological remains occur in the central I.S.F.S.F. construction area, it is recommended that the area be cleared for archeological purposes.
- 2) To assure the preservation of any buried sites well beneath the present ground surface in the construction area, it is suggested that the Department of Energy arrange to have an archeologist monitor the excavation of the building sites for the I.S.F.S.F.
- 3) Regarding related construction on the periphery of the main construction area (e.g. roads, powerlines, waterlines), we recommend that sites 38BR251, 38BR253 and 38BR258 be avoided. If this is not possible appropriate mitigation measures will be necessary.
- 4) If related construction takes place outside the survey area delineated in Figure 9, additional archeological survey must be undertaken.
- 5) Finally, we recommend that alternate locations for the proposed I.S.F.S.F. construction site be subjected to intensive archeological survey in case the present site is not chosen for construction.

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