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## Archeological Research in the S.C. Electric and Gas Company's Proposed Ancillary Transmission Line Corridor for the City of Cayce, Lexington County, South Carolina: An Evaluation of Prehistoric Cultural Resources 38LX104 and 38LX112

Neal W. Ackerly

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**Archeological Research in the S.C. Electric and Gas Company's Proposed Ancillary Transmission Line Corridor for the City of Cayce, Lexington County, South Carolina: An Evaluation of Prehistoric Cultural Resources 38LX104 and 38LX112**

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ARCHEOLOGICAL RESEARCH IN THE S.C.  
ELECTRIC AND GAS COMPANY'S PROPOSED ANCILLARY  
TRANSMISSION LINE CORRIDOR FOR THE CITY OF CAYCE,  
LEXINGTON COUNTY, SOUTH CAROLINA: AN EVALUATION OF  
PREHISTORIC CULTURAL RESOURCES 38LX104 AND 38LX112

by

Neal W. Ackerly  
Research Manuscript Series No. 87

Prepared by the  
INSTITUTE OF ARCHEOLOGY AND ANTHROPOLOGY  
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April, 1976

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## ABSTRACT

As part of the required Environmental Impact assessment process, the Institute of Archeology and Anthropology, under contract with the South Carolina Electric and Gas Company, carried out archeological investigations in the area of a proposed transmission line corridor for the City of Cayce, South Carolina. Field research was conducted within the impact zone of that segment of the proposed corridor located on the west bank of the Congaree River south of the City of Cayce. These investigations were conducted during the period August 4, 1975, December 14-23, 1975, and January 4, 1976.

Two sites - 38LX104 and 38LX112- were found on the western side of the Congaree River within the transmission line corridor proposed by South Carolina Electric and Gas. Because the scope of the project was limited, experimental approaches in data collection were emphasized in the research design. Overall research was directed toward answering questions of a processual nature regarding prehistoric activities and activity structure at each of the sites.

One of these methods, that used at 38LX104, emphasized sampling techniques as a means to determine internal site structuring. The other method, that used at 38LX112, emphasized means to discover sites showing no surface remains. In both cases, attempts were made to collect information concerning site content.

The probability sampling design implemented at 38LX104, in conjunction with posthole excavations, resulted in the tentative definition of at least six (6) subareas within the site. 38LX104 is presumed to have been a seasonally-occupied locus of Mississippian peoples (A.D. 900-1500) with the six subareas corresponding to sequential and/or repetitive occupations.

Current theories suggest that groups occupying 38LX104 were engaged in the cultivation of fertile floodplain soils and/or the procurement of seasonally-available riverine resources.

At 38LX112 a single backhoe trench located in the bluff area was excavated five meters inland from the edge of the bluff and resulted in the discovery of a buried stratified site with evidence of at least two occupations. These occupations are thought to date to the first millenium BC and the first millenium AD, respectively. Areal excavations at 38LX112 were not possible, however, due to the structural and technical requirements necessary for the erection of the transmission line poles.

A preliminary evaluation of the experimental methods implemented during this research program suggest that these approaches are viable for their respective purposes.

38LX104 and 38LX112 are estimated to be significant in terms of the potential information they may contain. Furthermore a careful examination of those construction activities associated with the transmission line proposed by South Carolina Electric and Gas indicates that adverse impacts on these two archeological sites are unavoidable. The degree of impact is estimated to be minimal, however, and further investigation is not recommended at this time. If other construction work is planned in these two areas at a future date, a reevaluation of the two sites will be necessary.



## INTRODUCTION

On August 4, 1975, representatives of the Institute of Archeology and Anthropology (IAA) visited the proposed location of an ancillary (feeder) transmission line corridor to be constructed for the City of Cayce, South Carolina, by the South Carolina Electric and Gas Company (SCE&G). The transmission line corridor extends south of the City of Cayce along the western bank of the Congaree River. The corridor turns eastward near the City of Cayce sewage treatment plant, crosses the Congaree River, and continues eastward to the City of Columbia, South Carolina. That segment of the proposed corridor situated along the west bank of the Congaree River is within the property boundaries of a National Register area thought to be the location of the Congaree Fort (1718-1722). In accordance with Federal regulations regarding construction in a National Register area, planning officials of South Carolina Electric and Gas and the City of Cayce contacted the Institute of Archeology and Anthropology for consultation regarding possible adverse effects of the proposed corridor on archeological resources. An initial examination of the corridor was arranged in August, 1975. Mrs. Nancy Fox, communications coordinator for the Central Midlands Regional Planning Council, and Mr. Leon Moore of the South Carolina Electric and Gas Company accompanied the Institute of Archeology and Anthropology staff members on this preliminary examination.

During the August visit, two possible site areas were noted on the western side of the Congaree River. The first site area was indicated by surface remains such as chipped stone and ceramics. This site - designated 38LX104 - was located in the right-of-way of the proposed corridor. The other possible site area, presumed to be buried under recent alluvium, was located on a high bluff overlooking the Congaree River. Anchor poles supporting

the power lines spanning the river were to be placed in this bluff area. That segment of the proposed powerline corridor on the eastern side of the Congaree River was also visited at this time. A badly disturbed site - 38RD101 - was discovered at that time, but was not considered for further investigation due to extreme damage caused by erosion and vehicle paths. No other sites were observed during the August visit on the eastern side of the Congaree River.

Based on this brief field visit, the Institute recommended to the Central Midlands Regional Planning Council that an intensive archeological examination be performed for the purpose of assessing project-specific impacts to known and probable archeological resources within the proposed transmission line corridor. Such a study was only to include that area on the western side of the Congaree River - specifically, in the vicinity of 38LX104 and the bluff area on the west bank suspected to contain archeological remains (38LX112). The Institute of Archeology and Anthropology was then contracted by the South Carolina Electric and Gas Company to perform an evaluation of these two site areas.

In accordance with the terms of the contract, the author and a crew of two initiated field studies on December 14, 1975. The project was terminated on December 23, 1975. The bluff area, found to contain an archeological site subsequently designated 38LX112, was re-visited on January 4, 1976. At this time, Dr. Donald Culquohoun of the Department of Geology at the University of South Carolina advised the author of the geological significance of those deposits comprising the bluff area. Pollen and soil samples were then removed from the wall of the trench by which the site was discovered and the trench backfilled. Analysis and report preparation occurred during the month of January, 1976.

This report provides (1) an overview of the known prehistory and early history of the region in which the study area is situated; (2) a summary of the methods and results of the research design implemented at each of the sites; (3) an indication of those data requirements not met during this research program and suggestions for future research in the region; (4) an assessment of the significance of the sites examined during this project; and (5) recommendations regarding South Carolina Electric and Gas construction of the proposed transmission line corridor for the City of Cayce, South Carolina.

#### ACKNOWLEDGEMENTS

I would like to thank the staff of the Institute of Archeology and Anthropology, particularly Dr. Albert C. Goodyear, for many helpful comments and criticisms concerning this paper. Dr. Donald Culquohoun of the Department of Geology at the University of South Carolina is also acknowledged for his tutoring in fluvial processes and other aspects of geology.

## A BRIEF SUMMARY OF THE PREHISTORY AND HISTORY OF THE CONGAREE RIVER VALLEY

The prehistoric and early historic occupational history of the Congaree River Valley and its immediate environs is not well known. However, a rough outline of occupational episodes is beginning to be understood through a series of archeological contract projects recently performed within the Congaree Valley floodplain. The present powerline project, although limited in scope, is most certainly adding information to the total fund of archeological knowledge.

### Paleo-Indian Period

The Paleo-Indian period refers to that time between about 10,000 and 12,000 years ago when the earliest known human populations inhabited South Carolina and most other parts of North America. The available evidence for the presence of Paleo-Indian occupation of South Carolina has been effectively summarized by James Michie (n.d.). While very little is known about the cultural activities of Paleo-Indian peoples in South Carolina, their highly distinctive fluted points have been found comparatively frequently within and near the Congaree River Valley region. In the Southwestern United States, Paleo-Indian subsistence strategies were oriented toward a reliance on Pleistocene fauna. In the Southeastern United States, Paleo-Indian projectile points often tend to concentrate within major river valleys (Williams and Stoltman 1965). A similar pattern has been documented for South Carolina by Michie. It is Michie's hypothesis that Paleo-Indians were occupying the major drainages in order to more effectively utilize Pleistocene fauna, at least in part, for their subsistence base (n.d.: 66-67). As Michie has observed, the greatest number of fluted points found to date have come from the

Some sites in the Congaree Valley floodplain which have produced Paleo-Indian tools include 38LX50 (perhaps the largest and most heavily occupied), 38LX19, 38LX1, and 38LX2, (Fig. 1). The last site, 38LX2, the Taylor Site, was intensively excavated by Michie and other members of the Archeological Society of South Carolina from 1970-1972. While fluted points have been found at the Taylor Site, excavations reveal areas of tool concentrations related to special activities which date somewhat later in time (ca. 8,000-6,000 B.C.). Although the Taylor Site was not located near the present day channel of the Congaree River, it was stratified and buried under a small amount of fluvial sediments deposited during flooding of the Congaree River.

The Taylor Site, and the excavations there, are significant for our understanding of Early Man in the Congaree Valley because (1) it is the only well excavated site in the entire valley; (2) it exhibited well defined spatial clusters of artifacts and features, such as hearths, indicating that intact activity floors can be recovered in sites within the valley floodplain; and (3) even though the site had been plowed (as most sites are on the floodplain), there was enough undisturbed sediment left to permit stratigraphic analysis.

#### Early Archaic

Early Archaic refers to a period generally extending from 8,000 to 6,000 B.C. This period seems to represent a social and technological adaptive adjustment on the part of aboriginal populations to the changing environment of the Holocene temperate forests. It was about 8,000 B.C. that a strong environmental change took place throughout the Southeastern United States and floral and faunal communities began to assume their

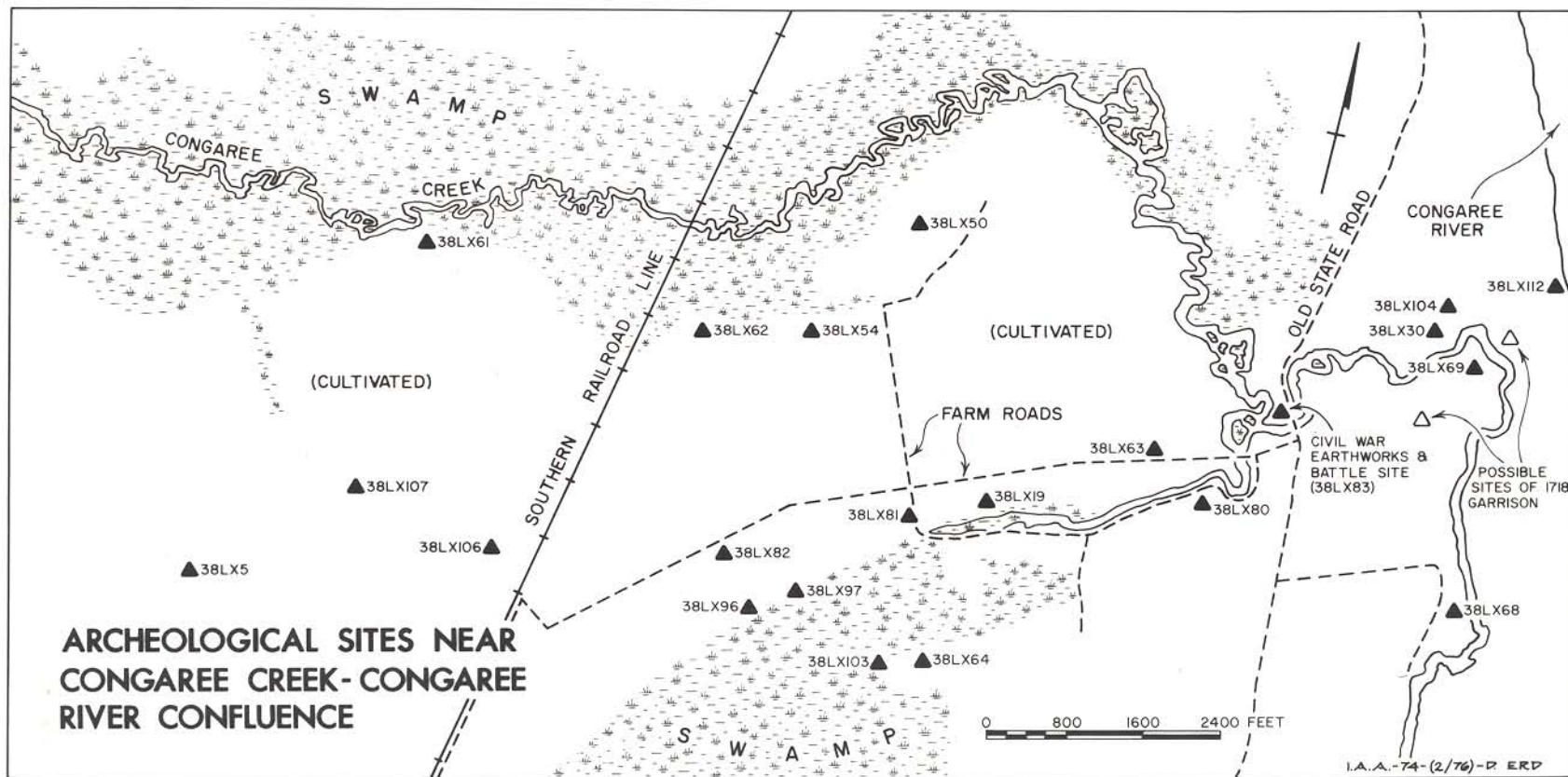


FIGURE 1

modern form (Whitehead 1973). Concomitant with this climatic amelioration, there seems to be a population increase and increasing technological and regional diversification. J. B. Griffin (1967) and Richard Ford (1974) have discussed in detail this correlation between the establishment of essentially modern vegetation and regional variability within prehistoric cultural systems.

Cultural groups of this period, like those of the Paleo-Indian period, are recognized primarily by their distinctive stone tools. The age and cultural associations of these tools have been well documented stratigraphically elsewhere in the Southeast (Coe 1965: Dejarnette, Kurjack and Cambron 1962; Broyles 1971). In the Congaree River Valley, hundreds of stone tools have been recovered by professional archeological surveys, as well as collectors, which are attributable to the Early Archaic occupation of the valley. The Dalton culture (Morse 1973; Goodyear 1974) is considered one of the first examples of the early Holocene environmental adaptations in the Southeast. The Dalton projectile point is also commonly found in South Carolina (Michie 1973), with numerous specimens recovered from floodplain sites in the Congaree Valley. The aforementioned Taylor Site produced several Dalton points and associated tools in regular spatial clusters (Michie n.d.). The Manning Site (38LX50) (Fig. 1) has produced the greatest number of Dalton points and other Early Archaic point forms in the Upper Congaree Valley and may represent one form of a base camp or habitation area for Early Archaic and later people.

Like the preceding Paleo-Indian Period, aboriginal groups of the Early Archaic Period seem to have focused their activities in the major drainage systems of the state. However, beginning in the Holocene there is an obvious shift in population concentration into the mountainous

drainages of the Piedmont (Michie n.d.). While precise reconstructions of the early Holocene environment have not been made, the exploitation of both coastal and upland habitats by Early Archaic groups suggests that they were in search of temperate flora and fauna which was beginning to characterize the Piedmont around 8,000 B.C. (Whitehead 1973).

#### Middle Archaic Period

From about 5,000 to 3,000 B.C. aboriginal groups throughout the Eastern United States including South Carolina underwent slow and seemingly undramatic changes in their lifeways. Following the cessation of the Early Archaic tradition typified by side-notch-lanceolate, bifacially-worked stone tools, a series of changing stone tool styles appear which can generally be described as "stemmed". Such stemmed projectile points or knives (for example Kirk, Guilford, and Morrow Mountain) are readily found on nearly every prehistoric site in the Congaree Valley Floodplain. Many of these sites can also be observed to have dense quantities of firecracked rock (the result of the use of river stones for stone boiling and hearth rocks). Like most other cultural groups in South Carolina, little else is known about the people who used these distinctive tools. Judging from the extensive geographic distribution of sites bearing these stemmed tools and firecracked rock, there is the suggestion of increased population and/or the new or different use of special environments. The Middle Archaic Period, the Late Archaic Period and the Early Woodland, to be discussed next, all seem to share the same environmental distribution.

#### Late Archaic-Early Woodland Period

Between 3,000 and 1,000 B.C. the traditional Archaic lifeway began to undergo some transformations, the causes of which are not well known.



In the coastal areas of Florida, Georgia and South Carolina this is manifested by the occurrence of large refuse middens often of fresh water and salt water shellfish, and--starting about 2,500 B.C.--the development of pottery (Stoltman 1972). There appears to be an intense focusing, perhaps only seasonally, on riparian environments with high biotic biomass and diversity--particularly fresh water and salt water shell fish. The western limits of these pottery-using hunters and gatherers is the Fall Line where the coastal plain meets the foothills of the Piedmont.

The pottery manufactured at this time quite often had vegetable fiber as a tempering agent. Fiber-tempered pottery, which is the technological hallmark for this time period, is not often found in the river valleys in the Fall Line area, except in the Savannah River area (see Anderson m.s.). Other early ceramics such as the sand-tempered Thom's Creek wares (Phelps 1968) are found commonly in the Congaree River Valley. The earliest appearance of Thom's Creek ceramics is not well documented, but recent studies indicated that it may date as early as fiber-tempered ware, approximately 2,000 B.C. (Trinkley, personal communication). Such sites as 38LX50 and 38LX1 (the latter is the Thom's Creek Site itself) have produced dense quantities of Thom's Creek decorated ware. 38LX1, which was tested by James Michie (1969), is distributed along a small flowing creek on the interior edge of the Congaree River floodplain (Fig. 2). Another site, 38LX45, is highly comparable to the Thom's Creek Site in that it also is located on the immediate margin of the river floodplain between the uplands and the floodplain (Fig. 1) and contains an abundance of Early Woodland ceramics. These two sites may represent Late Archaic-Early Woodland settlement-subsistence adaptations to the Congaree River Valley locality which was probably receiving increased moisture due to greater rainfall and a rise in sea level.

Sites of comparable age on the Atlantic Coast are now underwater (Michie 1973). Other ceramics that were made during the Early Woodland Period, but later than fiber-tempered and Thom's Creek ceramics, are primarily decorated by linear and bold check stamping and cord marking. These design motifs seem to have predominated from about 500 B.C. to a few centuries after Christ. Check stamping and cord markings continued, however, as a design techniques during the late prehistoric period. At present, we can say little beyond gross stylistic and temporal variations regarding the ceramics of the Late Archaic and Early Woodland Period.

#### Late Woodland-Mississippian Period

From about A.D. 600 through A.D. 1500 there appears to have been an increasing reliance on cultivated foods--coupled with the development of the bow and arrow--throughout the eastern United States. This same pattern of cultural development is manifest in the major river valleys of South Carolina, particularly in the Congaree River Valley. In the late prehistoric period (the Mississippian pattern), there is a strong trend in cultural evolution toward complex agriculturally-based societies possessing well developed socio-political systems. This cultural manifestation, seems to be related to a more-regional complex of the Mississippian pattern known as South Appalachian Mississippian (Ferguson 1971, 1975), the evidence for which is found in several river valleys of South Carolina.

There are two large Mississippian Period sites near the proposed powerline corridor, 38LX68 and 38LX30 (Fig. 1). There is the strong suggestion that 38LX104 which is within the impact zone is also Mississippian in age. During the August, 1975 visit to 38LX104, a small triangular arrow point was recovered which is indicative of the late prehistoric period. In

the subsurface testing of this site, to be described in the next section, several sherds of fine paste and eroded burnished surfaces which are also suggestive of the late prehistoric period were recovered. The fact that 38LX68, 38LX30 and 38LX104 are located together near the confluence of the Congaree River and Congaree Creek is probably no accident. Two other late prehistoric period sites, 38RD101 and 38RD187, are located immediately across the Congaree River. This strongly suggests a constellation of Mississippian settlements which were exploiting fertile alluvial soils for agriculture on both sides of the Congaree River. Such a settlement strategy is in perfect agreement with what is expected for the subsistence strategy (which probably focused to a great extent on corn agriculture) of the late prehistoric groups of the valley.

#### Early Historic

In the early 1700's the British were engaged in fur trade with the Cherokee Nation. A small fort was constructed in 1718 by the British in the vicinity of Congaree Creek and the Congaree River, as a depot for fur trade with the Cherokee and as a deterrent to possible raids by the Creek. Historic research in the Congaree Valley locality largely revolved around the search for the remains of Fort Congaree (Anderson, Michie and Trinkley 1975; Trinkley 1974). Most maps indicate the fort was constructed in the vicinity of the confluence of the Congaree Creek and the Congaree River. Trinkley (1974: Appendix 1), in his summary of exploration into the probable location of the Congaree Fort, illustrates a map composed by DeBrahm and published in 1757. This map, if accurate, would indicate that the proposed powerline would be about 600 feet north of the fort. Road grader cuts made in 1974 and test excavations by Michael Trinkley in that same year revealed no structural evidence of the fort. Historic artifacts that would date to the first quarter of the eighteenth century were not found.

By the mid-1700's both sides of the Congaree River, as far downstream as Raiford's Creek, had been surveyed and purchased by colonists. Meriwether (1940) provides a reconstruction of owners and their associated land plats for the year of 1759. In the area of 38LX130, Trinkley (1974) reported that James Michie recovered several historic ceramic fragments which probably related to houses located on the edge of Congaree Creek. These ceramics produced a mean date of 1778.

Beyond limited subsurface test pits and surface collections, little intensive research regarding early historic occupation of the Congaree Valley has been done.

This region has an interesting and important history--one that would lend itself to studies of concern to historians, anthropologists, archeologists and geographers alike. The valley was one of the first areas settled near Columbia. The Congaree River, which connected this region with Charleston, provided an excellent means of communication and transportation. The Fall Line provided a natural fording area of the Congaree River and the fertile alluvial soils of the Congaree Valley floodplain allowed a viable means of subsistence by agriculture. These factors greatly contributed to population increases in the Valley and led to the further commercial development of the Columbia area.

#### Summary

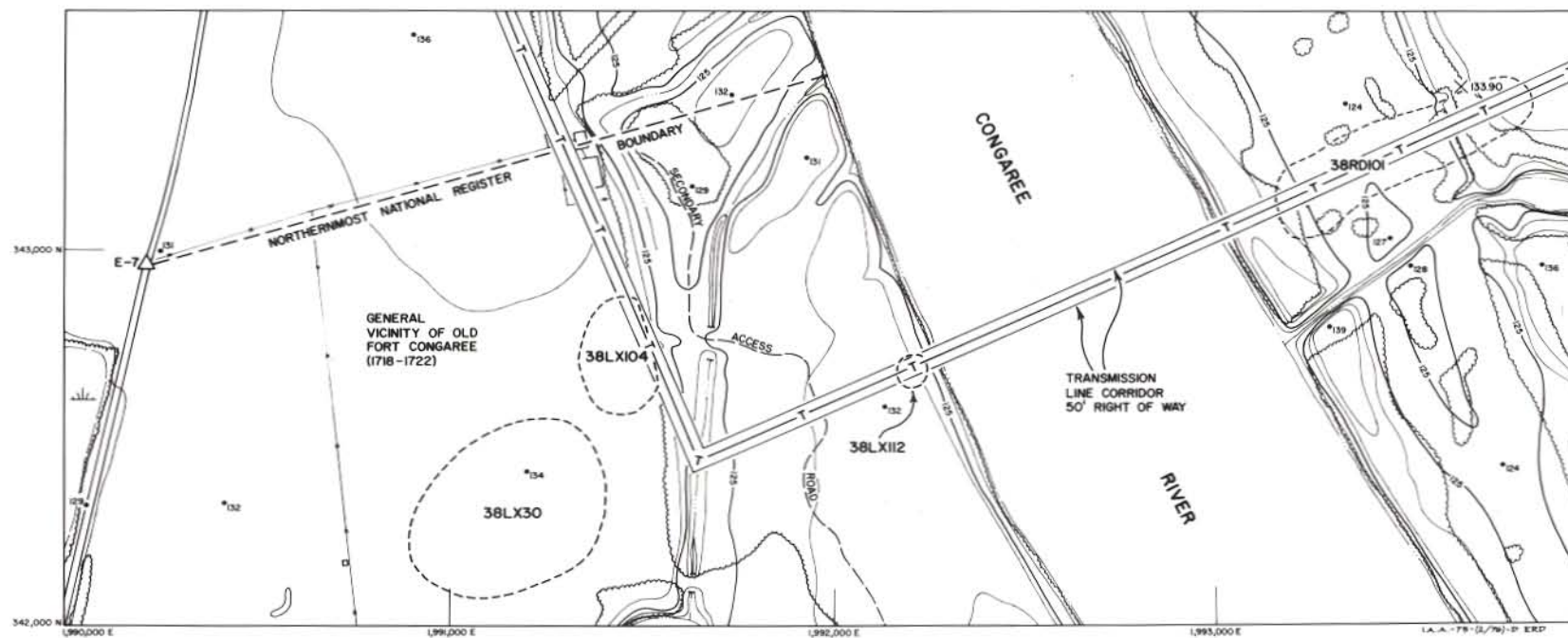
This brief discussion of the major cultural sequences observable in the Congaree Valley provides a context within which the present study may be placed. Very little is known about aboriginal and colonial life in this region owing to a lack of intensive regional studies. Small studies such as this one, however, have a valuable role in the task of unraveling the history of this region, an area rapidly being destroyed by urban expansion.

## ARCHEOLOGICAL INVESTIGATIONS AT 38LX104

This site is situated on the eastern edge of a prominent terrace overlooking uncultivated and forested Congaree River bottomlands immediately to the east (Fig. 2). The terrace on which 38LX104 is located has been subject to plowing and has sustained varying degrees of erosional modification. The site consists of an extensive scatter of ceramics and chipped stone materials distributed in at least six spatially-distinct sub-areas within the site. Artifacts are present in varying densities in each of the sub-areas and, for the most part, are restricted to the plowzone, or upper 15-20 cm. (6-8 in.) of the site. Intersite relationships (see pg. 25-27) in this portion of the Upper Congaree River Valley suggest that 38LX104 represents a late prehistoric occupation possibly associated with 38RD87, 38RD101, 38LX30, and 38LX68.

The overall goals of the research strategy implemented at 38LX104 included:

- (1) the recovery of data regarding site content - i.e. a broad range of artifacts representative of the entire artifact assemblage present at the site, as well as features indicative of storage, processing, and dwelling activities occurring at the site.
- (2) to establish the boundaries of the cultural remains (i.e. artifacts) and, by doing so, to establish the approximate size and spatial configuration of the site.
- (3) on the basis of site content, size, and configuration, to assess the significance of the site for purposes of general archeological inquiry. It was, of course, necessary to meet these goals within the time framework of five days of fieldwork as originally proposed.



ARCHEOLOGICAL SITES NEAR  
THE CAYCE POWER LINE CORRIDOR

FIGURE 2

Due to apparent low density of cultural remains and low surface visibility caused by heavy ground cover, a subsurface sampling design was formulated emphasizing extensive - as opposed to intensive - surface and subsurface testing. The sampling method thus selected is termed the systematic, stratified, unaligned random sampling approach (Haggett 1966; Redman and Watson 1970; and Redman 1973). The advantages of using this particular approach include (a) that the points are randomly selected and that data thus retrieved may be subjected to statistical manipulation; (b) that the distribution of the sampling points is approximately even over the entire site and that portions of the site are not subject to differential, or spatially uneven sampling; and (c) that the method considerably decreases the amount of time necessary to generate a statistically valid sample of data.

#### Methods

In accordance with the goals of the research program at 38LX104, and in the context of the sampling design described above, a data recovery program was developed incorporating the following procedures:

- (1) For sampling purposes the site was assumed to cover about 17,500 square feet with subsurface remains extending ca. 350 ft. north-south and ca. 500 ft. east-west along the terrace edge on which the site was situated.
- (2) To insure that sample points within this hypothetical 17,500 square feet area were evenly distributed (i.e. did not accidentally fall in clusters), the area was further subdivided into 50 square feet sampling blocks with a total of 70 sampling blocks delineated within the hypothetical site area.

- (3) Within each of the 50 square feet sample blocks a point was chosen from a table of random numbers. Values for the x,y point within each sample block were randomly selected and correspond to an x,y point in a Cartesian co-ordinate system superimposed over the 17,500 square feet area of the site.
- (4) A datum was established near the north boundary of the area to be sampled with angles and distances plotted to each point from the datum. Once in the field, a permanent transit station was established near the north boundary of the area to be sampled and sample points were then shot in with the transit.

Following the placement of sample points over the area of 381X104, posthole samples were taken at each point. For each posthole the plowzone was removed and screened separately from the remainder of the column which was removed and screened in 12 in. vertical units. This resulted in the removal of approximately .59 cubic feet of fill from each sample location. All of the fill thus removed was screened through 1/4 in. mesh hardware cloth to insure a standard recovery of archeological materials. This sampling approach facilitated relative estimates as to the density of artifacts by volume and allowed for more precise measurements as to the differential (i.e. uneven) distribution of artifacts within the site as a whole. Due to time restrictions only 61 of the 70 sampling blocks could be examined. This resulted in samples being removed from a 13,250 square feet area of the site. The results of the limited subsurface testing program are discussed in the following section.



## Results and Summary

The sampling program outlined above resulted in a 0.09% sample of the total hypothetical area of 38LX104. This percentage was calculated by converting the area of the core samples (28.27 square inches) into square feet (0.1963 square feet), multiplying the product by the number of posthole samples (61) to obtain the total square feet sampled (12), and dividing this product by the total area of the site (13,250 square feet).

Preliminary results concerning the differential distribution of the artifacts were obtained by plotting the presence-absence of artifacts from each of the postholes samples (Figure 3). This plot indicates that 38LX104 may consist of as many as six (6) spatially-distinct sub-areas, or locations of prehistoric activities. The approximate boundaries of these loci are delineated by the dashed line symbol appearing in Figure 3. Each locus is also assigned a number between 1 and 6.

The artifact assemblage appears to be restricted to fragmentary ceramics (potsherds) and chipped stone debitage (waste flakes produced during the stone working process). The limited number of these remains, in addition to their highly eroded condition, have precluded any detailed study. The relative density of artifacts is about 0-4 per sample. Artifact density over the entire area sampled was calculated on the basis of the combined values of sherds and chipped stone debitage. Historic European materials were not included in this calculation. The average density for the site is about 0.95 artifacts per cubic foot. The average densities of artifacts varied considerably between the six sub-areas of the site, and on the whole, were much higher than the average site density. Density estimates for each of the six sub-areas were calculated by multiplying the number of postholes used to define each

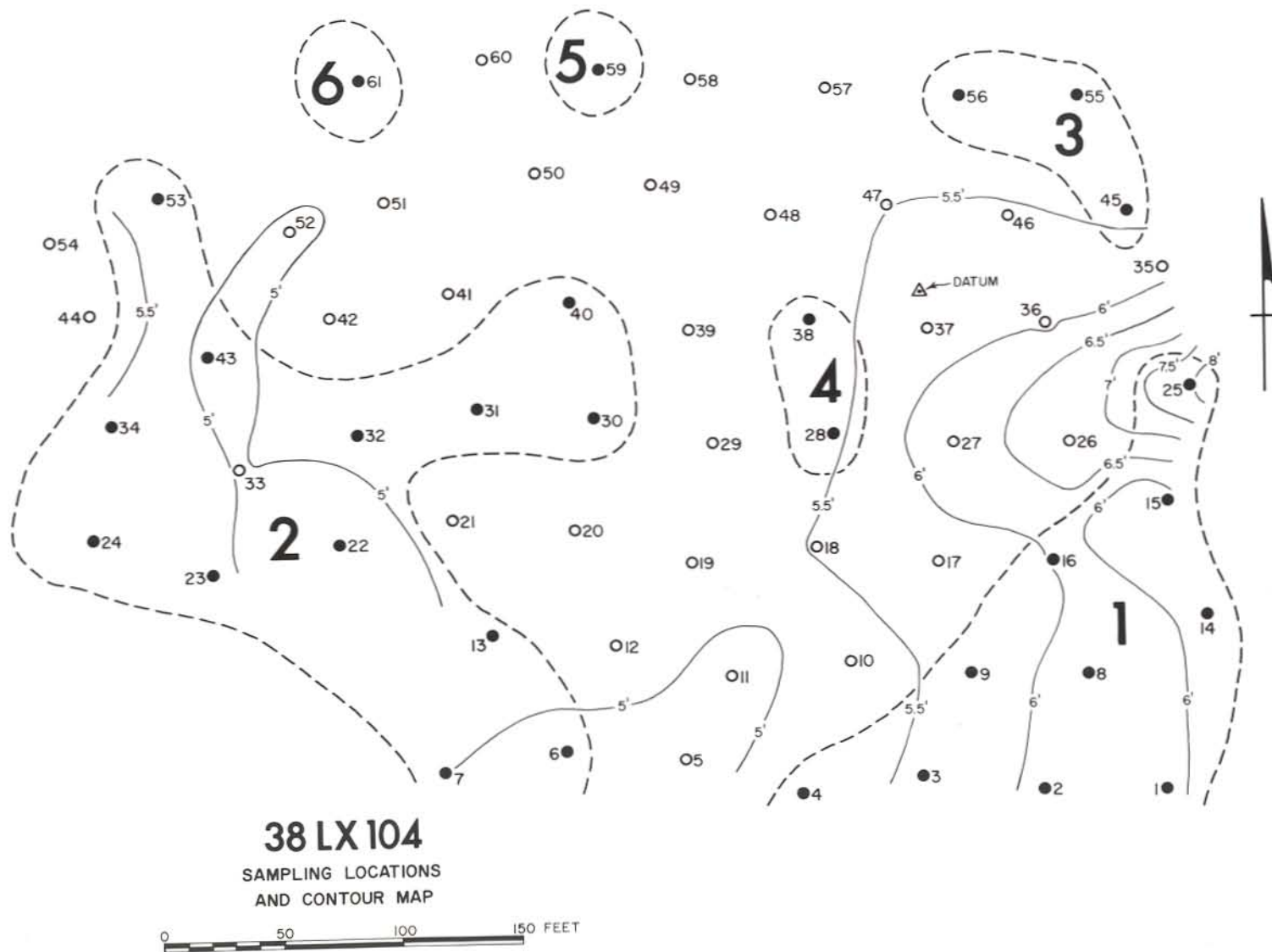


FIGURE 3

sub-area by the volume of fill removed from each posthole (0.59 cubic feet). This derived value was then divided into the total number of sherds and chipped stone material recovered from all of the postholes used in defining a sub-area. The number of postholes used to define each sub-area, along with the number of artifacts recovered and derived density estimates are presented in Table 1.

TABLE 1  
SUB-AREA CONTENTS AND ESTIMATED DENSITIES  
38LX104

SUB-AREA NUMBER	NO. OF POSTHOLES	NO. OF SHERDS	NO. OF LITHICS	NO. OF HISTORIC* (BRICK, NAILS, ETC.)	TOTAL ARTIFACTS	ESTIMATED DENSITY
1	10	4	7	1	12	2/cubic ft.
2	12	11	3	0	14	2/cubic ft.
3	3	2	1	1	5	1-2/cubic ft.
4	2	1	0	1	2	1-2/cubic ft.
5	1	0	2	0	2	3-4/cubic ft.
6	1	2	1	0	3	5/cubic ft.

\*Historic artifacts were not used in computing densities of each sub-area.

It may be seen that artifact density varies between less than 1 per cubic foot (sub-area 4) and 5 per cubic foot (sub-area 6). Present trends in the spatial distribution of artifacts, based on the density of artifacts in each of the six sub-areas of 38LX104, indicate:

- (1) Areas of increasing artifact density extending from a somewhat low density area on the southeast margin of the site (sub-area 1) to areas of higher artifact density on the northwest margin of the site (sub-areas 5 and 6).
- (2) Low density areas showing a more continuous artifact distribution extending in a south-southwesterly direction toward Congaree Creek.

As previously mentioned, data recovered from the site tends to indicate that most of the artifacts occur in the plowzone. There is some evidence to suggest that the vertical distribution of artifacts may extend into the subsoil in restricted portions of the site. For example, a large quartz core was recovered from approximately 2.1 feet below the present ground surface in sub-area 2 of the site. Furthermore, this is in close proximity to 38LX30 - a large South Appalachian Mississippian site - where subsoil deposits are known to occur (Anderson, Trinkley, and Michie 1975). The reader should note that, given the small sample fraction recovered from the site, such density estimates are probably only valid for the recognition of gross patterns. They are probably not valid for estimating the parameters of site occupation.

To briefly summarize the results obtained during investigations at 38LX104, the sampling program resulted in a 0.09% sample of the hypothetical area of the site. On the basis of this sample the following characteristics of the prehistoric occupations at the site may be presented:

- (A) The total area encompassed by the sub-areas of the site is extensive and the artifact density across the site seems to be low.

- (B) The artifact assemblage is restricted to highly-fragmented and eroded ceramics, and chipped stone debitage (waste flakes) resulting from stone working activities.
- (C) The site may be composed of six or more sub-areas with the artifact density ranging between 1 and 5 artifacts per cubic foot between sub-areas.
- (D) It appears that ceramics and chipped stone debitage are found in four of the six sub-areas of the site. Sub-areas 4 and 5 lack chipped stone debitage and ceramics, respectively.
- (E) Evidence suggests that subsoil features such as hearths, storage pits, and so forth may occur in the southern portion of the site.

It should be stressed that the size of the sample removed from the site (i.e. less than a 1/10 of 1% sample of the total area) is very small and probably would not meet an acceptable level of statistical confidence. This factor, coupled with the difficulty of estimating parameters of site occupation, seriously reduces the ability to generalize as to the nature of the occupation at 38LX104.

#### Research Potential of 38LX104

Two perspectives have been maintained in estimating the research potential of 38LX104. The first approach is that of considering the intra-site density and distribution of artifacts as purely physical phenomena indicative of the intensity and duration of past human occupation(s) of the terrace at 38LX104. The other approach is that of an inter-site perspective regarding past human land-use patterns in the Congaree River Valley in general. The two perspectives are closely interrelated, but have been separated here for analytical purposes.

The first perspective - that of the intensity and duration of human occupation at 38LX104 - remains problematic. The primary reasons that we are unable to interpret these cultural phenomena results from:

- (a) the lack of a suitably large sample of data from the site.
- (b) the fact that information regarding all aspects of the archeological remains contained in the site - specifically, a representative sample of the total range of artifacts, features, and ecological data - could not be collected.
- (c) time restrictions that precluded the excavation of a large portion of the site and which therefore prevented the recovery of spatial relationships of the artifacts in each of the sub-areas of the site.
- (d) the fact that we do not know to what degree non-cultural processes (i.e. erosion, plowing decay, etc.) have modified the internal structure of the site.

The recovery of this information is a prerequisite if the behavioral reconstruction of the activities occurring at the site is to be valid.

As has been shown, there is no substantive basis on which to estimate the potential significance of 38LX104 without this kind of information. At best it can only be said that the artifact density at 38LX104 is low enough to indicate that (a) human occupations and their attendant range of activities were limited and/or sporadic; and/or (b) that the activities that occurred during the occupation were probably extractive in nature. These observations have led to the formulation of a series of alternative hypotheses concerning the nature of the occupation(s) at 38LX104.

(1) The low density and spatially-diffuse distribution of cultural remains at 38LX104 was the result of a seasonally-occupied locus of human groups practicing a range of as-yet-undefined activities. This inference is

based on the assumption that the amount of cultural remains deposited at a site is directly proportional to the kinds of activities conducted at the site and the length of the occupation at the site. Furthermore, it is conceivable that the six sub-areas comprising 38LX104 correspond to occupations that occurred at different times or, alternatively, that the six sub-areas correspond to the location of separate groups that occupied the site at the same time. Unfortunately, the artifact sample recovered did not allow for the relative dating of the sub-areas of the site thereby precluding the establishment of an occupational sequence at the site.

(2) If 38LX104 was (a) sequentially occupied on a seasonal basis, or (b) a contemporaneously occupied habitation site, then it is possible that the as-yet-undefined activities occurring at the site were extractive in nature. Such activities appear to have required only unspecialized multiple-purpose implements since specialized tools were not recovered from the site. Again, it should be mentioned that this assessment is tentative.

The proximal location of the site to the Congaree River bottomlands and floodplain would suggest a number of possible subsistence alternatives. These include (a) the procurement of seasonally-available riverine floral and faunal resources; (b) the cultivation of fertile floodplain sediments deposited during sporadic floods; or (c) combinations of both of the above. Of these alternatives, floodplain cultivation seems most likely due to the presumed association of 38LX104 with the South Appalachian Mississippian site of 38LX30 where agriculture is thought to have occurred.

The second perspective - that of human areal land-use patterns in the Congaree River Valley - also remains problematic. The reasons that this is the case are essentially the same as those regarding the intensity and duration of human occupation at 38LX104: the data collected thus far are insufficient for the purpose of interpretation.

Present survey data from the area surrounding the confluence of Congaree Creek with the Congaree River indicates a high density of pre-historic human occupations in this portion of the Congaree River Valley (Fig. 2). Limited sampling programs have been completed at only a few of these sites (Anderson 1974; Trinkley 1974; and Goodyear 1975). Patterns in the distribution and contents of sites recorded show: (1) the recovery of late Woodland and Mississippian ceramics and projectile points only from those sites located along floodplain terraces immediately adjacent to the Congaree River; (2) little evidence of prehistoric utilization of floodplain areas removed from the Congaree River; and (3) heavy Paleo-Indian, Archaic, and Early Woodland utilization of (a) backswamp areas situated between the floodplain/upland ecotone and (b) the uplands themselves. This spatial shift in the location of human groups during more recent periods (e.g. Mississippian) is thought to correspond to an increasing emphasis on cultivation as a primary subsistence mode. Associated with this subsistence shift is a concomittant need for fertile land suitable for cultivation. Since the location of 38LX104 is consistent with patterns expected in the Late Woodland-Mississippian occupation of the Congaree floodplain (ca. A.D. 500-1500), it is assumed that the site is one of a number of components in an integrated regional land-use system in the Congaree River Valley.

There are four possibilities regarding the place of 38LX104 as a component in such a land-use system. The site may be:

- (1) A Woodland period (ca. A.D. 500-1,000) small seasonally-occupied hamlet preceding more intensive Mississippian occupations of the Congaree River Valley.
- (2) One of a number of small dispersed hamlets occupied on a seasonal basis but associated with a larger habitation site. In this case,



the occupants of 38LX104 may have carried out limited activities during part of the year (for example, cultivation in the spring and summer) and spent the remainder of the year (fall and winter) at a larger habitation site - in this case, 38LX30.

- (3) A fringe area of a larger habitation site - again, probably 38LX30. In this case, 38LX104 would actually be contiguous with 38LX30 and would comprise the outer northern boundary of 38LX30.
- (4) An interface zone between 38LX30 and another as-yet-unrecorded prehistoric site situated to the northwest near the southern boundary of the City of Cayce sewage treatment plant. This is one alternative to consider in that trends in the horizontal distribution of artifacts at 38LX104 indicate a pattern of increasing artifact density extending toward the northwest.

On the basis of available information, it is difficult to select from among these four alternatives as to which is most probable. Present trends in the artifact density and spatial distribution at 38LX104 tend to indicate that alternative # 4 may have the greatest probability of being valid. Until more intensive research is undertaken, however, the truth of these alternatives remain to be demonstrated.

## ARCHEOLOGICAL INVESTIGATIONS AT 38LX112

The site is situated on a high bluff immediately above the Congaree River and approximately 0.3 km. (0.2 mi.) east of 38LX104 (Fig. 1). The area between the two sites consists of small drainages and swales with heavy riparian forest cover. The entire bluff area on which 38LX112 is located is overlain by approximately 1 m. (3 ft.) of recent alluvial deposition. Much of this deposition is an indirect result of the introduction of European agricultural systems into the Congaree River Valley in the early 1800's (Hall 1940; Trimble 1973). The bluff area has not been subject to the same modification processes as 38LX104 (esp. plowing), but has been affected to a greater degree by fluvial processes associated with fluctuations of the Congaree River. The site was discovered during limited trenching operations and was found to consist of two stratigraphically (i.e. vertically and depositionally) distinct occupations located between 1.6 - 2.1 m. (5-6 ft.) below the present ground surface.

The goal of research in the bluff area was to (1) determine whether or not a buried archeological site did in fact exist, and (2) if a site was present, to collect information regarding site content and paleo-environmental data. The importance of buried stratified sites has been considered more comprehensively elsewhere (Coe 1964; Broyles 1971).

The major problem in dealing with such sites is in determining their location. As early as 1949, Coe (1964: 8-9) suggested that deep stratified sites would be present in alluvial floodplains. He attributed the discovery of such sites to "good luck" and indicated that there were no known procedures for locating buried sites (Coe 1964: 9). This pattern of "good luck" with a non-systematic approach in site discovery continued until the 1960's. Recently, however, the University of Tennessee has

conducted systematic sub-surface examinations of alluvial floodplains where no archeological remains were found on the surface. The approach utilized in this research consists of backhoe trenches superimposed in a grid pattern across floodplains. In numerous instances in which this approach has been utilized, buried stratified sites extending into the Archaic Period (ca. 8,000-6,000 B.C.) have been found (Chapman, personal communication). The success that the University of Tennessee has had in locating buried stratified sites by means of limited backhoe excavations has led to an increased adoption of this approach in examining floodplain deposits over much of the Southeast, and was chosen in examining the bluff area within the South Carolina Electric and Gas Company's transmission line corridor.

This approach conformed with the overall research goals of the project: specifically, it would (a) facilitate the locating of the site if present in the bluff; (b) allow for a minimal recovery of data regarding the contents of cultural deposits if such deposits were present; (c) provide for the collection of paleo-environmental information of importance to a number of other scientific disciplines; and (d) require a minimal amount of earth removal and minimal disturbance of the structural integrity of the bluff area. This last factor was of considerable importance given the time limitations that the project operated under and the structural stability of the subsoil required in erecting the transmission line poles.

#### Methods

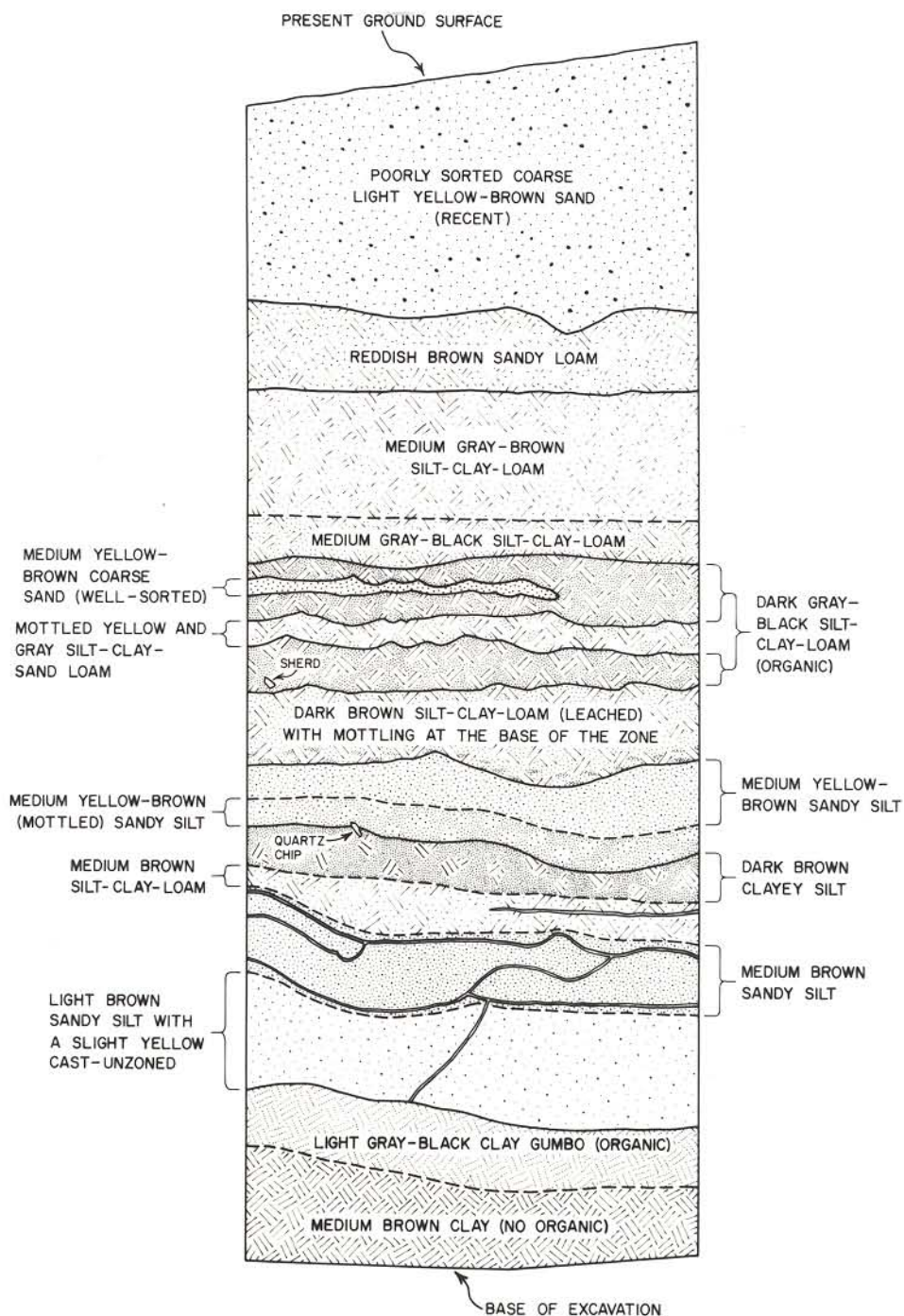
In accordance with the objectives presented above, a single backhoe trench extending inland from the edge of the bluff constituted the most feasible approach in examining subsurface deposits. The backhoe trench was placed near the center of where the main supporting transmission poles are to be located. The trench was 0.8 m. (30 in.) in width, 5.0 m. (16 ft.)

in length, and approximately 3.0 m. (9 ft.) in depth. No attempt was made to screen the fill under the assumption that a detailed examination of the profiles, or walls, of the trench would provide enough evidence to ascertain the presence or absence of cultural remains. Dr. Donald Colquhoun, an alluvial geologist on the staff of the University of South Carolina, agreed to assist the author in interpreting alluvial depositional phases in the bluff area. Dr. Colquhoun participated in field examination of the stratigraphy of the subsurface deposits and is performing a detailed clay minerology study of sediments removed during the archeological examination of the soils. Pollen samples have also been collected for further study.

#### Results and Summary

The limited excavation resulted in the location of a closed-context (i.e. undisturbed) stratified site. Since the trenching operations provided only a cross-section through the deposits in which cultural remains were found, little can be said regarding the nature of the occupation of the bluff.

Stratigraphic studies (Fig. 4) of the deposits exposed during the trenching operation established the presence of two stratigraphically-distinct (i.e. vertically and depositionally separate) occupational episodes. The earlier, or deeper, of the two is evidenced by the recovery of an unmodified quartz waste flake from about 2.1 m. (7 ft.) below the present ground surface. The flake was situated in the upper level of a dark brown silt-clay-loam deposit (Fig. 4). The later, or uppermost, occupation contained ceramic-bearing deposits situated in the lower portion of a medium gray-black silt-clay zone with a high degree of organic matter. This zone



**38 LX 112**  
**LEXINGTON COUNTY, SOUTH CAROLINA**

PROFILE DRAWING OF  
SOUTH WALL BACKHOE TRENCH I

0 10 20 30 40 50 60 cm.

CLAY LENSING

FIGURE 4

is located 1.6 m. (5 ft.) below the present ground surface. These were the only two artifact types recovered during the excavation.

The two occupations are separated vertically by slightly more than 0.3 m. (1 ft.) of a medium yellow-brown sandy silt zone (Fig. 4). The presence of this sandy silt zone between the two occupations indicated a significant temporal discontinuity, or time lag, between the occupations on the bluff. Extensive alluvial deposition having its origin in flooding phases of the Congaree River are further indicated by this stratum. The later occupation (i.e. the ceramic-bearing occupation located 1.6 m. below the present ground surface) is covered with alternating layers of alluvial deposition and highly organic gray-black silt-clay-loam deposits. These deposits are thought to represent the last stable forest floor existing prior to the eighteenth and nineteenth centuries. This buried forest humic zone is capped with coarse, poorly-sorted light yellow-brown sandy soils of recent alluvial origin that probably date to the nineteenth and twentieth centuries. All of these deposits, including the deepest zone of clay gumbo thought to represent a possible backswamp, are believed to be Holocene (Colquhoun, personal communication).

In that the backhoe trenching did not provide a statistical sampling approach, the same problems exist with respect to the interpretation of the site: there is no way to generalize as to the nature of the archeological deposits at 38LX112. This is due, again, to the fact that (a) a suitably large sample of data was not generated by the program described above; (b) information regarding all aspects of the prehistoric occupation at the bluff could not be collected; (c) time restrictions precluded the excavation of a statistically selected portion of the site; and (d) the structural requirements of erecting the transmission line poles prohibited any extensive excavations

on the bluff. Unlike the sampling program at 38LX104, some data regarding non-cultural processes operant at 38LX112 (for example, processes such as erosion and alluvial deposition) were collected. There is considerable evidence to suggest that the Congaree River has not wandered substantially from its present course during recent (i.e. Holocene) times (Colquhoun, personal communication). In addition, the presence of 38LX112 on the western side of the river and 38RD101 directly opposite on the eastern side of the river indicate that lateral movement has been minimal during the past 500 to 1,000 years. Otherwise, lateral erosion would have removed any traces of one or both of these sites.

In summary, 38LX112 consists of a closed-context (undisturbed) stratified site showing evidence of at least two occupations that are temporally separated. The occupations occur between 1.6 m. and 2.1 m. (5-8 ft.) below the present ground surface with the earlier occupation consisting of chipped stone debitage and the later occupation evidenced by ceramic-bearing deposits. Stratigraphic studies indicate that these occupational episodes are separated by a number of strata of alluvial origin corresponding to flooding phases in the depositional history of the Congaree River. The earlier occupation may or may not predate A.D. 1, while the later occupation postdates A.D. 1.

#### Research Potential of 38LX112

This site is one of the few documented closed-context stratified sites found in the Congaree River Valley or in the State of South Carolina. Preliminary examinations show that the earlier occupation may extend into the first millenium B.C. and, therefore, may contain information concerning very early prehistoric occupations. The research potential of 38LX112 is excellent given the high degree of integrity of deposits containing cultural remains and the fact that the opportunity for research in a very early context occupation does exist. This is of critical importance in that these occupations are at present poorly understood.

PROPOSED CONSTRUCTION ACTIVITIES AND POTENTIAL  
UNAVOIDABLE ADVERSE IMPACTS

It is necessary at this point to present a general discussion of the means whereby adverse impacts are determined and a more specific discussion of potential adverse impacts associated with South Carolina Electric and Gas Company's implementation of a transmission line construction project for the City of Cayce.

Impacts are defined as the effects of an action upon the archeological resources of an area. The degree of impact is defined on the basis of (a) the extent of the area containing archeological resources that will be adversely modified and (2) the immediacy of the effects of the actions. Generally, these are distinguished as direct impacts and indirect impacts.

Direct Impact - The effects an action will have on environmental (read here as archeological) resources as a direct and immediate result of construction or development. This includes the destruction of archeological sites and their environment by earth-moving, plowing, flooding, or building construction. These effects are not limited to the localities modified by the project, but also include features such as access roads, construction crew camps, etc., which are ancillary to the project. Direct impact may be considered in overviews and assessments and should be considered in preliminary field studies and all subsequent reports (SAA Mailing #7).

Indirect Impact - The effects on the environment which are not an immediate and direct result of an action, but which would probably not occur without it. Indirect effect is the extent to which a project or action exposes resources, either within or adjacent to the development, to such adverse effects as accelerated erosion, intensified agriculture, construction of private homes or commercial buildings, road-building,



increased vandalism, modification of ecological relationships and other disturbances attendant on the action. Indirect impacts may be considered in overviews and assessments and should be considered in preliminary field studies and all subsequent reports (SAA Mailing #7).

It should be remembered that these definitions concern those impacts which are project-specific - in the sense that both kinds of impacts have their origins in effects which can be directly ascribed to a particular action (in this case, the transmission line construction). Other impacts that are not directly associated with the proposed construction activities are termed potential impacts and extended impacts. These impacts will not be considered in detail at this time, but should be examined at a later time should additional construction occur within the transmission line corridor. For purposes of this assessment, both potential and extended impacts have been included in the indirect impact classification. Listed below are those project-specific actions of South Carolina Electric and Gas Company that can be subsumed under the direct and indirect impact categories.

Direct Impacts: The partial destruction of two archeological sites arising from the following proposed procedures: (a) improvements of existing roads; (b) construction of access roads into presently inaccessible areas; (c) movement of heavy equipment over archeological sites exhibiting characteristics of fragile patterning; and (d) alteration of drainage patterns across the surface of archeological sites which could culminate in increased short-term erosion and possible further disruption of archeological sites. Also included in this category is an associated influx of construction personnel.

Indirect Impacts: New or continued destruction or disruption of two archeological sites due to increased access to areas in which archeological sites are known to occur. This would probably result in increased vandalism of these archeological resources.

Both direct and indirect impacts, as outlined above, have been considered in the evaluation and estimation of the significance of 38LX104 and 38LX112. This is necessary in that estimated significance is a function of adverse impacts associated with proposed construction activities.

ESTIMATED POTENTIAL SIGNIFICANCE:  
38LX104 and 38LX112

Introduction

The purpose of this portion of the archeological assessment of proposed construction activities in the South Carolina Electric and Gas Company's transmission line corridor is to present - in general terms- the significance of the two archeological sites situated in the corridor. While the means whereby significance is estimated remain the same for each site, the recovery of different kinds of data from each site must result in differences in the estimated significance of each site. The discussion which follows is oriented toward explaining the means whereby significance is estimated.

Significance is considered to be a function of the amount of information relevant for purposes of scientific study that may be contained in an archeological site. This information characteristically includes (a) archeological data, taken here to mean cultural remains, that may inform on general sociocultural patterns, and (b) data pertaining to the biophysical environment in which such sociocultural systems operated. Archeological data

has been further subdivided (Binford 1972: 167) into artifacts, features and ecofacts. Artifacts include moveable implements associated with the generalized human activities of procurement, processing, manufacture, use, and replacement of resources. Features may include non-moveable facilities associated with the generalized human activities of preservation and storage of resources (see also Wagner 1962: 89-92). Ecofacts generally include data regarding the naturally-occurring resources that were exploited by the group inhabiting an area. Biophysical data may include information regarding the natural environment in which such groups operated. There is a subtle distinction between ecofacts and biophysical data with the former term referring to those components of the biophysical environment that were exploited by human groups, while the latter refers to the totality of the biophysical environment.

Significance is also a function of the threat of varying degrees of adverse impact on all or portions of the sites under consideration (see previous section). The potential significance of that portion of an archeological site that may be adversely affected by a proposed course of action increases by the very fact of its possible destruction. The degree of impact associated with any one course of action also varies depending on the nature of the archeological sites to be adversely affected. Some courses of action are more detrimental to some kinds of sites than to others.

With this presentation of the manner in which significance in general is determined, it is necessary to turn to a specific assessment of the significance of 38LX104 and 38LX112. Recommendations will then be made on the basis of the estimated significance of each of these sites.

#### Estimated Significance - 38LX104

The potential significance of 38LX104 is assessed on the basis of (a) the information contained in the deposits of the site and (b) the degree of adverse impacts arising from proposed construction activities associated with the transmission line.

With regard to the former consideration, it has not been possible, on the basis of data collected thus far, to determine whether or not 38LX104 contains information important in reconstructing past lifeways and studying processes of cultural change - the two primary goals of archeological research (Thomas 1974: pp. 26-31, 57-73). Consequently, we must continue to assume that the site is potentially informative and, as a result, significant.

With respect to the latter consideration, 38LX104 consists of a spatially-diffuse surface scatter of ceramics and chipped stone debitage conforming to the definition of a site exhibiting fragile patterning. The spatial relationships that exist between the artifacts occurring in such a site are easily disrupted and/or destroyed by any substantial disturbance of the site by wind or water, by the forceable removal of vegetation, or by human activity including, most notably, construction activities. Should such disruption occur, the relationships critical in defining the nature of past human activities are modified and the site is of diminished value for purposes of archeological inquiry. Given these considerations, the erection of transmission lines and other associated ancillary activities such as movement of vehicles, influx of construction personnel, and vegetation clearing must be considered detrimental to the integrity of 38LX104. As a result, these activities constitute adverse impacts on the site. An indication of the extent to which activities such as movement of vehicles can modify the surface of a site are present in Figure 5. As these photographs show, vehicular traffic



FIGURE 5a and 5b. Examples of surface modification resulting from the movement of vehicles within the SCE&G Cayce Powerline corridor.



can result in the complete destruction of archeological materials situated in the plowzone. The degree of adverse impacts associated with the implementation of a program to erect transmission lines for the City of Cayce is lessened, however, in that surface disturbances resulting from such vehicular traffic will result in the disruption of limited portions of any one of the six sub-areas of the site and subsurface disturbances resulting from the placement of transmission line poles will be minimal, given the diffuse distribution and low density of artifacts at the site.

The reader should note that it would have been impossible to adequately approach the potential significance of 38LX104 had further research not been undertaken following the discovery of the site. The data recovered during subsequent investigations did allow tentative patterns in the internal structuring of the site to be established. This information has enabled more appropriate courses of action to be selected concerning the possibility of mitigation. Furthermore, while some probable adverse impacts are associated with the construction project, the primary factor in formulating recommendations has been that the degree of impact would be minimal. It is impossible, however, to determine the degree of impact of any project unless something is known about what is to be impacted. In essence, we cannot be expected to provide EIS recommendations while operating in a data vacuum. This has been the primary concern throughout these investigations in that the corridor is situated within the boundaries of a National Register area.

#### Estimated Potential Significance - 38LX112

The potential significance of 38LX112 has been estimated on the same basis as 38LX104: the potential information contained in the deposits of the site and the degree of adverse impacts associated with the proposed transmission line corridor. While the sites are very different, the same conclusions were reached at 38LX112 as at 38LX104. The site is believed

to be very significant in terms of the information it may contain. Again, the reader should note that the presence of 38LX112 was not known at the time the initial reconnaissance of the transmission line corridor took place (August, 1975). The location of this site during the subsequent research phase further substantiates our contention that EIS recommendations cannot be made without a thorough examination of areas that are to be adversely affected.

Although adverse impacts are associated with the proposed construction program to occur in the bluff area, the cumulative degree of impact on the integrity of 38LX112 is estimated to be minimal. This estimate is predicted on the same considerations as presented for 38LX104.

#### RECOMMENDATIONS

38LX104 and 38LX112 have been found to be significant according to the criteria presented in this report. Both sites are subject to adverse impacts associated with construction activities proposed by the South Carolina Electric and Gas Company. These adverse impacts have been detailed in previous sections and the degree of impact has been estimated to be minimal. In accordance with these factors, the following procedures are recommended:

- (1) That a program of mitigation of adverse impacts associated with the construction of the South Carolina Electric and Gas Company transmission line corridor not be implemented at this time. Future activities in the corridor, or additions to facilities constructed as part of this present program, should be made with the counsel of a qualified professional archeologist.

- (2) That clearance be recommended for a transmission line corridor extending in a north-south direction over the eastern portion of 38LX104. Clearance is recommended for an area extending 25 feet to both sides of the staked centerline indicated by Mr. Moore. Vehicular traffic or the movement of heavy equipment should not proceed beyond the boundaries described above.
- (3) That subsurface disturbances in the immediate vicinity of 38LX112 be limited to the erection of transmission line poles and anchoring devices.
- (4) That construction personnel be closely supervised to eliminate vandalism of the archeological remains present at 38LX104 and 38LX112.

#### CONCLUSIONS

Environmental Impact research completed for the South Carolina Electric and Gas Company resulted in a number of benefits for the contracting agency, and archeological and other scientific disciplines.

The South Carolina Electric and Gas Company has generated valuable information from this program of archeological research. Most of these benefits are associated with long-range planning goals for future modifications of, or additions to, transmission and/or generating facilities. Of especial importance for planning purposes is the knowledge that bluff, terrace, and floodplain areas situated in close proximity to the Congaree River may be expected to contain important archeological resources. This enables agencies engaged in activities resulting in environmental modifications to become more conscious of the potential deleterious effects of their proposed construction activities to archeological resources and to implement procedures



insuring that proper steps be taken to delineate and minimize such deleterious effects.

In the discussion of "impacts," criteria used in determining kinds of impacts have been presented. In addition, we have indicated the means whereby the "degree of impact" associated with various activities may be estimated. In this sense, much of the discussion is educational and designed to facilitate communication between contracting agencies (in this case, SCE & G) and consulting archeologists. We have also presented a brief compendium of those characteristics necessary to allow for the recovery of information important in evaluating the significance of archeological sites in general, and, on this basis, to allow for the determination of "degree of impact" required to further evaluate the significance of archeological resources and by doing so, to make appropriate recommendations regarding the necessity for mitigation programs.

Archeological research completed in the transmission line corridor has resulted in the location and examination of two archeological sites, 38LX104 and 38LX112. The research design implemented during the further evaluation of these cultural resources provided for the testing of a number of approaches in archeological data recovery techniques. These included the use of a spatially-dispersed systematic stratified unaligned random sampling procedure at 38LX104, and intensive examination of buried stratified archeological deposits via deep trenching operations at 38LX112. The results of both of these approaches demonstrate the applicability of these techniques in archeological research in the upper Congaree Valley. While the information recovered through the use of these techniques is limited, this appears to be a function of the scope of this project-specific data recovery program and not an inherent feature of the techniques themselves. As a result, we advocate the continued use of these techniques where applicable.

The archeological sites examined during this research program await a more comprehensive evaluation. Tentative patterns regarding the nature of prehistoric human occupations of the bluff and floodplain of the upper Congaree River Valley have been established. The majority of such patterning concerns intra-site structuring; inter-site patterning remains to be delineated. Many of the inferential statements presented in the summary and site evaluation sections on both of the sites may be rephrased as hypothetical statements suitable for testing during future research programs and, as such, will help to orient future research in the Congaree River Valley as a whole.

In addition, a number of benefits have accrued for other physical and environmental science disciplines as a direct result of the archeological research. The research design implemented at one of the sites (38LX112) provided for the recovery of various biophysical data as a concomitant feature of archeological investigations in the transmission line corridor. Specialists in the fields of fluvial processes, geomorphology, sedimentation, palynology, and paleoenvironmental reconstruction have received data directly applicable to their fields of inquiry. For many of these specialists, these data constitute a substantial increase in the amount of relevant information available from the Congaree River system and the Fall Line physiographic province. For example, pollen sequences from late post-Pleistocene and Holocene deposits have not been collected for these areas of South Carolina until now. The recovery of this information during the archeological research is of extreme importance in the interpretation and reconstruction of paleoenvironmental biotic and abiotic conditions.

The recovery of information such as that discussed above is important in the continuing process of long-range planning, archeological research, and research in other scientific disciplines. The potential recovery of this kind

of information within the context of an archeological research program for environmental impact purposes demonstrates the validity of intercommunication among all groups involved in the environmental assessment process and the importance of interdisciplinary research in an archeological assessment of a region. We hope that this pattern of cooperation will be continued in future research.

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