REDACTED VERSION

Report submitted under 10 CFR 2.390(a)(3). Portions of this report are withheld under Section 304 of the Archaeological Resources Protection Act (16 U.S.C. 470w-3(a)).

AN ARCHEOLOGICAL RECONNAISSANCE OF THE GAFFNEY BY-PASS, CHEROKEE COUNTY, SOUTH CAROLINA

by
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Prepared by the
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INTRODUCTION

From August 1, 1977 through August 3, 1977 the Institute of Archeology and Anthropology highway archeology staff (Stephen Perlman, James Michie and John Cable) conducted a reconnaissance survey along the proposed corridor of an Interstate 85 and South Carolina State Highway 105 connector. The right-of-way is just east of the town of Gaffney in Cherokee County, South Carolina (Fig. 1). The proposed route runs approximately 7.75 miles and cross-cuts a number of established highways. The reconnaissance was undertaken in cooperation with the South Carolina Highway Department and was funded by them in compliance with NEPA (1969) and Executive Order 11593. Laboratory analysis of the material collected on survey was undertaken by James L. Michie between August 22 and August 27, 1977. The following report will describe the results of the reconnaissance survey, evaluate the relative importance and significance of the archeological resources found within the impact zone of the proposed corridor, and suggest a strategy for further investigation of these resources.

Figure withheld under Section 304 of the Archaeological Resources Protection Act (16 U.S.C. 470w-3(a))

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ENVIRONMENT

The proposed Gaffney By-Pass is located in the higher elevations of the Piedmont in northwestern South Carolina (Fig. 1). This area is characterized by extremely rugged, high relief (Trimble 1974; Cable and Michie 1977). In the immediate vicinity of the proposed route, elevations range from approximately 500 feet along the Broad River floodplain to 820 feet and 1000 feet at the peaks of McCowan and Draytonville Mountains, respectively.

The actual line of the by-pass cuts across a number of ecological communities. On the northern portion of the area surveyed, the proposed by-pass runs along the small floodplain, upper terrace and adjacent ridges of the west bank of the Broad River. The Broad River begins to widen at this point and is dotted with a number of rock shoals and small islands. The southern section of the route cuts westward into the upland ridge formations of the inter-riverine Piedmont. In this area the line of the route cuts transversely across a number of intermittent drainage channels of London Creek, a tributary of the Broad River. The route ends at the headwaters of London Creek on a secondary watershed divide, approximately 4.2 kilometers inland from the Broad River.

Recent land use activities have created a major impact on the archeological resources in the area of the proposed by-pass. In addition to agricultural activities, a number of power line and road cuts, railroad and mining excavations and house foundation preparations have been responsible for major earth moving operations in the area. Although these activities can produce increased site visibility, in Gaffney

many of the exposed sites have been destroyed by erosion and topsoil displacement.

The route is of particular archeological interest because it is situated between the inter-riverine and riverine zones of the Piedmont (see House and Ballenger 1976). Of all environments in the Piedmont, the upland areas directly adjacent to major drainages, as that of the proposed Gaffney by-pass route, are the least understood in terms of prehistoric land-use patterns. The investigation of a number of transects such as the one created by this proposed corridor will contribute significantly to forming a more complete picture of site locational patterning and prehistoric adaptive strategies in this transitional environment.

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METHODOLOGY

The reconnaissance survey methodology was a walking survey between known points, usually where the by-pass intersected existing roads. When sites were encountered grab samples of artifacts from large sites and attempts to completely collect small sites were made. In areas of high ground visibility (i.e. plowed fields, power line cuts, road cuts, etc.) no additional site discovery techniques were employed. In situations of low ground visibility (i.e. forested areas) subsurface testing was undertaken by sifting 1'X 1' test pits at approximately 50 foot intervals along the proposed route. The portion of the route north of U.S. 29, corresponding to the pre-existing paved State Highway 32, was not surveyed.

SITE DESCRIPTIONS

Fourteen archeological sites were discovered within or near the proposed highway corridor. These sites provide important locational information about human behavior. However, the fact that most of them are small and shallow limits the potential of these sites to yield information. The sites are not expected to provide information about intrasite patterns or to reveal undisturbed features.

38CK29 The Road Site. The Road site is located several hundred feet south of the intersection of Highways #29 and 32, on a small dirt road that leads to Cherokee Creek. This historic site yielded ceramic fragments, buttons, and glass. The assemblage seems to represent an occupation during the nineteenth century.

38CK30 Poison Ivy Site. The site is located on the same dirt road as 38CK29. It is represented by a small scatter of quartz flakes and a Morrow Mountain point. The artifact assemblage is too small to determine the extent of the site. A small test pit was dug adjacent to the scatter on the edge of the road, disclosing the site's shallow nature and the tip of a projectile point. The soil appeared disturbed.

38CK41 The Junk Yard Site. The Junk Yard Site is located on the western edge of Highway #50, at its intersection with the new railroad. The site lies within a junk yard and it is represented by a large scatter of quartz flakes and several projectile points. The points are Morrow Mountain and Savannah River Archaic. This oval deposit is approximately 250 by 75 feet. It has been completely destroyed by erosion and the dragging of junk automobiles across the area.

38CK40 The Dead Pet Site. The site, situated several hundred feet south of 38CK41 and adjacent to the east edge of Highway #50, is located

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within a small cultivated field. It was indicated by a small scatter of quartz flakes and one biface fragment. The fractured biface could not be identified.

38CK39 The Old Barn Site. The site is located approximately five hundred feet west of the proposed highway corridor and adjacent to a small barn. A scatter of quartz flakes over a relatively large area, 150 feet across, characterizes the site. The area is cultivated and terraced. Diagnostic artifacts were not found.

38CK38 Eroded Site. The Eroded site, located about 100 feet east of 38CK39 is adjacent to a small stream that separates the two sites. It is highly eroded and dissected by small gullies. Within the eroded areas, which are wooded, occasional quartz flakes and a single unidentifiable projectile point were found.

The site is situated about 100 feet west of the proposed highway corridor. It borders on the edge of a large cultivated field and a pine thicket.

38CK31 Joe Z. Greene Site. The site is located at the intersection of County road #132 and the proposed highway corridor. The site size appears to have been reduced by the construction of the county road. This road dissects the site, leaving portions on the north and south edges somewhat disturbed by road construction and presently eroding.

The site produced a small number of quartz flakes and two projectile points: a Guilford and a resharpened Morrow Mountain point.

38CK32 The Cow Pond Site. The Cow Pond site is located several hundred feet behind the home of Joe Z. Greene, and adjacent to a small dirt road and watering hole for cattle. It lies very close to the

proposed highway corridor. The construction of the pond has disturbed much of the site and only a small area near the dirt road produced cultural material. Much of the surrounding areas are in pasture, providing adequate ground visibility for determining the extent of the site. Flakes of quartz are scattered in an area about one hundred and fifty feet by seventy five feet.

The artifact inventory is predominantly quartz, but one flake of banded slate was found. The artifacts represent flakes and three projectile points: one Savannah River Archaic manufactured from slate and two quartz Guilford points. Two additional bifaces were recovered; however, one is fractured and unidentifiable, while the other appears to be a preform.

38CK33 Friendly Dog Site. The site lies several hundred feet west of the Cow Pond site, and it is located between a small dirt road and the headwaters of a small stream. Presently, the site is planted in soybeans. The deposit is approximately 150 by 75 feet. It is represented by a scatter of quartz flakes, chunks, and a single Savannah River projectile point.

Because the site is situated on relatively flat ground, a few test pits were excavated to determine the site's depth. The excavation revealed a plow zone about six inches deep that terminated on residual clay. This site is similar to the many other sites within the region, and like many of those, portions of it are terraced.

38CK34 Old House Site. The site is located about 150 feet west of the proposed highway centerline, and within a small patch of pine and oak, extending out into the fringes of a cultivated field. The open

patch of woods apparently represents an old house site, as indicated by the remains of bricks, fractured ceramics and glass. The cultural material appears to represent a nineteenth century occupation.

The site is situated several hundred feet west of the home of Mr. Ed McKown on his property near Cherokee Lake.

38CK35 The Soybean Site. The Soybean site is located about 250 feet west of Ed McKown's home, between 38CK34 and McKown's home. It lies in the corridor of the proposed highway, and is situated on residual clay and field rubble. The site is scattered over an area roughly 100 by 75 feet, and it is characterized by a thin scatter of quartz flakes and a single Guilford projectile point. Other artifacts include a broken preform and debitage of quartz.

38CK36 The Wildcat Site. This site, located in the yard of Ed McKown's home, was seen as a thin scatter of flakes and two broken projectile points, suggestive of either Morrow Mountain or Guilford types.

The yard is eroded and dissected by small rain gullies that have developed in areas without grass. Other areas within the yard have been disturbed by various vehicle traffic. Predictably, the entire site is eroded or disturbed.

38CK42 Cherokee Lake Site. The site is located near the highway corridor on a small knoll between the lake and a dirt road leading to the lake. The knoll is composed of a sandy residual clay containing rubble. The site is presently cultivated in soybeans, and it represents a multicomponent occupation of Middle Archaic, Woodland, and Historic periods. The Middle Archaic is represented by a broken Savannah River point and two Guilford points. The Woodland occupation is identified

by a Yadkin point; the historic occupation was indicated by fractured ceramics typical of the nineteenth century. Other artifacts include flakes and chunks of quartz. The site, however, is small, covering an area roughly 100 by 80 feet, and the scatter of material culture is thin.

38CK37 The Ridge Runner Site. The Ridge Runner site is a continuous deposit that extends from the headwaters of London Creek to the soybean field south of Highway #13. The three collections (Loci #1, #2, and #3) represent the remains of three areas of this site, not three distinct sites.

Locus 1. This locus is situated on a large ridge of residual clay with small amounts of sand overlooking the headwaters of London Creek and Highways #13 and #105. It is presently cultivated in soybeans.

The locus is large, covering an area 450 feet by 100 feet, and is represented by the occurrence of cultural materials including projectile points, flakes, unifacial tools, hammerstones, and nutting stones. In addition, it also yielded Coastal Plain chert, Ridge and Valley chert, and silicified slate. The cultural material includes representatives of the Early Archaic, Middle Archaic, Late Archaic and Woodland periods, spanning more than 6000 years.

The human occupations were extensive in this area as evidenced by the continuous scatter of debitage. The diversification of tools indicates that the inhabitants used the area for long periods of time, perhaps as a base camp.

Locus 2. This area is located at the intersection of the proposed highway corridor and Highway #13. It is situated on a field of residual clay, and is presently cultivated in soybeans. The occupation is

represented by a thin scatter of quartz flakes and historic ceramics, neither of these in large numbers.

The historic component, as indicated by two ceramic sherds, represents a nineteenth century occupation. The lithic remains, which are also poorly represented, contain no diagnostics.

Locus 3. The third locus of the Ridge Runner site is situated within the corridor of the proposed highway on the south side of Highway #13 in a soybean field. It covers a rather large area with diffuse cultural remains.

The occupation represents at least three periods: the Early Archaic, Middle Archaic, and Woodland, as reflected in projectile point types. The points include Palmer, Kirk, Morrow Mountain, and Caraway. Other remains of material culture include flakes, broken bifaces, preforms, and unifacial tools.

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EVALUATIONS AND RECOMMENDATIONS

Although 14 sites were discovered during the reconnaissance, only one of these, 38CK37, can be considered appropriate for mitigation. Information from the other sites was obtained either by near 100% surface collections of artifacts at the small sites or by grab sampling of larger artifact scatters. Most of the sites are judged to be too severely eroded to provide reliable information about prehistoric behavioral patterns. As a consequence, surface collection data was considered to be an adequate representation of these sites' information potential.

38CK37, in contrast to the other sites, can provide information on two distinct levels of analysis, intra- and intersite variability. At the present time, prehistoric behavioral variability in the Piedmont is not well understood. While it is generally agreed that the prehistoric economic behaviorial systems in the Piedmont were relatively simple and restricted (House and Ballenger 1976), ascertaining how these systems were organized in space is a complex analytical task.

Recent research in the South Carolina Piedmont (c.f. House and Ballenger 1976; Wogaman 1977; Goodyear, Ackerly and House n.d.; House and Wogaman n.d.; Most 1977; Cable and Michie 1977) has succeeded in discriminating variation in the inter-riverine zone. Sites tend to be located on ridges near the headwaters of small tributaries. While most sites are small and composed of diffuse scatters of flakes and occasional bifaces, a small proportion of sites is characterized by large, dense flake scatters with large numbers of bifaces. Some of these large sites, like 38CK37, also exhibit a more diverse tool inventory including hammerstones and milling stones.

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This observed variation in the archeological record fits two opposed behavioral interpretations. On the one hand, the larger sites could have been formed by the several episodes of duplication of behavior of small extractive camps by groups returning, time after time, to locations with consistently higher production probability. According to this model, the larger sites are the result of accretion and represent essentially the same behavior (i.e. the same resource exploitation pattern) as that responsible for the formation of the smaller sites. House and Wogaman (n.d.) suggest that Windy Ridge (38FA118), an example of a larger site in the Piedmont, may be the result of this type of accretionary, duplicative behavioral pattern.

As a consequence of the Gaffney By-Pass reconnaissance a totally different interpretation of some of these larger sites has been postulated. Although most Archaic sites in the Piedmont are located at the headwaters of tributaries or minor streams, the Ridge Runner site (38CK37), in contrast, is located at the interstice of a number of small drainages and additionally at the headwaters of a major tributary of the Broad River (London Creek). This location provides optimal access to a large number of essentially identical resource zones that are also the locations of the smaller sites. This optimal location could support a large population during the same or other seasons than those represented by the smaller sites. The larger population would entail a totally different spatial and social organization of people than the previous model implies. These differences in behavior should correspond to maintenance and social interaction differences and not to the type of extractive task performed at the site (which could remain the same).

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Since the optimal location of 38CK37 should have only produced the same inventory with larger counts as suggested for large sites under the first model, an independent test of the second model is necessary. The hypothesis to be tested is: Do sites in the same productive zones for the same extractive tasks produce contrastive inventories that are a consequence of the sites' social intensity? In order to test this hypothesis at the Ridge Runner site, an excavation strategy is required that will allow us to derive a representative sample of the activities that occurred at the site. If indeed the Ridge Runner site is the result of the social aggregation stipulated in the second model, then it is expected that behavioral contrasts between the Ridge Runner site and the other smaller sites and the Windy Ridge site should be reflected in site content--both in artifactual material and site features. A two-stage excavation strategy involving a systematic stratified unaligned random sample stage and a contiguous block excavation stage similar to that employed by House and Wogaman (n.d.) for Windy Ridge would provide the best data to test this hypothesis.

In conclusion, it can be seen that mitigation of the Ridge Runner site can inform on two analytical levels. Initially, it can provide a better understanding of the internal structure of single Piedmont sites. Secondly, it has the potential for relating this intra-site information to the development of regional site locational and subsistence-settlement models for the Piedmont. As such, 38CK37 represents a critical, high research potential site to archeologists.

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REFERENCES

Cable, John and James L. Michie
1977 An archeological reconnaissance of the Chesnee By-Pass, Cherokee and Spartanburg Counties, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina, Research Manuscript Series* 119.

Goodyear, Albert C., Neal W. Ackerly and John H. House
n.d. Regional settlement models in the South Carolina Piedmont: a survey of the Laurens-Anderson connector route. *Institute of Archeology and Anthropology, University of South Carolina, Research Manuscript Series,* in preparation.

House, John H. and David L. Ballenger
1976 An archeological survey of the Interstate 77 route in the South Carolina Piedmont. *Institute of Archeology and Anthropology, University of South Carolina, Research Manuscript Series* 104.

House, John H. and Ronald W. Wogaman
n.d. Windy Ridge, a prehistoric site in the inter-riverine Piedmont in South Carolina. *Institute of Archeology and Anthropology, University of South Carolina,* in preparation.

Most, Rachel
1977 An archeological reconnaissance of the proposed Pacolet River Reservoir: Spartanburg County, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina, Research Manuscript Series* 116.

Trimble, Stanley W.
1974 *Man-induced erosion on the southern Piedmont.* Soil Conservation Society, Akeny, Iowa.

Wogaman, Ronald W.
1977 An archeological survey and evaluation of the Hodges to Ware Shoals route (U.S. 25) in Greenwood County, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina, Research Manuscript Series* 111.

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Project No. C7523-01

August 1995

PHASE I CULTURAL RESOURCES REPORT FOR TRANSCONTINENTAL GAS PIPE LINE CORPORATION'S 14.92 MILE NATURAL GAS PIPELINE LOOP AND WORKSPACE AREAS IN CHEROKEE COUNTY, SOUTH CAROLINA

Lead Agency: FERC - Not for Public Disclosure

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August 1995

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38CK2; 67, 84-87

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ABSTRACT

This report details the research strategy, background research, and results of a Phase I cultural resources survey for Transcontinental Gas Pipe Line Corporation (Transco), of Houston, Texas. The purpose of the survey was to locate and identify all archaeological resources within the proposed right-of-way, to assess when possible their significance in terms of the criteria for listing in the National Register of Historic Places (NRHP), and to make recommendations for avoidance or mitigation procedures for any culturally significant areas. Transco proposes to install 14.92 miles (24.17 km) of natural gas pipeline parallel to an existing pipeline corridor in Cherokee County, South Carolina. The right-of-way (ROW) examined for this report extends for 100 feet (30 meters [m]) to the north (or south) of the existing corridor, which encompasses most of the additional temporary workspaces situated at road and creek crossings (exceptions are indicated in the text). The orientation of the workspaces relative to the pipeline reflects the effects of a proposed crossover at MP 9.86: In addition, the project includes two pipe storage yards of approximately 2.60 and 5.00 acres situated adjacent to the proposed corridor. The survey has been conducted by 3D/Environmental (3D/E) of Cincinnati, Ohio.

State and NRHP site file searches revealed two previously recorded cultural resources within the proposed construction area, sites 38Ck2 (Cherokee Ford Ironworks) and 38Ck67 (Susan Furnace), both listed with the National Register of Historic Places (NRHP). Due to the presence of these known resources, the South Carolina Division of Archives and History deemed the project area to be archaeologically sensitive. Field reconnaissance consisted of surface inspection and shovel testing at various intervals ranging from 10 to 30 m, based on topographic and cultural features.

In the course of these investigations, four previously unrecorded sites were discovered, including two surficial prehistoric lithic scatters in highly deflated contexts (38Ck84 and 38Ck85). Subsurface shovel testing in the vicinity of these scatters failed to produce cultural material. Both were located along ridgecrests and appeared to be out of cultural context. Site 38Ck86 was discovered along a tributary to Furnace Creek in Segment 4. This site produced only four quartz flakes in two separate shovel tests. Although close interval shovel testing and intrasite shovel tests were both employed in this area, no additional material was recovered. The final previously unrecorded site, 38Ck87, was located along a ridgecrest in Segment 6. A total of four artifacts, including a projectile point, were recovered from this area in two shovel tests (SL 69 and SL 70). Intensive pedestrian survey in the area of the site as well as intrasite shovel tests failed to produce additional cultural material or subsurface features. Therefore, none of the four previously unrecorded sites are being recommended for further testing as it appears they do not meet the criteria necessary for eligibility for nomination to the National Register of Historic Places.

As previously stated, a portion of the project corridor encompassed Susan Furnace Site (38Ck67). This National Register of Historic Places

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(NRHP) site consisted of a 1748 colonial iron furnace and related no longer extant architectural structures, and is part of an historic district (thematic nomination "Cherokee Ford Iron Works"). The proposed project corridor and additional temporary workspace extend northward from the existing maintained right-of-way to the north of this iron furnace placing it into the zone of impact. Additional testing is recommended at this site if avoidance procedures prove infeasible.

The portion of the project area which crosses a section of the Cherokee Ford Iron Works (38Ck2), a thematic historic district, was intensively examined through shovel testing and pedestrian reconnaissance. The main industrial complex, the Coopersville Iron Works, is located to the south of both Transco's proposed and existing corridors. Therefore, the focus of the reconnaissance was geared toward peripheral resources (i.e. iron ore bodies, railroad lines or cross ties, and any other structural remains which may be associated with the district. Aside from the Susan Furnace Site (38Ck67), no significant cultural resources were encountered during survey of 38Ck2 portion of the proposed corridor. Even no though other cultural materials were recovered within the NRHP district area, extreme caution is recommended during project construction.

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INTRODUCTION

This report details the research strategy, background research, and results of a Phase I cultural resources survey for Transcontinental Gas Pipe Line Corporation (Transco), of Houston, Texas. Transco proposes to install 14.92 miles of natural gas pipeline parallel to an existing pipeline corridor in Cherokee County, South Carolina (Figures 1-7). The right-of-way examined for this report was 100 feet (ft) or 30 m, extending to the north (or south) of the existing corridor, which encompasses most of the additional temporary workspaces situated at road and creek crossings. The total area covered by the Phase I survey of the corridor is approximately 179.04 acres. In addition, the project includes two pipe storage yards of approximately 2.60 and 5.00 acres situated adjacent to the proposed corridor. The survey has been conducted by 3D/Environmental (3D/E) of Cincinnati, Ohio.

The purpose of the survey was to locate and identify all archaeological resources within the proposed right-of-way, to assess when possible their significance in terms of the criteria for listing in the National Register of Historic Places (NRHP), and to make recommendations for avoidance or mitigation procedures for any culturally significant areas. Archival research targeted local and regional cultural history, the environment, and the published site-specific literature available in various state and local depositories. The research design included suggestions from the personnel of the South Carolina Office of State Archaeology, the South Carolina Department of Archives and History, Transco representatives, Terry Ferguson, Ph.D. of Wofford College, as well as standard field reconnaissance involving pedestrian survey and shovel testing of the project corridor.

The survey area extended from just west of the town of Blacksburg, South Carolina to near the village of Pacolet, South Carolina. The right-of-way was tested minimally along its centerline, as up to three transects were utilized. The pipe storage yards were tested in a grid pattern. Both surface survey and shovel testing were employed. Surface survey was conducted where surface visibility was greater than 50%, along steeply sloped areas (>20%), or where ground-water inundation prevented effective shovel testing. Tests were placed at intervals ranging from 10 to 30 m. Auger probing would have been utilized in alluvial settings to test for deeply buried cultural deposits, however, these areas were inundated with surface and ground water.

This project was managed by 3D/E Principal Archaeologist Christopher A. Bergman, Ph.D. The fieldwork was completed by Field Director Gary Perkins, assisted by five experienced Field Technicians. Resumes for the primary personnel are included as Appendix A. Field survey and background research were conducted from 11 to 29 July 1995.

State and NRHP site file searches revealed two previously recorded cultural resources within the proposed construction area, sites 38Ck2 (Cherokee Ford Ironworks) and 38Ck67 (Susan Furnace), both listed with the National Register of Historic Places (NRHP). Due to the presence of these known resources, the South Carolina Division of Archives and History deemed

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38Ck 2, 84, 84-87

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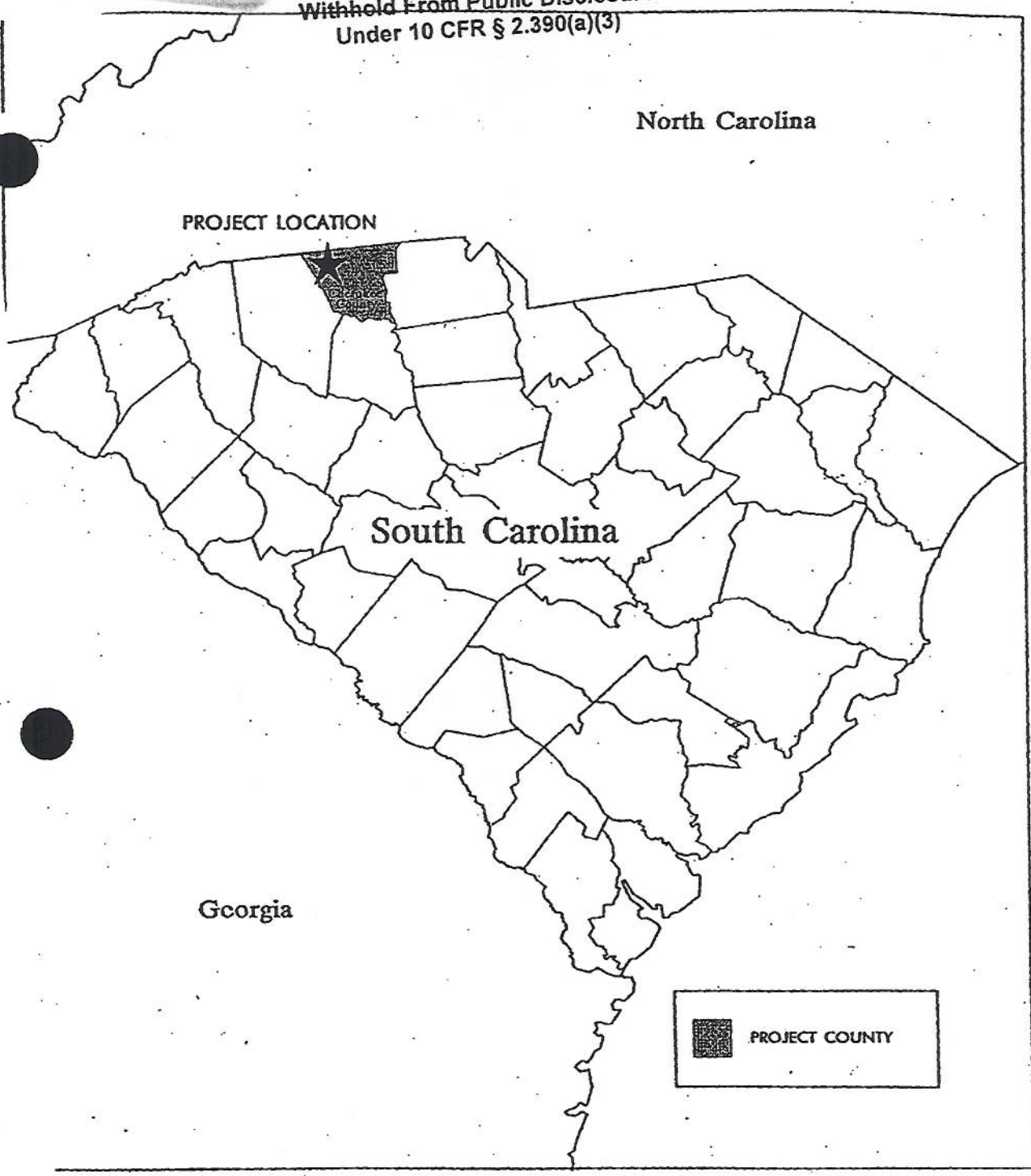

FIGURE 1. STATE OF SOUTH CAROLINA SHOWING THE GENERAL PROJECT AREA.

Project # C7523.01	3D/ENVIRONMENTAL

Figure withheld under Section 304 of the Archaeological Resources Protection Act (16 U.S.C. 470w-3(a))

ENVIRONMENTAL OVERVIEW

Introduction

Archaeological research requires an understanding of the relationship between culture and environment. Human societies at all levels of complexity are linked to the natural environment in systematic ecological relationships. These relationships can best be understood as the differential use of available organic and inorganic resources, coupled with the strategies employed for exploitation of those resources. The various environmental parameters that define the set of settlement and subsistence options available to a particular social group comprise a scale of interaction ranging from the regional environment (geomorphological setting, soils, climate, flora, and fauna) to the local factors which affect site selection and subsequent preservation.

Geology and Physiography

Landforms reflect environmental variability and often determine the boundary between biomes. They also control routes of travel and communication. Within broad physiographic zones, minor topographic features provide potential settings for prehistoric and historic sites.

The proposed pipeline is located in Cherokee County, northwestern South Carolina, in the upper part of the Piedmont Plateau (USDA 1962). The county slopes generally from the northwest to the southeast and elevations range from 500 ft to 1000 ft above sea level. The highest elevation in the region is 1300 ft above sea level at the top of Thicketty Mountain.

The drainage of Cherokee County is dendritic and more than 95% of the county is drained by Broad River and its associated branches. A small area in the southern part of the county is drained by the Pacolet River. The bottom lands along Broad River tend to be generally narrow, nearly level, and undulating. Most bottomland areas tend to be less than 2000 ft in width.

Underlying the soils of Cherokee County are granite, schist, and gneiss. Sericitic schist underlies approximately 1/3 of the land area, mainly in the northeastern portion of the county. Quartz mica gneiss and quartz mica schist are the dominant rock types in northwestern Cherokee County. To the south, the majority of rock types include diorite, diabase, gabbro, hornblende schist, and other basic rocks. Outcroppings of highly metamorphosed granite or gneiss are located on Draytonville and Saladback mountains.

Soils

Soil type appears to play an important role in determining the distribution of human groups and the choice of settlement locations on both local and regional scales (Evans 1978:6,7). Certain types of soils were preferred over others by early settlers and Native Americans alike. Quite often, vegetational indicators were surveyed to determine soil fertility and moisture prior to migration and frontier settlement.

The U.S. Department of Agriculture Soil Conservation Service (SCS) in Cherokee County, South Carolina was contacted regarding the two sections of proposed pipeline. Soils in Cherokee County have been mapped by the SCS and a soil survey was published in 1962.

The project area, at its northeastern extent, occurs within the Tatum Soil Association which consists of deep, well-drained, friable soils over sericitic schist. The southwestern portion of the pipeline occurs within the Cecil-Madison Soil Association (USDA 1962) which is described as deep, well-drained, friable soils over gneiss, granite and schist. Soils of this association typically occur on broad ridges and side slopes.

The following table lists the soil types occurring within the proposed right-of-way:

Symbol	Soil Type	% Slope	Comments
CcB3	Cecil clay loam	2-6	severely eroded
CcD3	Cecil clay loam	6-10	severely eroded
CdB	Cecil sandy loam	2-6	
CdB2	Cecil sandy loam	2-6	eroded
CdC2	Cecil sandy loam	6-10	eroded
CdD	Cecil sandy loam	10-15	
CdD2	Cecil sandy loam	10-15	eroded
CdE	Cecil sandy loam	15-25	
CdE2	Cecil sandy loam	15-25	eroded
Ga	Gullied land		
GfF	Gullied land	10-35	
HaC2	Helena sandy loam	2-10	eroded
IcC3	Iredell clay loam	6-10	severely eroded
IrB	Iredell fine sandy loam	2-6	
LcB3	Lloyd clay loam	2-6	severely eroded
LcC3	Lloyd clay loam	6-10	severely eroded
LcD3	Lloyd clay loam	10-15	severely eroded
LdB2	Lloyd loam	2-6	eroded
MeC	Manteo channery silt loam	2-10	
MeC2	Manteo channery silt loam	6-15	eroded

Symbol	Soil Type	% Slope	Comments
MeD	Manteo channery silt loam	10-15	
MeE	Manteo channery silt loam	15-35	
MnB2	Mecklenburg loam	2-6	eroded
Mw	Mixed wet alluvial land		
NaB	Nason very fine sandy loam	2-6	
NaC2	Nason very fine sandy loam	6-10	eroded
NaD2	Nason very fine sandy loam	10-15	eroded
NaE	Nason very fine sandy loam	15-25	
NsE3	Nason silty clay loam	10-25	severely eroded
TaB3	Tatum silty clay loam	2-6	severely eroded
TaC3	Tatum silty clay loam	6-10	severely eroded
TaD3	Tatum silty clay loam	10-15	severely eroded
TmB	Tatum very fine sandy loam	2-6	
TmB2	Tatum very fine sandy loam	2-6	eroded
TmC2	Tatum very fine sandy loam	6-10	eroded
TmD	Tatum very fine sandy loam	10-15	
TmE	Tatum very fine sandy loam	15-25	
TmE2	Tatum very fine sandy loam	15-25	eroded
TmF	Tatum very fine sandy loam	25-35	
TrB2	Tirzah silt loam	2-6	eroded
WkB	Wilkes sandy loam	2-6	
WkD2	Wilkes sandy loam	6-15	eroded
WkE2	Wilkes sandy loam	15-25	eroded
WkF	Wilkes sandy loam	15-35	

The above list of soil types crossed by the proposed corridor reflects the undulating character of the project landscape which is characterized by a relatively high proportion of moderate and steep slopes. Second, many of the soil types are eroded or severely eroded, indicating the presence of deflated topsoil horizons. Both these factors will have an effect upon the location of archaeological sites along the proposed corridor.

Paleoenvironment, Flora, and Fauna

Environmental changes within the project area in the last 15,000 years occurred as a result of the advance and retreat of the last Pleistocene glaciers. The evidence for these changes is predominantly in the form of pollen cores and faunal studies (Guilday 1967; Carbone 1976). It is suggested on the basis of this data that the Late Glacial environment represented a mosaic of diverse plant communities. Environmentally sensitive animals such as voles and lemmings which are found today in markedly different biomes, occur together in Late Glacial deposits (Brown and Cleland 1968:114); Pleistocene megafauna also display similar anomalous associations (Carbone 1976:67). A mix of woodland musk ox, grazing mammoth, browsing mastodon, giant moose, woodland peccaries, white-tailed deer, caribou, elk, and giant beaver were apparently present in Late Glacial times. Areas of grassland/woodland interface would have been the focus of the greatest variety of fauna. Low order streams, bogs, ponds, and swamps would also have been high potential game areas (Custer 1985).

During the period of peak glacial advance (21,000 B.C. to 14,500 B.C.), when the ice sheets extended to a point north of the Ohio River, there existed a 60 to 100 km (37 to 62 miles) wide belt of tundra which may have reached into portions of the Appalachians. Pollen evidence suggests the presence of tundra vegetation along the alpine zone south of the ice margin.

The Pre-Boreal/Boreal episode (8000 - 6500 B.C.) marked a transition from Pleistocene to Holocene climate. There was a reduction of open grassland and a spread of boreal forests with spruce and pine the dominant species; some oak forests also existed at this time. The spread of closed coniferous forest would have drastically lowered faunal carrying capacity. Poorly drained swampy areas and stream margins would have been the focal points of game animals such as deer, moose, and elk.

The Atlantic climatic episode (6500 - 3100 B.C.) was characterized by a warming trend. There was an increase in precipitation and an expansion of mesic forests, first of hemlock and later of oak (Carbone 1976). Oak became the dominant species by about 5000 B.C. (Bernabo and Webb 1977). The faunal assemblage became essentially modern, with deer and turkey as major components.

The Sub-Boreal climatic episode (3100 - 800 B.C.) was a warm and dry period (mid-post glacial xerothermic), which peaked around 2350 B.C. This was followed by a period of increasing moisture and slowly decreasing temperature. The mid-post glacial xerothermic occurred from 2700 to 2000 B.C. and led to dramatic floral/faunal changes (Custer 1985). Primary among these changes was an increase in hickory and an expansion of grasslands. Increases in nut bearing trees such as hickory would have favored wild turkey and deer populations. Hydrological fluctuations due to changes in moisture would have affected riverine and estuarine resources, especially species with limited tolerance to temperature and salinity factors, such as oysters and anadramous fish.

The climate of the sub-Atlantic episode (810 B.C. - A.D. 1000) saw an increase in moisture and cooler temperatures that led to a close approximation of modern conditions. The floral environment in part determines the structure and species composition of animal populations, and is therefore, fundamental to hunting peoples in establishing their life style. This is true also for early Euro-American communities where the perception of vegetational patterns determined, in large part, the choice of settlement locations (Jordan 1979; Gordon 1969; Hulbert 1930).

The project area is located within the central portion of the Carolinian Biotic Province. Roots, tubers, berries, and nuts were plentiful prehistorically (Braun 1950) and would have supported white-tailed deer, black bear, wild turkey, eastern and New England cottontail, beaver, raccoon, wapiti (elk), southern woodchuck, gray squirrel, ruffed grouse, and migratory water fowl. White-tailed deer, black bear, and turkey were undoubtedly important to the area's aboriginal inhabitants.

Modern Climate

The climate of Cherokee County is of modified continental type and is warm and temperate (USDA 1962). The warmest months occur in summer and average about 79°, while the coldest winter month averages about 43°. The average rainfall is about 48 inches annually, and the average snowfall is 4.5 inches. The growing season, free of killing frost, is about 227 days, and it extends from March 29 to November 11.

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REGIONAL CULTURAL OVERVIEW

Introduction

A general review of the literature related to Cherokee County reveals that little is known archaeologically about this area of South Carolina. Indeed a review of the State Archaeological Site files reveals that Cherokee County has a remarkably low number (n=4) of newly recorded sites submitted between 1990 and 1994 (Derting et al. 1995). This number overall is less than 1% of the 4581 sites recorded during those years. In addition, only 83 archaeological sites have been recorded in the state archives for Cherokee County; this number represents 0.4% of the total of 17,240 sites recorded in South Carolina. For the 394 square mile area of Cherokee County, there are 0.21 sites recorded per square mile. While the low distribution of known sites may reflect certain physiographic features characteristic of Cherokee County, it almost certainly also reflects the lack of systematic survey in the region. *These facts make it difficult to produce a cultural overview for the immediate project area.*

The distinct lack of prehistoric research in the Piedmont of South Carolina has also been made obvious in a summary of archeological research in South Carolina by Stephenson (1975). The primary sources of information related to the prehistory of the Piedmont have come from studies in neighboring North Carolina and Georgia. The work of Coe (1964) is the most comprehensive and it forms the basis of the temporal-stylistic artifact sequence for the Piedmont region. Other research includes Claflin (1931), Kelly (1938), Ingmanson (1964), Caldwell and Miller (1948), Caldwell (1954), Michie (1969), Kelly (1972), House and Ballenger (1976), Taylor and Smith (1978) and Goodyear et al. (n.d.). Based on these studies, the prehistoric /and historic culture history of the southeastern Piedmont has been divided into eight major cultural periods:

1) Paleo-Indian (10,000-8000 B.C.)
2) Early Archaic (8000-6000 B.C.)
3) Middle Archaic (6000-3000 B.C.)
4) Late Archaic (3000-800 B.C.)
5) Early Woodland (500-200 B.C.)
6) Middle Woodland (200 B.C.-A.D. 400)
7) Late Woodland-Mississippian (A.D. 400-1500)
8) Proto-Historic to Historic

Paleo-Indian Period (10,000 - 8000 B.C.)

It is widely accepted by archaeologists that the native inhabitants of the New World entered this hemisphere across the Bering Strait from northeastern Asia during the last glaciation. Although there remain persistent questions concerning the number of immigrations, the origin(s) of these peoples, and especially the timing of this/these earliest

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"discoveries" of the Americas (see Meltzer 1989), that all Native Americans had Asian ancestors is not disputed.

The earliest recognized cultural complex for the region is Clovis or any of a variety of other names attributed to lanceolate projectile points with ground bases and proximal lateral edges that were finished by fluting (Goodyear et al. 1989). The technology of Paleo-Indian peoples is composed of fluted and sometimes unfluted, lanceolate-shaped projectile points, bifacial knives, bifacial drills, bipolar cores and flakes, retouched and unretouched blades, and a variety of unifacial tools made on manufacturing debitage--gravers, spokeshaves, beaks, wedges (*pieces esquillees*) and end-scrapers. Hammerstones, abraders, and grinding stones are sometimes recovered, but their context is unclear on many plowzone Paleo-Indian sites, as there are often multiple occupations. Raw materials used by Clovis peoples in South Carolina include both Coastal Plain chert and metavolcanic rocks. A variant of the Clovis type seems to be more strongly associated with Piedmont-related raw materials (Goodyear et al. 1989).

Three other Paleo-Indian complexes are recognized in South Carolina and these are characterized by Suwannee, Simpson, and Dalton points. The former are lanceolate points with convex edges and a flaring base with well-defined ears. These points do not possess a clearly-defined flute or basal thinning flake scar. Suwannee points are most commonly found in the southern half of the state and in most respects share cultural and technological characteristics with the Suwannee-Simpson sites in Georgia and Florida. Simpson points appear similar to Suwannee points, but have markedly excurvate edges and waisted haft areas. Like the Suwannee type, these points are not fluted, but are basally thinned, occasionally through lateral thinning flakes.

The onset of warmer conditions due to glacial retreat marked the beginning of the Holocene and the appearance of a number of Late Paleo-Indian regional phases such as Dalton and Hardaway. These cultural units are all defined largely on the basis of a projectile point, whose morphology would appear "transitional" (cf. Stoltman 1974) between the fluted Paleo-Indian Clovis and the corner-notched and side-notched types of the Early Archaic. These transitional types comprise the Dalton Cluster of Justice (1987:35-43) and are considered to date from 10,500 to about 9900 B.P. (Goodyear 1982). Dalton projectile points are lanceolate points with deeply concave bases and wide flaring ears (particularly the Hardaway-Dalton variant). Resharpening patterns include both bevelling and edge serration; the former is relatively rare on South Carolina Dalton sites (Goodyear et al. 1989). Other components of the Dalton tool kit include Dalton adzes.

In terms of site distribution and density, Dalton points occur more frequently across the state than do the other Paleo-Indian point types. Changes in raw material use have also been recorded for this cultural phase. Specifically, Dalton peoples were the first to intensively exploit the orthoquartzites (cemented or silicified sandstone) of the Coastal Plain. Other raw materials include rhyolites and tuffs, while there is a decline in the use of the harder siliceous materials.

The subsistence economy of Paleo-Indian adaptations in the region is largely speculative, given the absence of faunal, archaeobotanical, and contextual data from which to base any reconstruction. The recurrent issue of the degree to which Paleo-Indian peoples hunted megafauna in the East would seem to be addressed most succinctly by Meltzer (1989:41), who proposes that there were two Paleo-Indian adaptations in the eastern United States. Both adaptations were largely determined by the biotic communities extant during Paleo-Indian times. In the Northeast, there was an environment characterized by northern tundra and spruce parkland. This resulted in a focus on the caribou--"the only species that would yield sufficient economic return to allow humans to survive there." In the southern complex, there was a boreal deciduous forest environment (including the middle and lower Ohio River Valley, the Midsouth, and the Southeast). Here, Paleo-Indian peoples would have been exploited a variety of subsistence resources, including seeds, nuts, small mammals, deer, and perhaps mastodon.

An examination of Paleoindian site distribution (see Goodyear et al. 1989: 33) in South Carolina indicates that the majority of known sites occur to the south of the project area in counties such as Lexington, Clarendon, Allendale, Hampton, and Berkeley. A single Paleoindian site is indicated for Cherokee County on the map presented as Figure 2.5 in Goodyear et al. (1989).

Archaic Period (8000 - 800 B.C.)

The Archaic Period, as a whole, generally reflects aboriginal adaptation to a postglacial warming climate, and emerging deciduous forest communities with associated modern fauna. The archaeological record clearly indicates a dependence upon the utilization of gathered forest resources, such as nuts, fruits, berries, and associated fauna. The species of primary importance include bear, white-tailed deer, elk, turkey, raccoon, numerous small mammals, birds, fishes, and invertebrates.

Early Archaic

The Early Archaic phases in the region are defined on the basis of a series of side notched and corner notched projectile point forms such as the Big Sandy, Kirk, and Palmer types. In the Appalachian and Piedmont regions, these projectile point types span the time period between ca. 7000 B.C. and 5500 B.C. (Bense 1994: Figure 5.3).

The flaked stone tool technologies of the Early Archaic are very similar to those of the preceding Dalton and Paleo-Indian periods. There are still numerous unifacial tools made on blades or large knives, bifacial drills, and bipolar reduction. In addition, there is an increased use of grinding stones, which is correlated with the use of arboreal seeds in the diet. The best evidence for this comes from buried Early Archaic sites in the lower Little Tennessee River Valley (Chapman 1985b). Small ground stone

celts appear in the lithic inventory, and in other portions of the Southeast flaked axes probably were employed.

At the Icehouse Bottom site near Knoxville, Tennessee, Chapman (Chapman and Adavasio 1977) recovered the impressions of basketry and netting in clay. Twenty-nine clay hearths yielded impressions of simple twined basketry and netting which probably come from rectangular mats and globular net bags. These impressions are the oldest evidence for textiles in the eastern United States and date between 8000 B.C. and 7300 B.C.

On the evidence of preserved faunal and floral remains, the Early Archaic subsistence system is thought to have included the hunting of deer, elk, raccoon, rabbit, squirrel, and other small mammals. Occasionally bear and perhaps bison (in places) were killed. Plant food collecting focused on seasonally available nuts, berries, roots, and greens.

Based on research along the Savannah River Valley, Anderson and Hanson (1988) suggest that groups of related Early Archaic families (macrobands) were organized along the major river valleys of the region. For most of the year, these bands lived in scattered family units, exploiting a variety of resources within each valley. During the autumn, groups congregated for short periods of time near the Fall Line. These authors suggest that the annual congregations near the Fall Line reflected a time of interband communication and exchange for the low population landscape.

Middle Archaic

It has been proposed that during the Middle Archaic a shift toward a more sedentary settlement system took place. Brown and Vierra (1983) see this reduced mobility arising under external (environmental) and internal (population increase and/or territorial packing) pressures. In this emerging "collector" system, base camps and field camps replace the residential base of foragers. This logistical mobility strategy employs a more permanent base camp exhibiting greater energy investment in shelter, facilities, mortuary areas, and portable technology (grinding stones, axes, and vessels). The settlement-subsistence pattern is characterized by: (1) base camps, where most people live for the greater portion of the year, and (2) field camps, where specialized economic activities are conducted and overnight encampments made. The appearance of permanent architecture is considered to signal this shift from residential to logistical mobility strategies and the "rise of sedentism" (Brown 1985:215).

Although only a few Middle Archaic sites have been excavated in the Piedmont of neighboring North Carolina, important changes in the subsistence technology of these peoples are documented in botanical, lithic, and faunal analyses as well as in site distributions. Even though these patterns trend in the direction posited by Brown and Vierra (1983), it is presently impossible to determine which of several potential causes precipitate the observed trend. Demographic or environmental changes may each be independently responsible, or there may have been a complex interaction between the two.

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In South Carolina, Blanton and Sassaman (1989) suggest that the Middle Archaic spans the time period between 8000 B.P. and 5000 B.P. Among the Middle Archaic projectile points recorded for the region are the Stanly stemmed, Morrow Mountain, and Guilford types. A single radiocarbon date for the Middle Archaic has been reported by Anderson (1979: 90). This determination falls at the latter end of the Morrow Mountain phase and is 5477 ± 170 B.P. In South Carolina, late Middle Archaic Guilford points are less common than the Morrow Mountain type, but occur more frequently than Stanly points.

Daniel Amick and Philip Carr (in press) detail considerable changes in the technological organization of the Middle Archaic groups in the Southeast and Midsouth. Population increases during this time period led to higher population densities resulting in constraints to mobility and the use of smaller territories. This, in turn, led to greater reliance on locally available raw materials, as well as a decrease in the curation value of tools. The tool kit, in effect, becomes more expedient with less effort expended on extending the operational history of individual tools. Dennis Blanton and Kenneth Sassaman (1989:64), describing Middle Archaic stone technology in South Carolina, state that the "overriding trend evident in lithic technology during this period is increasing simplification." They note that the tool kit is modified from Early Archaic times to include more *ad hoc* tools at the expense of "formalized" examples like bifaces. It is assumed that the expedient tool kit reflects a forager pattern of residential mobility (cf. Binford 1980).

During the Middle Archaic in the Southeast region as a whole, shellfish collecting became an apparently regular aspect of the subsistence economy, while the same large and medium-size mammals were hunted as in the Early Archaic. The Middle Archaic witnessed the appearance of the atlatl, as seen by the preservation of the atlatl weight, and occasionally the atlatl hook and handle. It is not certain if the spearthrower was employed before the Middle Archaic in eastern North America, and differing opinions exist in the absence of atlatl weights in the Early Archaic. Many more tools are made of bone or antler at this time, with an concurrent decrease in the variety of flaked stone tools. At the same time, new projectile point morphologies show up, and the number of different types of projectile points observed in a given occupation (or within an archaeological phase) increase (Kimball 1982; Brown and Vierra 1983).

For the Middle Archaic period, Blanton and Sassaman (1989) suggest the following regarding Piedmont Middle Archaic settlement patterns:

1) The homogenous Piedmont habitat yielded a rich resource base, but it was one which was not spatially predictable.

2) Middle Archaic settlements are typically small and diffuse, displaying simple and redundant artifact assemblages. Site density is generally high and no specific topographic features appear to have been favored.

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3) Middle Archaic technologies are marked by simplicity and expediency.

Late Archaic

The late Middle Archaic and the Late Archaic stages saw the emergence of regional traditions as reflected in increased variety of projectile point morphologies, varying exchange networks, and local cemetery mounds which may mark local social boundaries and territories (Charles and Buikstra 1983). A number of archaeologists have observed that the Late Archaic adaptation is a more sedentary lifeway, although not everyone agrees on why this came about (Caldwell 1958; Brown 1985). The following is a list of Late Archaic attributes supporting an inference of sedentism for the project region:

(1) The appearance of permanent as well as temporary shelters.

(2) A greater differentiation of site types.

(3) An increased reliance upon locally available lithic raw materials for stone tools.

(4) The domestication of squash, gourd, chenopodium, and sunflower.

(5) The differentiation in mortuary ritual for certain individuals and the establishment of corporate burial mounds or cemeteries.

(6) The use of stone vessels, particularly made of soapstone, which would be less portable than net bags and baskets.

(7) The acquisition of exotic material or artifacts through the participation in an exchange system.

(8) The habitation of base camps for longer periods of the year.

(9) The increase of energy invested in less portable aspects of the stone technology, and decrease of effort expended on tools with shorter use-lives.

Extensive exploitation of soapstone and the manufacture and transport of soapstone vessels took place during the Late and Terminal Archaic Periods (approximately 3000-800 B.C.). In the eastern United States, soapstone vessels are frequently associated with a variety of broad-stemmed projectile points which make up what has become known as the broad-stemmed or broad-point tradition (Dragoo 1976). In Cherokee County, South Carolina, numerous prehistoric soapstone quarries have been identified by Terry Ferguson (1980 and personal communication, 1995).

In the southeastern United States, the earliest appearance of the broad-point or broadspear technological tradition appears to be in the Savannah River Phase of North Carolina, South Carolina, and Georgia. The

Savannah River Phase was originally defined by Claflin (1931) and other researchers have since developed and expanded the application of the term. Coe (1964) considers Savannah River to be the terminal phase of the Archaic Period in North Carolina; he views the Savannah River Phase as a continuation and elaboration of the Middle Archaic Stanly Phase. In general, the Savannah River Phase is characterized by ground and polished stone artifacts, soapstone vessels, and broad-stemmed points. Fiber-tempered ceramics have also been associated in some contexts with Savannah River materials.

The Savannah River stemmed projectile points are the diagnostic artifacts of the Savannah River Phase. In the Southeast, Keel (1976) indicates that the Savannah River stemmed point type is identical to various regional types such as: Appalachian Stemmed (Harwood 1959), Benton Stemmed (Kneberg 1956) and Kays Stemmed (Kneberg 1956). In southern Tennessee, related broadspear types include Wade and Delhi points, both associated with the use of soapstone. In the Northeast, Ritchie (1969) suggests that such Northeastern Broadspears like the Lehigh, Snook Kill, Perkiomen, and Susquehanna points are related to Savannah River points. Significantly, soapstone vessels have also been associated with these Transitional Archaic industries as well.

Based upon these apparent similarities a well-developed, relatively homogenous, and inter-related lifeway has been proposed for the eastern United States during the Terminal Archaic (Dragoo 1976; Cook 1976; Ford 1974; Ritchie 1959, 1969; Turnbaugh 1975; and Witthoff 1959). According to Dragoo (1976) and Ford (1974) the broadspear tradition developed in the Southeast and spread northward as far as Maine. The use of soapstone vessels moved along with this technological tradition. Evidence supporting diffusion of soapstone from the Southeastern Piedmont and Appalachian Highlands is evidenced by radiocarbon dates from the southeastern Late Archaic Period (Ferguson 1980: Table 1). The earliest dated occurrences of soapstone use are from North Carolina, Georgia, and east Tennessee with dates around 3500 B.C. The latest dates in this sequence fall around 1500 B.C. Dated occurrences from various sites in southeast and central Tennessee range from around 1300 B.C. to around 900 B.C.

Woodland and Late Prehistoric Periods (500 B.C.-A.D. 1500)

The Woodland Period in eastern North America is marked by the elaboration of several characteristics that are manifested in the Late Archaic. These include increasing sedentism, greater cultural complexity, increased social exchange, intensified horticulture, greater population, and the addition of several new material traits. These traits include the development of ceramic technology and more elaborate mortuary practices, including various forms of human cremation and earthen burial mounds. The development of more elaborate mortuary practices, however, is less evident in Piedmont North Carolina and South Carolina than elsewhere in eastern North America.

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Early Woodland

The earliest Woodland culture defined for the North Carolina Piedmont is Badin. This archaeological culture is defined by the presence of sand tempered pottery with cordmarked or fabric impressed surfaces. These vessels are bowls or jars with subconical bases, and are considered to be relatively well made. As Coe (1964:27) observes:

> *It is significant to note that this earliest pottery, while crude in appearance, was nevertheless very well made and much more durable than much of the pottery that was to follow. The techniques of pottery-making, therefore, must have been well developed before they were introduced to the Indians of the Carolina Piedmont.*

Badin projectile points are large, rather poorly flaked, triangular forms. The recent reanalysis of the small stemmed projectile points from Late Archaic and the earliest Woodland components in the mountains and Piedmont of North Carolina by Oliver (1985:204-9) has demonstrated the validity of a Terminal Archaic stemmed point, labeled the Gypsy Stemmed, which continues into the earliest Woodland contexts. Blanton et al.(1986:10) place the Badin culture at around 500 B.C.

To the south of the project area, in the Savannah River drainage, are Early Woodland Stalling Phase sites. The Stalling Phase is characterized by a rich bone and antler artifact assemblage, polished stone artifacts, grooved and perforated net sinkers, soapstone disks, and fiber-tempered pottery (Trinkley 1989). The fiber temper is believed to be Spanish moss. Vessel forms include shallow bowls and wide-mouthed bowls, as well as deeper jar forms. The pottery is frequently molded, although coil fractures are occasionally present.

Stalling Phase sites are concentrated in the Savannah River drainage and in the coastal zone south of Charleston. To the north, the Tar River drainage in North Carolina has also produced Stalling ceramics. Large Stalling Phase sites in the Savannah River drainage are characterized by quantities of fresh water mussel or tidal oysters. Not all occupations of this phase are characterized by shellfish debris; non-shell midden sites, such as Clear Mount, generally have sparse artifact scatters, while the Love and Fish Haul sites evidence more intensive occupations.

The subsequent Thom's Creek Phase dates from as early as 2200 ± 350 B.C. at Spanish Mount to 935 ± 175 B.C. at Lighthouse Point Shell Ring. Both of these localities occur in Charleston County to the southeast of the project area. According to Trinkley (1989: 74), the Thom's Creek artifact assemblage is almost identical to that of the Stalling Phase. The most significant difference occurs in the ceramic temper. The Thom's Creek wares are characterized a lack of temper or the use of sand-temper. The Large

Savannah River stemmed points of the Stalling Phase undergo a size reduction in the Thom's Creek assemblages.

Thom's Creek sites occur throughout the coastal plains of North and South Carolina. A major concentration occurs along the Santee River and the central South Carolina coast. In the Savannah River drainage, there is a shift in site location away from riverine areas. Sites are more commonly found in the uplands and lack intensive evidence for shellfish exploitation.

Following the Stalling and Thom's Creek Phases are the Refuge and Deptford phases, both strongly associated with the Savannah River drainage. The Refuge Phase, dated between 1075 and 510 B.C., is concentrated on the Inner Coastal Plain, especially along the Santee River. The Refuge settlement pattern comprises small sites away from potential sources of shellfish. Refuge ceramics are similar in many regards to the preceding Thom's Creek wares. The paste is compact, consisting of grit or sand. Surface treatments include simple stamped, dentate stamped, and randomly punctated decorations.

In the Savannah River drainage, Deptford materials have been recovered (Trinkley 1989) similar to those in Georgia and northern Florida. The Deptford Phase in South Carolina extends to the Fall Line and northwards to the Neuse River in North Carolina. The earliest date for Deptford ceramics in South Carolina is 1045 $\pm$ 110 B.C. from site 38Lx5 in Lexington County to the south of the project area. Deptford sites occur in both coastal and inland settings. Coastal sites tend to be small, thin middens formed as a series of shell heaps. Inland sites are also small in size, lack shell, and are situated on the edges of swamp terraces.

The main aspects of Deptford culture include a coastal-riverine subsistence base, a religious complex and a base camp-satellite camp settlement pattern (Bense 1989). This subsistence system evidently correlates with the emergence of modern climatic conditions, and the development of swamps, wetlands, and marine resources. The base camps are marked by the presence of shell middens, and are located almost exclusively along the coast within maritime hammocks near brackish or fresh water (Bense 1985; Milanich 1994:116). The satellite camps are small special activity sites that are often located within interior stream valleys near major drainages. This settlement pattern began in the Late Archaic, and marked a definite shift in settlement toward the coastal lowlands. Deptford base camps tend to be strategically located in ecotonal settings. Living near the environments of both forest and the marsh, each supporting a rich and diverse natural community, provided a stable, multifaceted resource base. No doubt this diversity was the strong draw that brought the Deptford people to the coast.

Deptford culture is characterized by a series of paddle stamped, sand tempered ceramics and minority amounts of net and fabric impressed types. Among the Deptford vessels are large, deep, and cylindrically shaped cooking pots with rounded bottoms, and short cylindrical vessels; some Deptford vessels also have distinctive podal supports, a rare feature in South Carolina. Stone tools on Deptford sites are rare. Large stemmed projectile

points and medium sized triangular points, bifacially worked tools, small blades, and expedient flake tools have been recovered in very limited numbers. The lithic assemblage also includes ground and polished celts, limestone and sandstone grinding implements, hammerstones and whetstones. Bone tools, including points, awls, flakers, pins, and gouges, are occasionally recovered from Deptford sites. Oyster and clam shells were used as ladles, spoons, cups and dippers, whereas whelk shells were utilized as picks or axes.

Middle Woodland

According to Trinkley (1989), the Middle Woodland of South Carolina is characterized by short-term occupation and settlement mobility. During this period, a number of distinctive assemblage types have been recorded: Hanover, McClelanville or Santee, and Mount Pleasant. The ceramics of the Hanover (Wilmington is a regional variant) are almost exclusively characterized by crushed sherd temper comprising 30%-40% of the paste. Wilmington and Hanover wares are found from the Chowan River in North Carolina extending to the Georgia coast.

The Mount Pleasant series is characterized by a sandy paste with or without quantities of rounded pebbles. Surface treatments include fabric impressed, cordmarked, and net impressed; vessel forms include conoidal shapes, as well as hemispherical and globular bowls. These ceramics are found in North Carolina and extend southward to Savannah River. North Carolina dates for this type range between around 265 A.D. until 890 A.D. In South Carolina, dates have been obtained from Pinckley Island of around 55 A.D. Associated with Mount Pleasant ceramics are a small variety of the Roanoke Large Triangular points, sandstone abraders, shell pendants, polished stone gorgets, celts, and woven marsh mats. Apparently, both primary inhumations and cremations are known from this phase.

McClelanville and Santee series ceramics have been recovered mainly from the north central coast of South Carolina. These wares are sand[2] tempered with surface treatments consisting primarily of v-shaped stamping. Dates for the McClelanville type range between A.D. 500 to 800, while the Santee type may be somewhat later, dating between A.D. 800 to 1300.

The Piedmont Middle Woodland is evidenced by the development of Cartersville ceramics in Georgia. Cartersville fabric marked and check stamped wares, as well as Cartersville simple stamped varieties characterize the assemblages of this phase. These ceramics are confined to the Savannah River drainage in South Carolina. Another group of ware types sparsely scattered through the Piedmont in South Carolina are the Pigeon and Connestee ceramics. The former dates between around 300 B.C. to 100 A.D., while the latter are dated from roughly A.D. 100 to 600 (Trinkley 1989: 84). Temper for these wares consists of fine sand, while the surface treatments include brushed, simple stamped, cordmarked, and checkstamped finishes. Since there have not been any excavations at sites containing these wares, it is not yet clear whether the Piedmont Middle Woodland follows the same riverine subsistence orientation of the Early Woodland.

The Yadkin culture followed Badin in the North Carolina Piedmont and is considered to range from 190 B.C. to A.D. 60 (Blanton et al. 1986:10). The Yadkin material culture includes a smaller, triangular projectile point, which is better flaked and sometimes is "eared" (i.e., shallow side notching). Yadkin pottery is considered to represent an "obvious continuation" of Badin; wherein the same vessel morphologies are employed, and cordmarked and fabric impressed surface treatments continue to predominate. The temper is now crushed quartz, while a few linear check stamped, dentate stamped, and simple stamped varieties of decoration are observed (Coe 1964:30-2; Blanton et al. 1986:70).

Late Woodland

Apparently the Late Woodland of South Carolina may be characterized as a continuation of earlier Middle Woodland traditions. While major cultural changes occurred outside the Carolinas, within the project region development remained stable until the onset of the Southern Appalachian Mississippian complex.

In Georgia, the Late Woodland is represented by both Swift Creek and Napier ceramics, but these types are rare in the South Carolina Piedmont. Anderson and Schuldenrein (1983: 719-720) believe that the Cartersville ceramic types continued to be used in the Piedmont during the Late Woodland. However, Trinkley (1989: 85), notes the Piedmont-focused surveys have failed to identify large amounts of Cartersville ceramics. It is suggested that while survey bias may play a role in the Late Woodland "hiatus" in the region, it is also possible that the area was unoccupied, falling between the territories of the historic Cherokee and Catawba.

To the north of Cherokee County, the Uwharrie culture of Piedmont North Carolina is estimated to date from A.D. 600 to 1500 (Woodall 1984:2). Coe (1952a:307) considered the Uwharrie to be the "most homogeneous and widespread of all the pottery making cultures in the Piedmont." The Uwharrie may also be the most commonly attributed Piedmont pottery type (cf. Coe 1952a:307, 1964:32-3,62; Howell and Dearborn 1953:102,601-2,773: Woodall 1984:76-7; McManus 1985:7), although strangely enough the Uwharrie series (at the mouth of the Uwharrie River) has not been published. Coe (1952a:308) describes the ware as almost entirely crushed quartz tempered, with scraped interior surfaces. The exterior surface treatments were no longer employed. Unique to Uwharrie ceramics was the first use of incised decorations, usually a series of four or six parallel lines below the rim. Otherwise, Uwharrie pottery was considered the culmination of the Badin and Yadkin series.

Uwharrie projectile points are smaller and less wide than the Yadkin Triangular and exhibit slightly concave bases and lateral sides (Coe 1952a:308). Ground stone celts, roughly flaked hoes, pitted cobbles, gravers, denticulates, perforators, drills, and end scrapers complete the lithic assemblage (Howell and Dearborn 1953; Woodall 1984; McManus 1985).

Human burials are documented from several Uwharrie sites (Coe 1937, 1952a:307; Woodall 1984:56, 111-21; 1990:50-212; McManus 1985:3). These are

[redacted]

ually flexed in oval or circular pits. Where structures have been clearly stinguished they are described as small, circular houses, "constructed of small interwoven saplings, and the roof and sides were covered with bark and skins" (Coe 1952a:307). Bone and antler tools are definitely better represented than in previous cultural assemblages, but this may be due to the generally poor preservation of these kinds of artifacts in the Piedmont.

Late Prehistoric Period/Mississippian

The Late Prehistoric period is generally characterized by increased importance of horticulture, particularly maize and beans, and by increased socio-political complexity. In neighboring North Carolina, the local manifestation is referred to as the Pee Dee culture situated along the lower Yadkin and upper Pee Dee Rivers to the north and east of the project area.

The Pee Dee people lived in large compact villages protected by stockades situated close to the banks of the river. Their domestic houses were the usual oval type, but their public buildings were square or rectangular in plan with daub walls and peaked roofs of thatch. Some of their religious buildings were covered with earth, while others were placed upon the top of pyramidal mounds. They buried their dead in pits dug into the floor of houses dedicated for the purpose (Coe 1952a:309).

Other elements of the Pee Dee material culture inventory are small triangular and pentagonal arrowpoints, copper axes, copper-coated wooden earspools, distinctive clay pipes, shell beads, marine shell masks, shell gorgets, and variety of tools made of bone and mussel shell.

The settlement pattern was apparently hierarchical, with hamlets (Payne site?), villages (Leak site), and at least one known palisaded ceremonial center (Town Creek). The reconstructed Town Creek center is laid out on a southwest-northeast axis with a truncated, pyramidal mound to the southwest. The plaza contains evidence for open sheds and a busk or game pole, all of which would have ritual significance. Directly across the plaza from the main mound was a "small minor temple or priest's house--surrounded by a palisade" (Graham 1973:5). Along the periphery of the plaza were several round structures used only for mortuary activities.

The Pee Dee ceramic series includes a variety of vessel shapes (large burial urns, bowls, and jars in a range of sizes) which are well made and tempered with sand or grit. The surface treatment is predominantly complicated stamped, with concentric circles, filfot cross, herring bone, quartered circles, arc-angle, split diamond, and line block represented, in order of occurrence (Reid 1967:5-8). Minority surface treatments include: plain, burnished, textile wrapped, check stamped, cordmarked, and cob marked. Decoration is found in a horizontal pattern between the lip and shoulder of the pot. Decorative techniques include: nodes and punctations, pellets, rosettes, rim fillets, incising, and lip notching. A comparison of Town Creek ceramics with those from Fort Watson, Hollywood, and Irene demonstrated similarities that were "so similar--that a cultural relationship is postulated for the ceramic complexes at these sites" (Reid 1967:84).

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Protohistoric - Contact Period (A.D. 1540 - 1740)

The recent re-routing of the De Soto (1540) and Pardo (1566-8) explorations in the interior of the Southeast by DePratter et al. (1983) and Hudson et al.(1984) places both of these routes along the middle to upper portions of the Catawba River, across Swannanoa Gap, down the Swannanoa River, and down the French Broad into eastern Tennessee. This more easterly route raises the possibility of learning more about the social and political relations among the inhabitants of this portion of the southern Piedmont, if archaeological sites dating to the mid-16th century can be discovered and then excavated. Work along these lines has begun (Levy et al. 1989) and will undoubtedly continue into the future.

Presently, the archaeological evidence indicates that the groups inhabiting the Catawba Valley at this time are distinguishable from those of the central Piedmont. Furthermore, stylistic diversity in ceramics complements the ethnohistoric evidence of linguistic diversity, which probably "reflects population movement [prior to Pardo's entrada] due to the impacts of contact with the De Soto expedition" (Levy et al. 1989:164). While some of these stylistic patterns ultimately can be linked to the historic Catawba, who are known to English speakers by 1700, one or more ethnic groups may have been present in the Catawba Valley during the period of initial contact (Levy et al. 1989:165).

Our knowledge of the early histories of the Occaneechi, Sara, Keyauwee, Tutelo, Saponi, Eno, Sharkori, Sissipahaw, and Saxapahaw (collectively referred to as the Piedmont Siouan groups, but see Merrel 1987:26-7) have been greatly enhanced by an extension of the early work of Coe (1937,1952a), Dickens et al. (1986,1987), and others. While certain patterns expected from the earlier work have held (architecture, mortuary practices, and community layout), new insight has been gained in ceramic technology and subsistence practices. A synthesis of the post-1983 investigations by the University of North Carolina Research Laboratories of Anthropology is forthcoming.

Anglo-Americans in Cherokee County

Cherokee County covers approximately 394 square miles of land and is the most recently formed of the 46 counties in South Carolina. It was formed in 1897 from parts of Spartanburg, Union, and York counties (Johnson 1952). In the earliest political subdivision, Cherokee County was part of Craven County. In 1769, the District Act was passed and this provided for the division of the Province of South Carolina into six districts.

The mid-18th century witnessed the appearance of numerous settlers in the area between the Road and Pacolet rivers, and by 1770 it is suggested that 1500 Euroamericans inhabited what is now Cherokee County. Between 1780 and 1782, the area experienced a "civil war" between supporters of the Whigs and Tories. In January 1781, the battle of Cowpens signalled the defeat of the British and hastened their final decline in the South.

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After the Revolutionary War, there were no towns or villages developed until around 1830, at which time Limestone Springs and Cherokee Falls were established. In 1804, Michael Gaffney from Ireland settled in the area of the present town which bears his name. He opened a tavern at the crossroad where the avenues from Rutherfordton to York and Spartanburg to Charlotte crossed. The city of Gaffney expanded considerably when the Richmond and Atlanta Airline Railroad was built in 1873. A railroad station was established at Blacksburg in 1874, but the impetus for the development of the town came in the mid-1880s. This coincided with a movement to build a railroad line from Charleston to Cincinnati.

Farms and farmers increased dramatically in number toward the end of the 19th century along with the demand for cotton. In the north and central parts of the county, cotton mills were built at Cherokee Falls (around 1880), Gaffney, and Blacksburg. In 1900 about one-half of the agricultural land in Cherokee County was devoted to cotton cultivation. The remainder was used for corn, wheat, oats, cowpeas, sorghum, and sweet potatoes.

Iron manufacturing became a significant Up-Country activity as soon as Cherokee County was settled shortly after the defeat of General Braddock near Fort Duquesne in 1755 (Moss 1981). These early settlers, many from Pennsylvania, were of Scotch-Irish and German descent. By the time Independence was declared, the easternmost part of Ninety-Six District, including Cherokee County, was referred to as "The Iron District."

Shortly after the War of 1812, the iron industry was consolidated on the banks of the Broad River within Cherokee County. By 1837, three large concerns were operating within the region: the South Carolina Manufacturing Company, the Nesbitt Manufacturing Company, and the Kings Mountain Iron Company. The last organization was the earliest to be formed; sometime prior to 1822, Jacob Stroup and Edward Fewell began the industry near the mouth of King's Creek.

Another early entrepreneur, Moses Stroup, built a forge in the area of the Cherokee Ford Iron Works (38Ck2) as early as 1820. The proposed pipeline crosses this National Register complex in close proximity to Susan Furnace. In 1837, this concern appears to have become the Magnetic Iron Company with a $250,000 a year business.

The South Carolina Manufacturing Company was incorporated in 1826 by Andrew Moore, Abner Benson, and Wilson Nesbitt. It constructed part of its works on Hurricane Shoals and another part on Thicketty Mountain. In 1834, the company reconstructed several pre-Revolutionary War furnaces along Cherokee Creek and purchased over 25,000 acres of land in the region. New investors became involved and the influx of capital allowed for the construction of five furnaces, one train of rollers, three nail machines, and one hammer mill. Every year, the facility converted an average of 390 tons of iron to merchant bar iron and nails.

The Nesbitt Iron Manufacturing Company was the largest of the three and had an initial capital outlay of $100,000 in 1835. After organization, the company immediately purchased 8000 acres of land and set up a blast furnace

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in the area of People's Creek and Broad River. A village was begun, "Coopersville", named after Dr. Thomas Cooper, president of the University of South Carolina and a company stockholder. The South Carolina Legislature rechartered the company in 1836 with a capital stock of $300,000 and the company constructed a cold-blast furnace one mile up People's Creek in the immediate project region. The stock was increased to $1,000,000 within the next 14 years and several new furnaces were erected at a cost of $100,000 each.

Shortly after the outbreak of the Civil War, the recently rechartered Magnetic Iron Company was given a capital outlay of $250,000. The company rapidly had more contracts from the Confederate government than it could handle. Shot, cannonballs and other equipment were manufactured for the Confederate war effort. For example, some of the ironplating used in the ironclad warships was also produced at the Magnetic Iron Company's facilities. So important was iron production to the Confederacy, that ironworkers received military deferments.

The Magnetic Iron Company survived the war and financial setbacks due to an end of slave labor, lost military contracts, and the holding of valueless assets in worthless Confederate currency and bonds. In 1889, the company was rechartered as the Magnetic Iron and Steel Ore Company of Blacksburg. However, in just a few short years, at the turn of the century, all of the furnaces were defunct and ironworking in South Carolina was abandoned.

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RESEARCH DESIGN

A general review of the literature related to Cherokee County reveals that little is known archaeologically about this area of South Carolina. Indeed a review of the State Archaeological Site files reveals that Cherokee County has a remarkably low number (n=4) of newly recorded sites submitted between 1990 and 1994 (Derting et al. 1995). This number overall is less than 1% of the 4581 sites recorded during those years. In addition, only 83 archaeological sites have been recorded in the state archives for Cherokee County; this number represents 0.4% of the total of 17,240 sites recorded in South Carolina. For the 394 square mile area of Cherokee County, there are 0.21 sites recorded per square mile. While the low distribution of known sites may reflect certain physiographic features characteristic of Cherokee County, it almost certainly also reflects the lack of systematic survey in the region.

The research design of the present project was aimed at the *identification of all cultural resources* within the proposed right-of-way of Transcontinental Gas Pipe Line's 14.92-mile pipeline loop in Cherokee County. The methods by which the survey was conducted included the following procedures as suggested by the South Carolina Department of Archives and History (Niels Taylor, personal communication, 1995):

- Regional Cultural Overview Development
- Literature Review and Predictive Modelling
- Field Reconnaissance

The regional cultural overview builds a framework by which the patterns of prehistoric and historic activities within Cherokee County may be interpreted. This data provides a general synthesis of the main developments in the history of the county emphasizing significant trends of relevance to the survey.

The Literature Review (previous section) and Predictive Modelling (following section) targets more area-specific data related to the landscape crossed by the proposed pipeline loop. This information enables a field strategy to be developed which adequately addresses the intent to locate all cultural resources within the zone of impact. The results of the predictive modelling suggests that Archaic sites will most likely be encountered. Sites tend to be located within 500 m of a water source and the favored locations are heights-of-land such as hillslopes and ridgetops. This information suggests that all areas within 500 m of a water source are medium to high probability zones, provided that they are not wet or steeply sloped.

The proposed right-of-way was surveyed employing standard archaeological reconnaissance techniques that include interviews with local

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38Ck2

residents, pedestrian surface inspection, and shovel testing. In order to survey the project corridor a system of sample loci was used to record the field data. Depending on the degree of archaeological sensitivity for a given portion of the corridor, an entry was made at the appropriate interval (eg. ranging between 10 m and 30 m) on a field survey form. At each sample locus, a record was made of the distance from the last interval; the type of topography and vegetation; the method of sampling (e.g. surface survey, shovel testing, an auger probe or a combination of these); and the presence or absence of any cultural materials.

At the request of Transco, the width of the surveyed corridor was 100 ft, which also encompasses the area of most of the temporary workspaces. In areas where the temporary workspaces were wider, two parallel transects at 15 m were employed. Within the culturally sensitive area covered by the Cherokee Ford Iron Works (38Ck2), for example, three transects spaced at 10 m intervals were utilized.

In all areas of good surface visibility, a pedestrian surface reconnaissance was employed to identify cultural resources and collect archaeological material. In areas where the ground surface was obscured so the surface visibility was less than 80%, small shovel tests approximately 50 cm square were dug. The exact number and spacing of shovel tests were determined by the nature of the terrain, ground cover, and likelihood of site occurrence as defined by the predictive model. Testing in medium and high probability areas, for example those within 500 m of water, were at intervals of 10 m - 30 m, to a depth to establish sterile subsoil. Slopes greater than 15% grade and low, wet areas were not shovel tested, but subjected to a surface walkover. All matrix was screened through 1/4-inch mesh. Photographs, drawings, and maps were used, as necessary, to compliment and document the survey conditions and locations of cultural resources. Artifacts recovered during the fieldwork were washed, cataloged, and analyzed according to the laboratory methods described elsewhere in this volume.

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38CK10-15, 17-19, 29-35

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EXISTING DATA AND LITERATURE REVIEW

Introduction

To meet the needs of the client and fulfill the level of work deemed appropriate by the South Carolina Department of Archives and History, the scope of work included several requirements to be satisfied through fieldwork, analysis, and report preparation. First, potentially sensitive areas of site location along the proposed corridor are delineated on the basis of background research synthesized into a predictive model of historic and prehistoric site location. Second, the scope of the survey requires that the proposed project area be inspected for extant historic and prehistoric resources. Third, the results of the survey are evaluated in terms of expected results derived from the literature review.

Literature Review

A literature search was conducted to locate any previously recorded cultural resources within the project area, to identify any archaeological investigations that had taken place in the vicinity, and to provide information on the expected types and locational parameters of sites in the region. It included a review of the National Register of Historic Places (NRHP) and the archaeological site files at the South Carolina Department of Archives and History. The following list indicates sites recorded on the Blacksburg South, SC, Gaffney, SC, Pacolet, SC, and Pacolet Mills, SC 7.5-minute quadrangles and the distance to the project area.

Site	Distance to line (m)
Blacksburg South, SC quadrangle	
38Ck10	[redacted]
38Ck11	
38Ck12	
38Ck13	
38Ck14	
38Ck15	
38Ck17	
38Ck18	
38Ck19	
38Ck29	
38Ck30	
38Ck31	
38Ck32	
38Ck33	
38Ck34	
38Ck35	

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mplementing a predictive model of potential site location. The objectives of this suggestion are the prediction of culturally sensitive areas, using information derived from regional settlement pattern statistics, as well as evaluation of the model through field testing.

The usefulness of utility project studies rests on their ability to cross-cut a variety of environmental settings and thus expose a wide range of site types. Based on information gained from cultural and environmental background research, as well as a review of previous studies, certain parameters governing the suitability of different environmental settings for site locations have been recognized. These parameters served as guidelines for determining site potential for the project area.

Prehistoric Period

In general, the most important locational requirements of both prehistoric and historic habitation sites in northwestern South Carolina were proximity to water, slope angle, availability of natural resources, and well drained soil. Throughout time, many prehistoric favored living near large streams such as Broad River. In areas where floodplains were too narrow or otherwise unsuitable for occupation, terraces and slope benches above the drainages were sometimes inhabited instead. Prehistoric sites also frequently clustered around stream confluences, further indicating a desire for living near waterways that provided ample resources and an adequately large infrastructure for travel, trade, and communication.

Large or long-term habitation sites, characterized by relatively dense depositions of artifacts and cultural debris are less likely to occur on minor interior drainages. Ephemeral, low profile sites representing small, temporary or seasonal occupations and procurement stations, however, are scattered across the uplands in moderate numbers; often these places served as ancillary camps for groups who lived on larger streams nearby. Upland exploitative, portage and enroute encampments were often situated near rises between drainages. The height-of-land offered both immediate access to a variety of ecological zones and an easier route along the ridge backs than one which led a traveler across drainages.

Locational prerequisites for special purpose sites, places where the dead were interred, spots of religious significance, game drops, chert quarries and the like, may not have been as restricted as those for habitation sites. Cemeteries, as well as mounds and other earthworks, have been noted on floodplains, terraces, slope benches, and ridgetops. Petroglyphs and similar phenomena are sometimes found in caves and rockshelters, under rock overhangs, on rocky cliff faces, and even on large boulders. Sites where short-term subsistence activities were performed usually go undetected, although many finds of isolated projectile points are probably correctly identified as the results of hunting incidents.

A total of 72 prehistoric archaeological sites, with sufficient data for predictive modelling, are recorded on the following USGS topographic maps: Blacksburg South, SC, Gaffney, SC, Pacolet, SC, and Pacolet Mills, SC.

[redacted]

[redacted]

38CK1, 44-45, 53,
38SP 11-14, 17-21, 23, 52-54, 56-58, 61-65, 67-68, 70-75
38UN 12

Site	Setting	Water Prox.(m)	Chronology	Elevation(ft)
Pacolet, SC quadrangle				
38Ck01	ridgetop	[redacted]	Archaic	640
38Ck45	hillslope		Archaic	660
38Ck53	hillslope		Archaic	650
38Sp11	hillslope		Archaic	610
38Sp12	bench		Archaic	560
38Sp13	floodplain		Archaic	490
38Sp14	hillslope		Archaic	630
38Sp17	ridgetop		Archaic	670
38Sp18	hillslope		Archaic	570
38Sp19	bench		Archaic	630
38Sp20	hillslope		Archaic	570
38Sp21	hillslope		Archaic	580
38Sp23	hillslope		Archaic	660
38Ck44	ridgetop		Archaic	650
38Sp52	ridgetop		Archaic	670
38Sp53	terrace		Archaic	610
38Sp54	hillslope		Archaic	670
38Sp56	hillslope		Archaic	590
38Sp57	bench		Archaic	630
38Sp61	hillslope		Archaic	570
38Sp62	bench		Archaic	580
38Sp63	bench		Archaic	600
38Sp64	hillslope		Archaic	630
38Sp65	ridgetop		Archaic	670
38Sp67	ridgetop		Archaic	640
38Sp68	ridgetop		Archaic	620
38Sp70	hillslope		Archaic	510
38Sp71	hillslope		Archaic	540
38Sp72	hillslope		Archaic	630
38Sp73	bench		Archaic	610
38Sp74	bench		Archaic	640
38Sp75	hillslope		Archaic	590
38Sp156	terrace		unk. prehis	490
Pacolet Mills, SC quadrangle				
38Sp58	hillslope	[redacted]	L. Archaic	540
38Un12	hillslope		unk. prehis	540

Tabulating the results of the above data (see table below) reveals that the most commonly occurring prehistoric site type (n=32) is of unspecified Archaic affiliation. These occupations, which include 38Sp11, 38Sp12, 38Sp13 and 38Sp14, are generally open air lithic scatters in prehistoric soapstone quarries. Other sites with identifiable cultural materials include five multicomponent localities, containing both Archaic and Woodland deposits. Five Woodland sites were identified, four Early Archaic sties, five Late Archaic sites, and six Middle Archaic sites. A total of 20 sites

[redacted]

[redacted]

have no identifiable components and hence are labeled unspecified prehistoric. These are generally open-air lithic scatters composed of quartz debitage.

Cultural Component	N
Middle and Late Archaic	2
Middle Archaic	3
Late Archaic	2
Archaic	36
Multicomponent	6
Unspecified Prehistoric	20
Total	69

Most of the above recorded prehistoric sites (n = 51) occur within 500 m of a water source (see following table). Close proximity to water sources is frequently a prominent factor in determining the location of prehistoric sites.

Distance from H_2O (in m)	N
Adjacent	0
1 - 50	8
51 - 100	6
101 - 150	2
151 - 200	6
201 - 250	4
251 - 300	6
301 - 350	5
351 - 400	4
401 - 500	10
501 - 600	6
601 - 700	2
701 - 800	7
801 - 900	2
901 - 100	0
1001 - 1500	1
Total	69

The topographic settings of prehistoric sites reflect to a large extent the preference for occupation on a relatively level area close to a water source. As noted above, this type of setting is commonly chosen by prehistoric peoples for locating occupation zones. Also favored locales are heights of land overlooking streams or floodplain areas which may provide superior viewpoints for hunting game. The following list indicates the topographic settings of the previously recorded sites.

[redacted]

38 CK2, 67-68

Topographic Setting	N
Floodplain	2
Terrace	3
Bench	10
Hillslope	26
Ridgetop	28
Total	69

The elevation data for the 69 sites in this dataset fit neatly within the topographic setting and distance to water data discussed above. It is apparent that the almost total dominance of ridgetop and hillslope settings in the sample creates potential diversity in elevation data. Examination of elevation contour data on the project quadrangles suggests that few floodplain settings exist at less than approximately 530 ft amsl and that most ridgetop settings occur at elevations of between 600 and 800 ft amsl. Most of the recorded prehistoric sites cluster between 600 and 800 ft amsl. Lower elevations associated with the terrace and floodplain locations frequently fall between 500 and 600 ft amsl. These areas were generally marshy and swampy, as noted during the fieldwork (see below), and were probably not favored for prehistoric occupation as indicated by the data currently available at the Office of State Archaeology.

Other research in the general project vicinity includes a survey of prehistorically (and historically) utilized soapstone quarries (Ferguson 1979), in which Archaic peoples procured soapstone for use in making bowls and other containers. Soapstone is a relatively easily worked ultramafic rock prevalent in Cherokee and Spartanburg counties.

Ferguson and Cowan (1986) reported on the beginnings of the industrial revolution in the southeast in "The Early Ironworks of Northwest South Carolina." In this report they discuss the significance of the Cherokee Ford Iron Works (38Ck2), part of an NRHP thematic district, Susan Furnace (38Ck67), and Ellen Furnace (38Ck68) and their importance in providing the elements necessary for the production of pig iron from the raw iron ore present in that portion of the state.

The extensive database presented above on known sites suggests that all ridgetop and hillslope areas within 500 m of a water source are high sensitivity zones, and that sampling should be most heavily weighted toward these areas (e.g. 15-20 m interval shovel testing). There is always the potential that prior site locating activities were non-random and directed toward ridges and streams and their margins in the first place. For this reason, a significant search for sites should also be conducted throughout the project area, but with the recognition that the probability of site location will decrease at distances beyond 500 m of a water source. Thus, we could speak of a high probability zone within 500 m of water sources, and a medium probability zone on relatively level areas more than 500 m from water. Slopes greater than 15% grade and areas of poor drainage would have a low probability for locating prehistoric sites.

Historic Period

With the addition of the rich data sources of the historic period, site location modelling becomes more fine-grained, requiring additional variables while retaining many site location prerequisites in common with prehistory. The weighting of variables in order to generate a useful predictive tool is still subject to ongoing debate. The pattern of Euro-American settlement varied by period, ethnicity, predominant local economic strategies, available transportation systems, and military constraints. The following discussion describes each variable in turn, in order to account for local site location by reference to a larger historic context and cultural process.

Each consecutive frontier of the American conquest can be characterized by the following sequence of development; an initial period of Exploration (Frontier), followed by rapid Expansion (Settlement), which eventually required administrative organization and a more or less stable and permanent economic base (Consolidation and Intensification). The distribution and nature of Euro-American archaeological sites varies with the distinct requirements of each period of development.

Frontier sites were by definition literally few and far between, placed along known aboriginal trade routes, or points of easy access and defense such as river promontories. The initial period of exploration in every region included reconnaissance of local resources, interaction with native populations, and recording transport routes. Stanley South has defined a statistically distinct artifact assemblage for frontier sites, which includes a high percentage of alcoholic beverage containers, munitions, and pharmaceuticals. The sites themselves are often ephemeral encampments, with few potential architectural features. Since South's groundbreaking work, regional frontier patterns have been developed for the Carolinas, the Ozarks, and the Ohio River Valley.

Initially, aboriginal trails interconnected prehistoric settlements and areas where natural resources were exploited. Early Euro-American pioneers followed these small trails to habitable locales, converting many of them progressively to wagon roads, turnpikes and interstate highways. As a result, some continuity of settlement pattern does exist from prehistoric into historic times.

As knowledge of transport routes and potential resources increased, so did the number of incoming settlers. Settlers often preceded official land title offices or treaties by some time, with a concomitant increase in tensions over land claims between settlers and Native Americans, or between the settlers themselves. Settlement pattern was variable; if resources were extensively distributed (such as animal furs or the water-borne tobacco industry) the result was a decentralized settlement pattern. Settlement patterns based on the requirements of the fur trade have been extensively studied. If settlement was inspired by religious zeal, organized land development companies, or a clear and present military threat, the resulting settlement pattern was far more centralized.

For the most part, early settlements were subsistence economies, which, if successful, gradually engaged in trade on a regional scale. In the following period of intensification, the scope of trade networks grew to include a national, and eventually a world consumer market. Local participation in a growing world market economy may be traced in the local archaeological record.

At first, Euro-American settlers occupied only the valleys of major rivers and their larger tributaries, but soon they spread inland. Mills were built along nearly every sufficiently powerful stream, and the establishment of ancillary shops and services followed shortly. Mill sites provide a useful topographically predictable touchstone for reconstructing regional development. Roads were constructed to provide access to mills, and population clusters soon developed at major crossroads in the highway network. After roads were established, people situated their houses and farms further from large drainages and closer to watersheds, or heights-of-land.

As population and industry intensified, so did the need for civic regulation; the land was shired into townships, counties, territories and states, each with an administrative center located at a convenient transport nexus. When an area came under formal administration, settlements began to acquire a "paper trail" which can often still be traced. Historic maps displaying roads are a particularly useful research tool for assessing the probability of historic-period occupation for specific project areas. Once a site is located, tax assessments, censuses, and probate inventories may provide information on the occupants themselves.

A predictive model of historic settlement pattern should target those resource characteristics of the physiographic province attractive to initial settlement and subsequent development. Targeted resources will vary with the historically known economic strategies practiced by the settlers. Sought-after resources may include particular farming soils, minerals, and indigenous plant or animal communities. Good farming soils are the product of geological weathering, previous biological communities, and human activity. It is possible to use current soil surveys to predict desirable settlement loci of the past. Desirable soils were often identified by the types of native plants encountered at initial contact; thus the native biome has been used to provide hints on historic settlement location. Extractive sites, such as quarries, coal mines, and logging camps were naturally located near their target resources. Manufacturing sites such as potteries, iron smelting furnaces, lime kilns, coke ovens, and brickyards were usually positioned near a source of raw material as well as an abundant water supply.

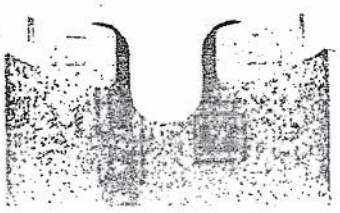
Particular resources would have been targeted at different periods in a region's development. In the frontier period, animal resources and extremely high-value mineral resources would have attracted poorly funded entrepreneurs. Following the decline in animal populations and the initial disappointment with the evident lack of wildly productive gold mines, settlers would temper their expectations, and target the more stable long-term resources of the soil. In the period of intensification and

38CK77-79, 67
Pacolet 16, 44, 113-114, 66
38UN317

Site	Setting	Water Prox.(m)	Chronology	Elevation(ft)
Pacolet, SC quadrangle				
38Sp113	floodplain	[redacted]	Hist. Ironworks	540
38Sp44	bench		19th Century	630
38Sp114	floodplain		Hist. Ironworks	570
38Sp16	hillslope		Rev. War Cemetery	600
38Sp66	hillslope		19th Century	600
38Sp44	bench		19th Century	630
38Sp114	floodplain		Hist. Ironworks	570
Pacolet Mills, SC quadr[redacted]				
38Ck78	hillslope	[redacted]	Historic	475
38Ck79	hillslope		Historic	470
38Ck77	hillslope		Historic	610
38Un317	hillslope		Historic	550

As with the prehistoric sample, the historic site database also shows considerable uniformity. A majority of sites are located on ridgetops or along hillslopes. Most of the sites are either 19th century, early 20th century, or mixed. Exceptions to these are the early ironworks sites along or near the Broad River (i.e. Susan Furnace 38Ck67). Some of the sites include standing structural remains, however most of these sites are at best foundation remnants and/or artifact (sherds and glass) scatters. Elevation and distance-to-water data are in keeping with the ridgetop locations of these sites; and suggest that these sites reflect the later in-filling of upland areas as noted in the predictive model statement, above.

Valuable tools for use in assessing historic period utilization of the landscape are historic atlases. Review of maps for Spartanburg County (Cherokee County was not formed until 1897) (McCollough 1887) shows that not many residential structures or roads had been built in the vicinity of the project area (Figure 8).



[redacted]

38CK 2, 12, 14, 17-19, 29, 34, 42, 48, 57, 62, 67-69, 73

consolidation, enough capital became available to extract relatively low-value, labor-intensive commodities such as iron, lime, timber, or cattle. There was an increased emphasis on marketing products within regional and national trade networks.

The problem of getting bulky commodities to market spurred the development of ever-cheaper systems of transportation throughout the 18th and 19th centuries. By the late 18th century, unmaintained trade roads were giving way to privately maintained toll roads or turnpikes. Villages grew up at crossroads and toll-booths. The cost per pound/per mile of overland shipping compared to water-borne transport was prohibitively uncompetitive along the coasts or river systems. Between 1820 and the 1850's a system of canals was created connecting navigable waterways throughout much of the eastern United States. Small communities serving the canal trade grew up at terminal points and major canal locks. By the 1850's the canals could no longer compete with steam-driven railroad services, which for the first time provided inexpensive bulk consumer products and raw materials to areas inaccessible by water transport. The cheaper cost of transport made it possible to extract resources from more remote areas, while entire cities were founded along the frontage of railroad tracks. As was the case with the earlier canal locks, villages sprang up at service points (particularly switch yards and watering stations) along the tracks.

Twenty eight historic period sites were located on the Blacksburg South, SC, Gaffney, SC, Pacolet, SC, and Pacolet Mills, SC quadrangles in the South Carolina site files for the project vicinity:

Site	Setting	Water Prox.(m)	Chronology	Elevation(ft)
Blacksburg South, SC quadrangle				
38Ck14	ridgetop	[redacted]	Late 1800's	680
38Ck12	hillslope		Historic	590
38Ck19	hillslope		19th Century	540
38Ck17	ridgetop		19th Century	610
38Ck18	ridgetop		19th Century	610
38Ck34	ridgetop		19th Century	710
38Ck42	hillslope		19th Century	730
38Ck70	floodplain		Hist. Ironworks	530
38Ck2	terrace		1748 Col America	570
38Ck67	terrace		Hist. Ironworks	580
38Ck68	terrace		Hist. Ironworks	665
38Ck57	hillslope		Hist. Cemetery	670
38Ck29	terrace		Historic 20th	695
38Ck62	ridgetop		Historic 20th	750
38Ck48	ridgetop		Historic 19th	735
Gaffney, SC quadrangle				
38Ck69	floodplain		Historic Mining	700
38Ck73	floodplain		Hist. Ironworks	730

[redacted]

[redacted]

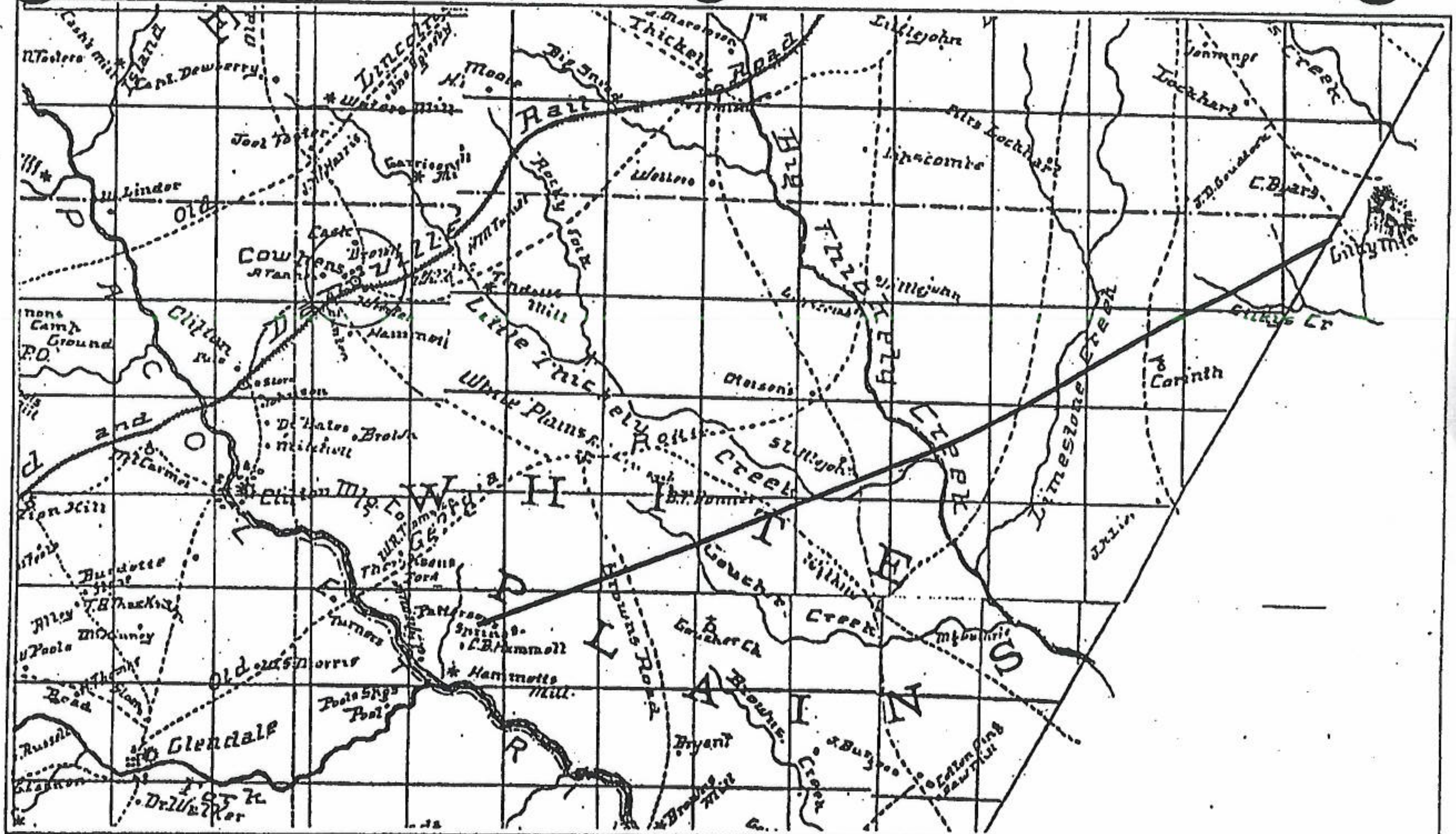


Figure 8. Portion of McCollough's (1887) historic atlas of Spartanburg county South Carolina, showing the proposed project corridor.

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Field Methods

The entire project area was surveyed employing standard archaeological reconnaissance techniques that include interviews with local residents, pedestrian surface inspection, and shovel testing. The following paragraphs describe these techniques as implemented for this survey. In all areas of adequate surface visibility, shovel testing, augmented by pedestrian survey was used to identify cultural resources and collect archaeological material. In areas where the ground surface was obscured so that surface visibility was less than 80%, small shovel tests, approximately 50 cm in diameter, were dug along the centerline of a transect at intervals ranging from 32 to 100 feet (10 m - 30 m) to a depth to establish sterile subsoil, where possible. Transects were ideally placed at 10 m - 30 m intervals so that a uniform testing pattern resulted. However, vagaries of terrain and vegetation cover may on occasion have forced modification of this interval. Areas of high archaeological sensitivity, defined in this case by the predictive model as areas within 500 m of water on ridgetops, and hillslopes were especially carefully examined. Positive shovel tests were intersited with additional units in a cruciform pattern at selected intervals ranging from 5 m to 15 m, and positive surface sample loci resulted in intensive surface searches within 5 m to 10 m of each find.

All excavated sediments were screened through a 6 mm (1/4-inch) mesh to ensure the recovery of even the smallest artifacts. Slopes with a grade of greater than 20 percent and low, wet areas were not shovel tested. Photographs, drawings, and maps were used, as necessary, to complement and document the survey conditions and locations of cultural resources.

Background information on the environmental setting for the area and data on the cultural resources gathered during the literature search were incorporated as discussed above into a predictive model focused on sensitive areas that could potentially contain archaeological sites. The survey strategy was developed to identify all cultural resources within the proposed project area.

Laboratory Methods

The following laboratory methods are utilized by the Cultural Resources Program of 3D/Environmental during the preparation and analysis of artifacts recovered during Phase I survey. Artifacts are washed, sorted, labeled, and rebagged at the 3D/Environmental Cincinnati laboratory.

Historic Materials

Historic artifacts are sorted by functional groups such as architectural and kitchen materials. Morphology and decoration further defines each artifact. This type of analysis serves to define site function and typology. While rural homesteads often do not produce a large quantity of artifacts, the types recovered still represent a distinctive assemblage. References such as Miller (1980), Price (1982), Lofstrum et al. (1982), and McCorvie (1987) provide source material for typological and morphological

[redacted]

descriptions. The following list provides definitions of the more common ceramic and glassware types, as well as their decorations, recovered in 19th century and early 20th century contexts.

Historic ceramic types

1) Pearlware: Pearlware was introduced after 1779 by Josiah Wedgwood and was a refined earthenware with a white paste. Pearlware had an increased flint content and cobalt was added to the glaze to mask the natural yellowish tint of the paste. The addition of cobalt gives pearlware a bluish green cast, particularly in areas where the glaze has 'puddled'.

2) Whiteware: This ceramic type is a refined earthenware with a white paste, clear glaze and no tinting. Whiteware was developed as a direct successor to pearlware and became popular after ca. 1820-1830. The paste is generally more porous than that of ironstone (see below) which generally possesses a harder, more compact paste.

3) Ironstone: Ironstone is a highly refined opaque earthenware with a clear glaze. It is typically very dense, non-porous, and may be indistinguishable from whiteware. The peak of production for the 'heavy bodied,' dense ironstone type is between 1840 and 1885, with manufacture all but ceasing by 1920.

4) Stoneware: The stonewares are characterized by a compact, fine grained and non-porous, opaque body fired to higher temperatures (1300° F) than the earthenwares. They are manufactured from naturally vitrifying, dense clays which produce a fine-grained, homogenous texture with a hard body. Stoneware was not a refined ceramic, being better suited for utilitarian purposes.

5) Porcelain: Porcelain is a highly vitrified ceramic ware with a white, translucent, almost glassy body. Porcelain is divided into two varieties, hard and soft, based upon the density and raw materials of the paste. Soft paste porcelain contained a vitreous frit of white sand, gypsum, soda, alum, salt or nitre. It was not fired to as high a temperature as the hard paste variety which contained only white china clay and feldspar.

The following list documents the dates when many of the above-mentioned historic period ceramics were manufactured and used.

Attribute	Range	Mean	Reference
Plain Pearlware	1780 - 1830	1805	South 1977

[redacted]

Attribute	Range	Mean	Reference
Whiteware			
Undecorated	1830 -		Price 1982
Annular banded	1830 - 1860	1845	Price 1982
Blue shell edge	1830 - 1860	1845	Lofstrum et al.
Green shell edge	1830 - 1860	1845	Price 1982
Cut spongeware	1845 - 1860	1855.5	Lofstrum etal. 1982
Handpainted - floral	1840 - 1860	1850	Lofstrum et al. 1982
Ironstone			
Plain	1840 -		Wetherbee 1980
Embossed	1840 - 1907	1873.5	Gates and Ormerod 1982
Yellowware	1830 - 1960	1895	Ketchum 1987

Historic ceramic decorations

1) Underglaze transfer print: The use of an underglaze transfer print to decorate ceramics was developed in the early part of the 19th century. The designs are typically quite intricate and include floral motifs, as well as 'exotic' oriental scenes. The earliest transferwares were blue, but a variety of colors were introduced after ca. 1825 as illustrated below:

Transferware Color	Range	Mean	Reference
blue	1820 - 1860	1840	Majewski and O'Brien 1987
red	1828 - 1850	1839	"
green	1830 - 1850	1840	"
black/brown	after 1825	-	"

2) Flow blue: Flow blue decoration was a variant of transfer printing where the design flows or blends with the glaze. The result of this effect is a fuzzy or blurred decoration which is caused by the introduction of a volatile liquid, such as lime or ammonia chloride, during the final firing of the vessel. Flow blue decorated wares date from 1830-1860, with a peak of production between 1850-1860.

3) Spongeware/Spatterware: The production of spongeware involved the application of a coloring agent with a modified sponge. The sponge was dipped in a color or variety of colors and used to produce blotches, whirls, or bands. Varying date ranges have been applied to this form of decoration, but 1840-1860 is the most commonly accepted. Spatterware is a variant of

[redacted]

spongeware in which the color is 'spattered' over the surface of the vessel. It has a slightly longer date range than spongeware, extending between 1840-1880.

4) Handpainted underglaze: Handpainted decorations, usually floral motifs, were utilized on refined earthenwares including pearlware, whiteware, and ironstone. On the earlier ceramic vessels the colors included blue, ochre, and green. Later vessels, dating between 1840-1860, were more often polychrome with a wider variety of colors such as green, brown, yellow, black, red, blue, and pink.

5) Banded: Banded decorations were commonly applied to whitewares and ironstone with the use of a quill. This type of decoration, referred to as annular banded, consists of horizontal or concentric bands of color applied to the slip. Annular banded whiteware has a median date of production of 1845 (Price 1982).

6) Molded or embossed wares: Included in this group are the edge decorated pearlwares and whitewares such as the "shell-edge" or "feather edge" types. These ceramic wares have an embossed pattern applied to the edge which was then covered with a cobalt blue or forest green color. Blue and green shell edge ware have a date range of 1830-1860, with a median date of production of 1845 (Lofstrum et al. 1982). Plain molded or embossed designs were utilized on whiteware and ironstone, especially in the middle part of the 19th century. Large embossed ironstone vessels, with floral or naturalist designs such as sheaves of wheat, have a median date of production around 1873 (Gates and Ormerod 1982).

Historic glassware

In terms of providing chronological information on 18th or 19th century sites, glassware is as valuable as ceramic technology and decoration. Basically, there are two attributes which can provide information as to the approximate age of container glass: color and manufacturing technique. The table below illustrates some of these attributes with their date range.

Attribute	Range	Mean	Reference
Improved tooled bottle closures			
Cork	1870 - 1915	1892.5	Deis 1981
Crown	1905 - 1920	1912.5	Deis 1981
Milk Glass lid liner	1870 -		McCorvie et al. 1989
Amethyst or solarized glass	1880 - 1920	-	McCorvie et al. 1989

[redacted]

Prehistoric Lithics

Prehistoric lithic artifacts are sorted by artifact type, for example projectile point, based on standard references such as Bell (1958), Ritchie (1969), and Justice (1987). Debitage categories are based upon classification schemes currently used by both Old and New World prehistorians (Bordes 1961; Frison 1974; Tixier et al. 1980; Oliver 1985). The first level of analysis involves separating flakes, cores, and fragments (shatter and 'chunks' of raw material) and listing the presence or absence of features such as cortex. The flakes are then further subdivided, in as much as is possible, into groups which more specifically identify the reduction sequence they belonged to. The following terminology is applied to the classification of prehistoric artifacts recovered in cultural resources surveys.

Terminology related to debitage

Blank: When a flake is detached from a block of raw material it may be regarded as waste, utilized without modification, or used as a 'blank' to be retouched into a tool (e.g. a scraper or denticulate).

Chip: This term describes tiny flakes (<1 cm in length) which are detached during several different types of manufacturing trajectories. First, they can result from the preparation of a core or biface edge by abrasion, a procedure which strengthens the platform prior to the blow of the hammer. During biface manufacture, chips are detached when the edge is 'turned' and a platform is created in order to remove longer, more invasive flakes. Tiny flakes of this type are also removed during the manufacture of tools like end-scrapers.

Core: A core is a block of raw material, other than a biface preform, from which flakes have been detached. Cores may be produced by careful preparation or consist of a block of material from which only a few flakes have been detached.

Debitage: The French term *debitage* has two related meanings: 1) it refers to the act of intentionally flaking a block of raw material to obtain its products, and 2) it refers to those products themselves. Commonly, the term debitage is used by prehistorians to describe flakes which have not been modified by secondary retouch and made into tools.

Flake: A flake is a product of debitage which has a length/width ratio of 1 : 1 (de Sonneville Bordes 1960). In this report there are two separate categories of flakes and the first is for those pieces to which a specific reduction sequence can not be assigned. With these pieces it is impossible to tell whether they have been detached during simple core reduction or biface manufacture. For example, cortical flakes initially removed from a block of raw material can appear similar in both core and biface reduction.

[redacted]

The second group of flakes result from biface reduction and are described as follows:

A) Biface initial reduction flakes are typically thick, have cortex on part of their dorsal surfaces, and have large plain or simply faceted butts. There are relatively few dorsal scars, but these may show removals from the opposite edge of the biface.

B) The thinning/shaping flakes result from shaping the biface, while its thickness is reduced. These flakes generally lack cortex, are relatively thin, and have narrow, faceted butts, multidirectional dorsal scars, and curved profiles. Thinning flakes are typically produced by percussion flaking.

C) The finishing or trimming flakes are produced during the preparation of the edge of the tool. These flakes are similar in some respects to thinning flakes, but are generally smaller and thinner and can be indistinguishable from tiny flakes resulting from other processes such as platform preparation. Biface finishing flakes may be detached by either percussion or pressure flaking.

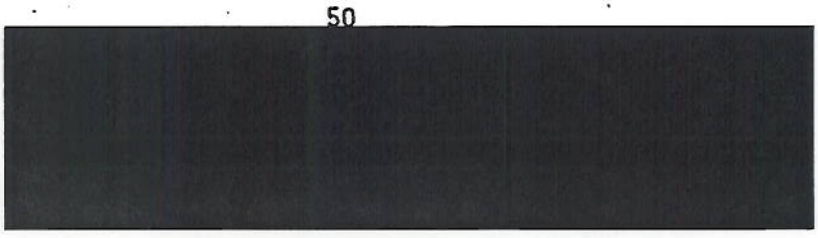
The categories used to describe biface reduction follow in a broad sense those proposed by Newcomer (1971), Callahan (1979), and Bradley and Sampson (1986). It should be noted, however, that rigid schemes of reduction such as those cited, which break up into stages a process that is in fact an unbroken continuum from raw material selection to the final abandonment of the tool, can only approximate the course of a manufacturing trajectory used by prehistoric knappers.

Shatter: Shatter can either be produced during the knapping process or through natural agents. Naturally occurring shatter is usually the result of a thermal action shattering a block of chert. During debitage, shatter results from an attempt to flake a piece of chert with internal flaws and fracture lines. For the purposes of this volume, shatter is defined as a piece of chert which shows no evidence of being humanly struck, but may nonetheless be a waste product from a knapping episode.

Terminology related to retouched tools

Biface: A biface is any retouched tool, partially completed or finished, which has been flaked by percussion or pressure flaking over both of its surfaces (see bifacial retouch).

Retouch: This term is taken from the French *retouchee* and refers to the modification of a block of raw material (biface manufacture) or flake by a single removal or series of removals, thus transforming the piece into a 'tool'. Retouch shapes the original blank and its edges and can take the form of invasive bifacially detached flakes on a projectile point or small, tiny flakes on the edge of an end-scraper. Retouch may also be caused unintentionally due to utilization; in this case retouch forms as a result



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of an activity and not by a process of intentional modification before use. Utilization retouch is typically discontinuous along an edge.

Retouched flake or piece: This category of retouched tool is represented by flakes, or badly broken artifacts, which have limited amounts of retouch and are not standardized tool forms. The retouch on these artifacts is highly varied in type, inclination, and position.

Tool: For the purposes of typological description only, a tool is any flake which has been shaped and modified by secondary retouch. In the case of biface manufacture, a block of raw material may be transformed directly by retouch into a tool such as a knife or projectile point. The term tool, therefore, is used only for descriptive purposes to separate those artifacts which have been retouched from the debitage or unretouched pieces. Finally, it should be recognized that the latter group of objects may well have functioned as tools, for example unretouched flakes with good cutting edges are effective for skinning and butchery, but this is difficult to determine without a microwear analysis.

Finally, the artifacts will be returned to the landowners per their request.

[redacted]

[redacted]

SURVEY RESULTS

The archaeological reconnaissance for the proposed 14.92 mile natural gas pipeline and workspace areas in Cherokee County, South Carolina was conducted between 11 and 29 July 1995. The field reconnaissance was supervised by Dr. Christopher A. Bergman, Ph.D. and conducted by Mr. Gary Perkins, B.A., assisted by a team of experienced field technicians.

The project right-of-way (ROW) and supplemental work areas were subdivided into twelve survey segments (Figures 9-33) to facilitate the recording of field data. Segments were generally numbered as survey proceeded from east to west, although the numbering of supplemental work areas and timing of access to various properties by the archaeological field crew resulted in non-consecutive transect numbers along some portions of the ROW. The length of segments varied depending on topographic and environmental conditions encountered during field survey. Due to the width of the proposed ROW (100 feet), one transect of sample loci were recorded for the proposed corridor. Exceptions to this occur at certain additional temporary work spaces (ATWS) which expand the corridor beyond 100 feet or in specific areas surveyed at intervals less than 30 m.

A variety of techniques were used to determine the existence of any cultural resources along the proposed ROW. Archival research and informant interviews suggested the presence of cultural resources in the general region in which the pipeline will be situated. Field reconnaissance techniques included the following: observation of culturally modified vegetation patterns, visual scrutiny of cleared and eroded surfaces, and shovel testing in areas of insufficient surface visibility. Representative photos of the project area are included as Appendix B.

Segment Descriptions

Segment 1

Segment 1 began adjacent to a metering station at Cherokee Falls Road and ended at the Broad River. This segment extended for approximately 2407 m (7900 ft) and is wholly contained within the Blacksburg-South, SC quadrangle. A total of 134 sample loci (SL) were recorded for this segment.

Segment 1 began adjacent to a Transcontinental Gas Pipe Line metering station on the west side of Cherokee Falls Road. Shovel testing (at 15 m intervals) was conducted at SLs 2, 3, and 5 to the north of the existing gas pipeline corridor. These tests revealed 20 to 25 cm of reddish brown sand loam underlain by reddish brown sandy clay. Disturbance relating to the construction of the metering station was encountered at SL 1 and 4. Mottled soil horizons were discovered from SL 6 to SL 13, resulting from removal of trees as well as regrading during construction of the original pipeline corridor. Shovel testing continued in an open grassy field from SL 14 to SL 57, except in areas of steep slope (> 20%) and at small field drainages. These intervening areas were subjected to pedestrian survey in

[redacted]

Figure withheld under Section 304 of the Archaeological Resources Protection Act (16 U.S.C. 470w-3(a))

Figure withheld under Section 304 of the Archaeological Resources Protection Act (16 U.S.C. 470w-3(a))

38Ck2

lieu of shovel testing. The shovel tested area revealed 20-30 cm of light brown sandy silt or yellowish sandy clay underlain by strong brown sandy clay or strong brown and yellow sandy clay. No cultural material was recovered from any of these areas.

Steep slopes and small drainages extend from SL 58 to SL 83 (at 20 m intervals). These areas were thoroughly surveyed through the employment of pedestrian transects. Shovel tests at SL 70 and 74 revealed gravel in disturbed mottled soil horizons. An access road was crossed at SL 84. Shovel testing was conducted from SL 85 to SL 89. These tests revealed 10-20 cm of light brown sandy silt overlying yellowish brown sandy clay. Very steep (>20%) slopes, along the wooded corridor edge, extend from SL 89 to SL 99 before the proposed corridor crosses the existing corridor (SL 100 - SL 114). Pedestrian survey of these areas failed to produce cultural material. Shovel testing in a mixed deciduous and coniferous forest revealed eroded topsoil and yielded light brown sandy clay. Eroded pastureland descended to an access road (River Road) at SL 129. The very narrow eastern floodplain of the Broad River contained thick scrub and trees including wetland vegetation as standing water was present on the ground surface. Pedestrian survey (instituted after a shovel test began filling with water from the surface) of this area failed to produce cultural material.

No cultural resources were encountered in Segment 1.

Segment 2

Segment 2 began at the Broad River and concluded at South Carolina State Highway 329. This segment extended for approximately 360 m (1182 ft) and is contained wholly within the Blacksburg South, SC quadrangle. A total of 36 sample loci in either two or three transects were recorded for this segment which was tested in 10 m intervals as it occurred within the NRHP district associated with the Cherokee Ford Iron Works (38Ck2). *It should be noted that the industrial complex (the main focus of the Cherokee Ford Iron Works) is located to the south of both Transco's proposed and existing gas pipeline corridors.*

Shovel testing (exclusively at 10 m intervals) was conducted on the very narrow western floodplain of the Broad River in a series of three parallel and independent transects (10 m, 20 m, and 30 m north of the existing gas pipeline corridor. These tests revealed 20 cm of yellowish sand underlain by strong brown and reddish sandy clay to approximately 50 cm where water began flooding the shovel test units. Marshy areas extend westward from SL 2 to SL 5 which were examined through pedestrian transects. Steep slopes rose westward off the floodplain and crossed a small dirt access road (SL 6-9). Shovel testing within a forest on a small bench area was conducted in three transects at SL 10 and 11. These tests revealed yellowish brown sandy loam from 15 to 30 cm underlain by gravel laden reddish brown sandy clay terminating in rock and gravel. No cultural material was recovered from these tests. Steep slopes rose westward from SL 12 to SL 31 and a small stream was crossed at SL 15. This area was examined through an exhausting pedestrian survey in search of any surficial remnants

[redacted]

38Ck2, 67, 85

of previous cultural activity, especially for any manifestation relating to iron ore procurement. Shovel testing was conducted at SL 32, near the end of the segment, revealing light brown silt, to 20 cm, overlying mottled reddish brown and grey sandy clay. Disturbed areas relating to construction Highway 329 were evident from SL 33 to SL 36. These areas were examined through pedestrian transects. No cultural material was recovered during pedestrian survey of this area.

No previously unrecorded cultural resources were encountered in Segment 2. In addition, within the proposed corridor no cultural resources related to the previously recorded NRHP property 38Ck2 were recovered.

Segment 3

Segment 3 began at State Highway 329 and concluded at a private farm lane. This segment extended for approximately 2467 m (8100 ft) and is contained wholly within the Blacksburg South, SC quadrangle. A total of 113 sample loci were recorded for this segment.

Shovel testing (at 20 m intervals) was conducted west of State Highway 329 beginning at SL 2 and ending at SL 16, with the exception of the highway crossing at State Route 50 (SL 10 and SL 11). These tests revealed an eroded 5-10 cm of dark greyish brown loam underlain by dark reddish brown clay. These tests failed to produce cultural material. A combination of shovel testing and pedestrian survey was conducted from SL 17 to SL 38 as the corridor ascended and descended steep (slope >20%) wooded hillslopes terminating at People's Creek. A small surficial scatter was encountered at SL 24 within the existing disturbed corridor (no context). One quartzite Savannah River stemmed projectile point and one flake were recovered from the ground surface. This field site, 3D/5, was in a very disturbed context and has suffered soil deflation, therefore, it has no research potential. To the west of Peoples Creek, a significant cultural resource, the Susan Furnace site (38Ck67), an NRHP iron furnace dating to the mid-1700's and the beginnings of the Industrial Revolution in what would have been the British Colonies at that time, is located just inside the wooded, northern edge of the existing gas pipeline corridor (Figures 34 and 35). Transco's proposed workspace encompasses the grounds surrounding Susan Furnace as well as related architectural features located to the south of the furnace. Two parallel transects of shovel tests (10 m apart), at 10 m intervals were excavated between People's Creek and the base of a steep slope (west of the iron furnace). Of the six tests excavated, one produced brick fragments while charcoal was evident in all tests. A combination of shovel testing and intensive pedestrian survey (in search of "ore bodies") was conducted from SL 42 to SL 76 as the corridor ascended and descended steep (slope >20%) wooded hillslopes terminating at a level ridge bench. Shovel testing was conducted between SL 46 and SL 50. These tests revealed light brown silt loam to 25 cm underlain by reddish brown silt and silty clay. At SL 69, a small field drainage was encountered. Shovel testing continued from SL 77 to SL 86. These tests revealed similar profiles to those encountered from SL 46 to SL 50. Following this area pedestrian survey was utilized along steep opposing ridgeslopes terminating at narrow stream valleys (SL 87 - SL 97) and in an area which has been previously disturbed through

[redacted]

[redacted]

38CK2, 67, 85-86

earthmoving and grading (SL 98 - SL 108). Of the three shovel tests excavated near the terminus of the segment, none produced cultural material. However, a variety of quartz debitage and a Guilford projectile point were recovered from the highly deflated ground surface at SL 112 (38Ck85) (Figure 37) (See Site Descriptions). Site forms for newly recorded sites are included as Appendix C.

One previously unrecorded site (38Ck85) was discovered in Segment 3. In addition, the Susan Furnace Site (38Ck67) and 38Ck2 were examined during the survey.

Segment 4

Segment 4 began at a private farm lane and concluded at South Carolina State Route 105. This segment extended for approximately 3275 m (10750 ft) and is contained wholly within the Blacksburg South, SC quadrangle. A total of 130 sample loci were recorded for this segment.

Shovel testing (at 10 m intervals) was conducted west of the private farm lane from SL 1 to SL 10 before switching to a 15 m interval. Shovel testing revealed 10-30 cm of light yellowish brown silt underlain by reddish brown silty clay loam. These tests failed to produce cultural material. A combination of shovel testing and pedestrian survey was conducted from SL 17 to SL 48 as the corridor descended steep (slope >20%) wooded hillslopes and crossed the Berry Lane Extension. Shovel tests excavated between SL 26 and SL 29 revealed eroded topsoil yielding light reddish silty clay.

On the west side of Berry Lane Extension, two parallel transects of shovel tests were excavated on the wooded floodplain of a tributary to Furnace Creek. At SL 53A and 15m E of SL 53, a small subsurface lithic scatter was uncovered (38Ck86) (Figure 38). Three quartzite flakes and one rhyolite flake were recovered during shovel testing (See Site Descriptions). To the west of the creek and a short steep slope, shovel testing (SL 57 - SL 64) produced a very eroded layer of yellowish brown sandy silt underlain by reddish brown sandy clay. Two parallel pedestrian transects were employed from SL 65 to SL 82 (for additional temporary workspace) in an area that has undergone recent tree replanting ending near a radio transmitting tower. A combination of shovel testing and pedestrian survey was conducted from SL 83 to SL 101 as the corridor ascended and descended steep (slope >20%) wooded hillslopes terminating at a wetland area extending from SL 102 to SL 106. Excavated shovel tests revealed light brown silt loam to 25 cm underlain by reddish brown sandy and silty clay. Shovel testing continued from SL 108 to SL 126, with the exception of SL 120 - SL 122 (silt dam). These tests revealed similar profiles to those encountered earlier in the segment. Following this area pedestrian survey was utilized in a location where a foreign gas pipeline corridor overlapped the proposed gas pipeline corridor, as shovel testing revealed disturbance evidenced through mottled soil profiles.

A single site, (38Ck86) was discovered in Segment 4.

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Segment 5

Segment 5 began at State Highway 105 and concluded at Berry Lane. This segment extended for approximately 2850 m (9500 ft) and is contained within both the Blacksburg South, SC and the Gaffney, SC quadrangles. A total of 95 sample loci were recorded for this segment.

Pedestrian survey (exclusively at 30 m intervals) was conducted west of State Highway 150 in a disturbed area where a foreign gas pipeline corridor overlapped the proposed gas pipeline corridor (SL 1 - SL 19). Shovel testing in this area revealed mottled soil profiles. A combination of shovel testing and pedestrian survey was conducted from SL 20 to SL 38 as the corridor became rolling, ascending and descending near Gilkey Creek. Excavated shovel tests revealed light yellowish brown silty sand to 30 cm underlain by mottled reddish brown silty clay. Disturbance associated with the placement of housing near Country Club Road precluded shovel testing from SL 39 to SL 45. Shovel testing was conducted between SL 46 and SL 57 revealing eroded topsoil above to red clay subsoil.

After crossing State Highway 18 (SL 58), a combination of shovel testing and pedestrian survey was conducted from SL 59 to SL 95 at the segment terminus, as the corridor, once again, became rolling, ascending and descending steep (>20%) wooded ridgeslopes. Excavated shovel tests (SL 68 - SL 75) revealed strong brown clay to 20 cm underlain by mottled dark reddish brown silty clay. The corridor crossed Shriner Road near SL 84 and concluded at Berry Lane (SL 95).

No cultural resources were encountered in Segment 5.

Segment 6

Segment 6 began at Berry Lane and concluded at State Highway 150. This segment extended for approximately 4440 m (14578 ft) and is contained wholly within the Gaffney, SC quadrangle. A total of 147 sample loci were recorded for this segment.

Pedestrian survey (exclusively at 30 m intervals) was conducted west of Berry Lane in a disturbed area which has been clearcut (SL 1- SL 7). This segment extended across low, rolling ridges for nearly three miles. A combination of shovel testing and pedestrian survey was conducted for the entire segment. At SL 24, surface collection during pedestrian survey along a narrow rolling ridgetop produced a Kirk or Palmer corner-notched projectile point. All shovel testing in the area failed to produce additional material with the exception of SL 24W (one biface fragment). These artifacts are considered isolated as intensive shovel testing produced only two artifacts. No additional testing is necessary in this area (3D/6), as the surficial projectile point is certainly not in its original context. Shovel testing at SL 70 produced one stemmed projectile point. In conjunction, SL 69 produced one quartz chip and one quartz shatter. This site (38Ck87) is located along a level ridgetop which overlooks a tributary of Skelton Creek (Figure 39). An isolated paddle-wrapped cordmarked pot sherd (sand temper, smoothed interior) (3D/7) was found along the creek bank

[redacted]

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38 CK 87, 87

approximately 30 m north of the existing pipeline corridor (along the outer edge of the proposed corridor). This artifact is considered an isolated find as it was certainly found out of context (in creek). Shovel testing conducted between SL 95 and 98 revealed dark greyish brown silt to 20 cm underlain by light yellowish brown sandy clay.

At SL 115 the corridor crossed Old Racetrack Road, near a Transco metering and regulating station. Transco's proposed 5.0 acre pipeyard (see following description) is located west of SL 118 - SL 122. Shovel testing conducted between SL 125 and SL 139 revealed medium greyish brown silty loam underlain by heavily mottled yellowish, grey, brown, red sandy clay. Segment 6 terminated at SL 148 after crossing a small housing development which has created ground disturbance and was surveyed through pedestrian transects.

One site 38Ck87 was discovered in Segment 6.

Segment 7

Segment 7 began at State Highway 150 and concluded at Double Bridge Road. This segment extended for approximately 2772 m (9100 ft) and is contained within both the Gaffney, SC and Pacolet Mills, SC quadrangles. A total of 154 sample loci were recorded for this segment.

Shovel testing (at 20 m intervals) was conducted west of State Highway 150 from SL 1 to SL 12 with intervening sloped areas located between SL 4-6 and SL 9-11. These tests revealed 10-30 cm of dark grey silt loam underlain by yellowish brown silty loam failed to produce cultural material. A combination of shovel testing and pedestrian survey was conducted from SL 13 to SL 65 as the corridor ascended and descended steep (slope >20%) rolling wooded hillslopes and crossed Limestone Creek (SL 45). Shovel tests excavated between SL 49 and SL 60 revealed an eroded topsoil of dark brown silty loam underlain by reddish brown sandy clay loam.

A very large wetland area (standing water on surface) extended westward across Thicketty and Little Thicketty Creek toward Double Bridge Road (SL 66-135). Pedestrian survey of this area failed to produce cultural material. A combination of shovel testing and pedestrian survey was conducted from SL 136 to SL 154 (at the western terminus of the segment) as the corridor ascended from the wetland area terminating at Double Bridge Road. Excavated shovel tests revealed yellowish brown sandy clay to 10 cm underlain by mottled reddish brown and light yellowish brown sandy and silty clay.

No cultural resources were encountered in Segment 7.

Segment 8

Segment 8 began at Double Bridge Road and concluded at Goucher School Road. This segment extended for approximately 1950 m (6382 ft) and is contained wholly within the Pacolet Mills, SC quadrangle. A total of 65 sample loci were recorded for this segment.

[redacted]

Pedestrian survey (exclusively at 30 m intervals) was conducted west of Double Bridge Road in a sloped and wet area (associated with Little Thicketty Creek) from SL 1 to SL 5. Shovel testing was conducted from SL 6 to SL 8. These tests revealed an eroded 10-20 cm of yellowish brown sandy silt underlain by dark reddish brown sandy clay. These tests failed to produce cultural material. Pedestrian survey was conducted from SL 9 to SL 20 as the corridor ascended and descended steep (slope >20%) wooded hillslopes. A surficial lithic scatter (38Ck84) was encountered from SL 14 to SL 16 covering the existing and proposed corridors (Figure 39) (See Site Descriptions). Shovel testing between SL 14 and 16 produced no subsurface artifacts. Shovel testing continued between SL 21 and SL 31, with the exception of a downslope area terminating at a small stream from SL 24 to SL 28. These tests revealed yellowish brown sandy silt to 20 cm, underlain by reddish brown sandy clay. West of this area intermittent shovel testing was conducted along narrow ridge spurs as the corridor traversed rolling ridge slopes (SL 32-59). These tests revealed similar profiles to those encountered between SL 21 and SL 31. A small drainage (SL 60 and SL 61) and following wooded ridgeslope (SL 62) terminated at a disturbed area at the western end of Segment 8 adjacent to Goucher School Road. No cultural material was recovered from this section of the segment.

One site (38Ck84) was discovered in Segment 8.

Segment 9

Segment 9 began at Goucher School Road and concluded at Soapstone Road. This segment extended for approximately 2040 m (6688 ft) and is contained within both the Pacolet Mills, SC and the Pacolet, SC quadrangles. A total of 68 sample loci were recorded for this segment.

Pedestrian survey (exclusively at 30 m intervals) was conducted west of Goucher School Road in a disturbed area between the road and a small access from SL 1 to SL 5. Shovel testing was conducted from SL 6 to SL 21. These tests revealed an erose 10-20 cm thick layer of medium reddish brown loam underlain by dark reddish brown silty clay. These tests failed to produce cultural material. Pedestrian survey was conducted from SL 23 to SL 36 as the corridor descended (slope >20%) to small field drainages while crossing an existing powerline corridor. Shovel testing continued between SL 37 and SL 61. These tests revealed little or no topsoil underlain by reddish brown silty sand clay. However, SL 42 contained three quartz flakes, one chert flake, one quartz perforator, and three quartz shatter. These finds (3D/8) were isolated as no additional material was recovered in the surrounding shovel tested area and appeared to be out of context as soil in the vicinity of the site was heavily deflated through erosion. Near the western terminus of the segment, steep slopes bracket a small field drainage (SL 62-67) to the east of Soapstone Road (SL 68). No cultural material was recovered during pedestrian survey of this area.

No significant cultural resources were encountered in Segment 9.

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Segment 10

Segment 10 began at Soapstone Road and concluded at the western project terminus at the Pacolet-Cowpens metering station, adjacent to Cowpens-Pacolet Road. This segment extended for approximately 1470 m (4826 ft) and is wholly contained within the Pacolet, SC quadrangle. A total of 49 sample loci were recorded for this segment.

Shovel testing (exclusively at 30 m intervals) was conducted west of Soapstone Road to the south of the existing pipeline corridor in a mixed, deciduous and coniferous forest. The shovel tests revealed an eroded 10-20 cm thick layer of medium reddish brown sandy silt underlain by dark reddish brown silty clay. These tests failed to produce cultural material. Pedestrian survey was conducted from SL 8 to SL 10 as the corridor descended (slope >20%) to a small field drainage. Two shovel tests, revealing similar soil profiles, were excavated west of the small field drainage before another field drain was encountered. Shovel testing continued between SL 14 and SL 16. These tests revealed yellowish brown sandy silt to 20 cm overlying strong brown clay. After crossing a short sloped area, shovel testing was conducted from SL 18 to SL 20. These tests revealed only reddish brown silty sand subsoil as the topsoil was completely eroded. Slopes and an access road (SL 24) dominate the topographic features encountered between SL 21 and SL 25.

Aside from an access road, occurring at SL 34, and a sloped area at SL 30 and 31, shovel testing was conducted from SL 26 to SL 41. These tests revealed yellowish brown coarse sandy clay subsoil or light greyish or yellow brown sandy silt overlying light orange brown sandy clay. In general, the topsoil extended no deeper than 10 cm before encountering the compact subsoil. A disturbed section of the corridor associated with its crossing of Sweet Gum Road extended from SL 42 to SL 44. Shovel testing concluded the segment revealing strong brown sandy silt (to 20 cm), overlying strong brown sandy clay adjacent to the metering station.

No cultural resources were encountered in Segment 10.

Pipeyard 1

Pipeyard 1 consists of an approximate five acre proposed area for pipe storage. This pipeyard is located adjacent to an existing Transcontinental Gas Pipeline Corporation metering and regulating station near Gaffney, SC. This pipeyard is located on the Gaffney, SC 7.5 minute quadrangle map. A total of 17 sample loci were recorded for this segment.

This pipeyard was located within an existing but abandoned automobile race track. Shovel testing throughout the proposed wareyard revealed mottled soil profiles containing rock, gravel and strong brown, yellow, and grey sandy clay loam. Modern automobile tires were found throughout the area which may have been used when the track was in operation.

Due to the disturbed nature of this proposed pipeyard (existing disturbance stemming from grading and leveling to construct the raceway),

[redacted]

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shovel testing along with pedestrian survey was implemented at this site. No cultural resources were recorded for Pipeyard 1.

No cultural resources were encountered in Pipeyard 1.

Pipeyard 2

Pipeyard 2 consists of an approximate 2.60 acre (approximately 450 ft x 266 ft) (136 m x 80 m) proposed area for pipe storage (Figure 33). This pipeyard is located adjacent to an existing Transcontinental Gas Pipeline Corporation metering and regulating station near Pacolet, SC. This pipeyard is located on the Pacolet, SC 7.5 minute quadrangle map. A total of 14 sample loci were recorded for this property.

Pipeyard 2 is located in a grassy pasture near the Cowpens-Pacolet metering station. A total of 14 shovel tests were excavated in the area of the proposed yard. These tests revealed 5-20 cm of grey loam underlain by rock. A single shovel test revealed two quartz flakes and one piece of quartz shatter (3D/9). Extensive shovel testing in the area of the positive test failed to produce additional cultural material. Therefore, this isolated find location does not appear to contain significant cultural resources and no further work is recommended for Pipeyard 2.

No significant cultural resources were encountered in Pipeyard 2.

[redacted]

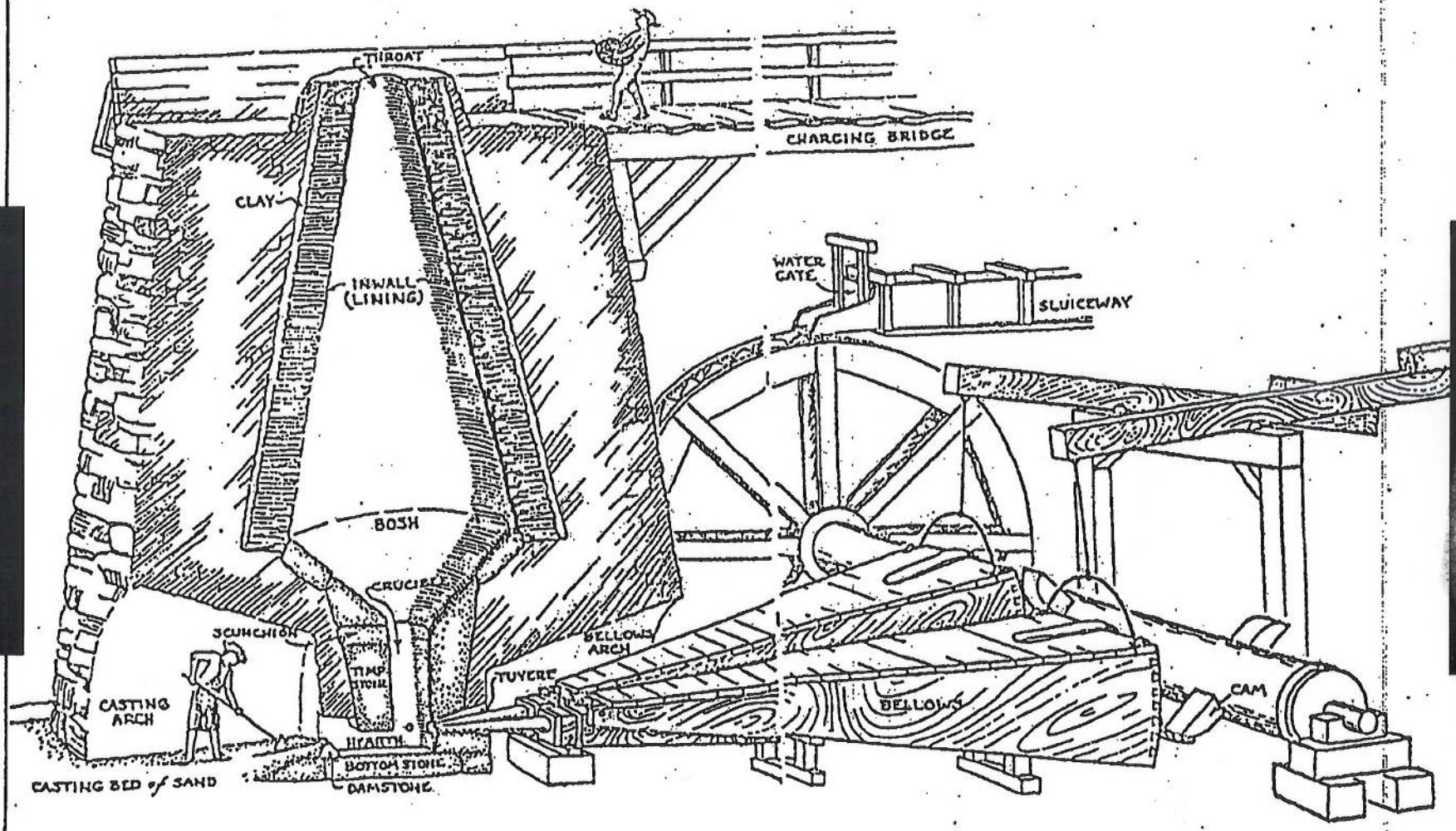

FIGURE 34. SKETCH OF INNER WORKINGS OF CHARCOAL FIRED IRON FURNACE AND RELATED APPARATUS.

Project # C7523.01	REFERENCE: PROFESSOR TERRY FERGUSON, Ph.D., WOLFORD COLLEGE, SOUTH CAROLINA.	3D/ENVIRONMENTAL

Figure withheld under Section 304 of the
Archaeological Resources Protection Act (16 U.S.C. 470w-3(a))

REFERENCES CITED

Anderson, David G.
1979 Excavations at Four Fall Line Sites: The Southeastern Columbia Beltway Project. Report No. R-2008. Commonwealth Associates, Jackson, Michigan.

Anderson, David G., and G.T. Hanson
1988 Early Archaic Settlement in the Southeastern United States: A Case Study from the Savannah River Valley. American Antiquity 53(2):262-286.

Anderson, David G,, and J. Schuldenrein
1983 Early Archaic Settlement on the Southeastern Atlantic Slope: A View from the Rucker's Bottom Site, Elbert County, Georgia. The North American Archaeologist 4: 177-210.

Bell, R.
1958 Guide to Certain American Indian Projectile Points. Oklahoma Anthropological Society Special Bulletin No. 1.

Bense, Judith A.
1985 Hawkshaw: Prehistory and History in an Urban Neighborhood in Pensacola, Florida. Reports of Investigations No. 7, Office of Cultural and Archaeological Research, University of West Florida, Pensacola. Submitted to Gulf Power Company, Pensacola.

1989 The Pensacola Archaeological Survey, Vol. 1. Pensacola Archaeological Society Publication No. 2. Pensacola, Florida.

1994 Archaeology of the Southeastern United States. Academic Press, San Diego.

Bernabo, J.C. and T. Webb III
1977 Changing Patterns in the Holocene pollen record of northeastern North America: a mapped summary. Quaternary Research 8: 64-96.

Binford, Lewis R.
1980 Willow Smoke and Dogs' Tails: Hunter-gatherer Settlement Systems and Archaeological Site Formation. American Antiquity 45:4-20.

Blanton, Dennis B. and K.E. Sassaman
1989 Pattern and Process in the Middle Archaic Period of South Carolina In: Studies in South Carolina Archaeology. University of South Carolina, Columbia.

Blanton, D.B., C.T. Espenshade, and P.E. Brockington, Jr.
1986 An Archaeological Study of 38U83: A Yadkin Phase Site in the Upper Coastal Plain of South Carolina. Technical report submitted to the South Carolina Department of Highways and Public Transportation. Garrow and Associates, Inc., Atlanta.

1961 Typologie du Paleolithique ancien et moyen. Bordeaux, Delmas.

Bradley, B. and C.G. Sampson
1986 Artifacts from the Cottages Site. In C.G. Sampson (ed.). Palaeoecology and Archaeology of an Acheulian Site at Caddington, England. S.M.U. Press, Dallas, Texas: 83-137.

Braun, E.L.
1950 Deciduous Forests of Eastern North America. Hafner Publishing Company, New York, New York.

Brown, J.A. and C.E. Cleland
1968 The Late Glacial and Early Post-Glacial Faunal Resources in Midwestern Biomes Newly Opened to Human Habitation. In: The Quaternary of Illinois. Illinois College of Agriculture, Urbana, Illinois: 114-122.

Brown, J.A. and R.K. Vierra
1983 What Happened in the Middle Archaic? Introduction to an Ecological Approach to Koster Site Archaeology. In Archaic Hunters and Gatherers in the American Midwest: Multidisciplinary Studies of the Archaic, edited by J.L. Phillips and J.A. Brown, pp. 165-195 Academic Press: New York, New York.

Brown, I.W.
1985 Natchez Indian Archaeology: Culture Change and Stability in the Lower Mississippi Valley. Archaeological Report No. 15, Mississippi Department of Archives and History, Jackson.

Caldwell, J.R.
1958 Trend and Tradition in the Prehistory of the Eastern United States. American Anthropological Association, Memoir 88.

1959 Trend and Tradition in the Prehistory of the Eastern United States. American Anthropological Association, Memoirs #88. Menasha, Wisconsin.

Caldwell, J.R. and C.F. Miller
1948 Appraisal of the Archaeological Resources of the Clark Hill Reservoir Area, South Carolina and Georgia. Unpublished manuscript. Institute of Archaeology and Anthropology. University of South Carolina, Columbia.

Callahan, E.
1979 The Basics of Biface Knapping in the Eastern Fluted Points Tradition. Archaeology of Eastern North America 7:1-180.

Carbone, V.
1976 Environment and Prehistory in the Shenandoah Valley. unpublished Ph.D. dissertation, Catholic University of America.

Chapman, J.
1985 Tellico Archaeology: 12,000 Years of Native American History. Reports of Investigations No. 43. Occasional Paper No. 5, University of Tennessee, Knoxville. Tennessee Valley Authority Publications in Anthropology No. 41.

Chapman, J. and J.M. Adovasio
1977 Textile and Basketry Impressions from Icehouse Bottom, Tennessee. American Antiquity 42: 620-625.

Charles, D.K. and J.E. Buikstra
1983 Archaic Mortuary Sites in the Central Mississippi Drainage: Distribution, Structure, and Behavioral Implications. In Archaic Hunters and Gatherers in the American Midwest, edited by J.L. Phillips and J.A. Brown, pp. 117-46. Academic Press, New York.

Claflin, W.H., Jr.
1931 The Stalling's Island Mound, Columbia County, Georgia. Papers of the Peabody Museum of American Anthropology and Ethnology 14 (1).

Coe, J.L.
1937 Keyauwee--a Preliminary Statement. Archaeological Society of North Carolina, Bulletin 4(1):8-16.

1952 Cultural Sequence of the Carolina Piedmont. In Archaeology of the Eastern United States. Edited by J.B. Griffin. Chicago University Press.

Cook, T.G.
1976 Broadpoint: Culture, Phase, Horizon, Tradition, or Knife? Journal of Anthropological Research 32: 337-357.

Custer, J.F.
1985 Test Excavations at the Webb Site (36Ch51), Chester County, Pennsylvania. Pennsylvania Archaeologist vol. 55/1-2:21-30.

DePratter, C., C.M. Hudson, and M.R. Smith
1983 The Route of Juan Pard's Explorations in the Interior Southeast, 1566-1568. Florida Historical Quarterly 62:126-58.

Derting, K.M., J.M. Brantley, and S.L. Pekrul
1995 Site File Management and the Technical Review Process: Inventorying Cultural Resources at the State and Federal Level. Paper prepared for the National Park Service Workshop.

Dickens, R.S.,Jr., H.T. Ward, and R.P.S. Davis, Jr.
1985 The Historic Occaneechi: An Archaeological Investigation of Culture Change. Research Laboratories of Anthropology, University of North Carolina, Chapel Hill.

1987 The Siouan Project: Seasons I and II. Research Laboratories of Anthropology, Monograph Series No. 1 University of North Carolina, Chapel Hill.

[redacted]

Dragoo, D.W.
1976 Some Aspects of Eastern North American Prehistory: A review 1975. American Antiquity 41:3-27.

Ferguson, Terry A.
1979 Final Report: Spartanburg Soapstone Archaeological Study. Manuscript Submitted to the South Carolina Department of Archives and History, Columbia.

1980 Prehistoric Soapstone Procurement in Northwestern South Carolina. Unpublished M.A., Thesis. Department of Anthropology, University of Tennessee, Knoxville.

Ferguson, Terry A., and T.A.Cowan
1986 The Early Ironworks of Northwest South Carolina. Report submitted to South Carolina Department of Archives and History. Columbia.

Ford, R.I.
1974 Northeastern Archaeology: Past and Future Directions. Annual Review of Anthropology 3. Annual Review, Inc., Palo Alto, pp. 385-413.

Frison, G.C.
1974 The Casper Site: A Hell Gap Bison Kill on the High Plains. Academic Press.

Gates, W.C. and Ormerod, D.E.
1982 The East Liverpool Pottery District: Identification of Manufacturers and Makers Marks. Historical Archaeology 16:1-2.

Goodyear, A.C., N.W. Ackerley, and J.H. House
n.d. An Archaeological Survey of the Primary Connector from Laurens to Anderson, South Carolina. Institute of Archaeology. University of South Carolina, Research Manuscript Series, in preparation, Columbia.

Goodyear, A.C., III
1982 The Chronological Position of the Dalton Horizon in the Southeastern United States. American Antiquity 47:382-395.

Goodyear, A.C., III, J.L. Michie, and T. Charles
1989 The Earliest South Carolinians. In: Studies in South Carolina Archaeology. University of South Carolina, Columbia.

Gordon, R.B.
1969 The Natural Vegetation of Ohio in Pioneer Days. Ohio Biological Survey, Vol. 3, No. 2. Columbus, Ohio.

Graham, M.D.
1973 Dental Morphology, Attrition, and Pathology in selected skulls from Town Creek Indian Mound, Mount Gilead, North Carolina. M.A. Thesis, Department of Anthropology, University of North Carolina, Chapel Hill.

Guilday, J.E.
1967 The Climatic Significance of Hosterman's Pit Local Fauna, Centre County, Pennsylvania. American Antiquity 32(2):231-232.

Harwood, C.R.
1959 Quartzite Points and Tools from the Appalachian Highlands. Tennessee Archaeologist 15: 89-95.

House, J.H. and D.L. Ballenger
1976 An Archaeological Survey of the Interstate 77 Route in the South Carolina Piedmont. Institute of Archaeology. University of South Carolina. Research Manuscript Series, Columbia.

Howell, C.D. and D.C.
1953 The Excavation of an Indian Village on the Yadkin River near Trading Ford. Southern Indian Studies V:3-20.

Hudson, C., M. Smith, and C. DePratter
1984 The Hernando de Soto Expedition: From Apalachee to Chiaha. Southeastern Archaeology 3:65-77.

Hulbert, A.B.
1930 Soil: Its Influence on the History of the United States; With Special Reference to Migration and the Scientific Study of Local History. Yale University Press, New Haven, Connecticut.

Ingmanson, J.E.
1964 The Archaic Sequence in the Ocmulgee Bottoms. Southeastern Archaeological Conference, Bulletin 1: 31-32.

Johnson, Elmer D.
1952 A Brief History of Cherokee County, South Carolina. Public Library of Cherokee County, Gaffney.

Jordon, T.G.
1979 Between the Forest and the Prairie. In: Geographic Perspectives on America's Past. D. Ward, ed. Oxford University Press, New York, New York.

Justice, N.
1987 Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States. Indiana University Press, Bloomington.

Keel, B.C.
1976 Cherokee Archaeology: A Study of the Appalachian Summit. University of Tennessee Press, Knoxville.

Kelly, A.R.
1938 A Preliminary Report on Archaeological Exploration at Macon, Georgia. Bureau of American Ethnology, Anthropological Papers 1.

Kelly, J.E.
1972 An Archaeological Survey of the Piedmont Region in North Central South Carolina. Unpublished M.A., Thesis. Department of Anthropology, University of Wisconsin, Madison.

Kimball, L.R.
1982 Lithic Artifact Analysis. In An Archaeological Survey and Assessment of Aboriginal Settlement within the Lower Little Tennessee River Valley, edited by R.P.S. Davis, L.R. Kimball, and W.W. Baden, pp. 85-192. Technical report submitted to the Tennessee Valley Authority, Norris.

Kneberg, M.D.
1956 Some Important Projectile Point Types Found in the Tennessee Area. Tennessee Archaeologist 12: 17-28.

Levy, J.E., J.A. May, and D.G. Moore
1989 From Ysa to Joara: Cultural Diversity in the Catawba Valley from the Fourteenth to the Sixteenth century. In Columbian Consequences. Vol. 1: Archaeological and Historical Perspectives on the Spanish Borderlands West, edited by D.H. Thomas, pp. 153-68. Smithsonian Institution Press, Washington, D.C.

Lofstrum, E.; J.P. Tordoff and D.C. George
1982 A Seriation of Historic Earthenwares in the Midwest, 1780-1870. Minnesota Archaeologist 41(1):3-29.

Majewski, T., and M.J. O'Brien
1987 The Use and Misuse of Nineteenth Century English and American Ceramics Archaeological Analysis. In Advances in Archaeological Method and Theory. Vol. 11. Edited by Michael B. Schiffer. Academic Press Inc., New York, New York.

Miller, G.B.
1980 Classification and Economic Scaling of Nineteenth Century Ceramics. Historic Archaeology Vol 14:1-40.

McCorvie, M.R.
1987 The Davis, Baldridge, and Huggins Sites: Three Nineteenth Century Upland South Farmsteads in Perry County, Illinois. Preservation Series 4, American Resources Group, Ltd., Carbondale, Illinois.

[redacted], and K.E. Parker
1989 Archaeological Investigations at the Fair View Farm Site: A Historic Farmstead in the Shawnee Hills of Southern Illinois. Prepared by American Resources Group, Ltd., Carbondale, Illinois.

McManus, J.M.
1985 An Analysis of the Lithic Artifact Assemblage from the Forbush Creek Site (31YD1), Yadkin County, North Carolina. Southern Indian Studies XXXIV.

Meltzer, D.J.
1989 Why Don't We Know When the First People Came to North America? American Antiquity 54471-490

Michie, J.L.
1969 Excavations at the Thom's Creek. Institute of Archaeology and Anthropology. University of South Carolina, The Notebook I (10): 2-16.

McCollough, E.H.
1887 Historic Atlas of Spartanburg County, South Carolina. Charlotte.

Moss, G.B.
1981 The Old Iron District - a legacy of iron mining and manufacturing in South Carolina. Manuscript in possession of 3D/Environmental.

Newcomer, M.H.
1971 Some Quantitative Experiments in Handaxe Manufacture. World Archaeology. 3(1):85-94.

Oliver, B.I.
1985 Tradition and Typology: Basic Elements of the Carolina Projectile Point Sequence. In Structure and Process in Southeastern Archaeology, edited by R.S. Dickens,Jr. and H.T. Ward, pp. 195-211. University of Alabama Press, University.

Price, C.R.
1982 19th Century Ceramics in the Eastern Ozark Border Region. Monograph Series No.1, Center for Archaeological Research, Southwest Missouri State University, Springfield.

Price, C. and J. Price
1977 Pioneer Settlement and Subsistence on the Ozark Border: Preliminary Report on the Widow Harris Cabin Site Project. Conference on Historic Site Archaeology, Papers, 12:145-169.

Reid, J.J.,Jr.
1967 PeeDee Pottery from the Mound at Town Creek. M.A. thesis. Department of Anthropology, University of North Carolina, Chapel Hill.

[redacted]

Ritchie, W.A.
1959 The Stony Brooke Site and Its Relation to Archaic and Transitional Cultures on Long Island. New York State Museum and Science Service Bulletin No. 372, Albany.

1969 The Archaeology of New York State. Second, revised edition. The Natural History Press, New York.

de Sonneville-Bordes, D.
1960 La Paleolithique Superieur en Perigord. Delmas, Bordeaux.

Stephenson, R.L.
1975 An Archaeological Preservation Plan for South Carolina. Institute of Archaeology and Anthropology. University of South Carolina, Research Manuscript Series 142, Columbia.

Stoltman, James B.
1974 Groton Plantation: Peabody Museum Monographs 1. Harvard University, Cambridge.

Taylor, R.L. and M.F. Smith
1978 The Report of the Intensive Survey of the Richard Bo Russell Dam and Lake, Savannah River, Georgia and South Carolina. Institute of Archaeology and Anthropology, University of South Carolina. Research Manuscript Series 142, Columbia.

Tixier, J., M.Inizan, and H. Roche
1980 Prehistoire de la Pierre Taillee I, Terminologie et Technologie. Valbonne Cedex, France.

Trinkley, Michael B.
1989 An Archaeological Overview of the South Carolina Woodland Period: It's the Same Old Riddle. In Studies in South Carolina Archaeology Essays in Honor of Robert L. Stephenson, edited by Albert C. Goodyear, III, and Glen T. Hansen. Anthropological Studies 9. Anthropological Papers of the South Carolina Institute of Archaeology and Anthropology, The University of South Carolina, Columbia.

Turnbaugh, W.A.
1975 Toward and Explanation of the Broadpoint Dispersal in Eastern North American Prehistory. Journal of Anthropological Research 31 (1): 51-68.

United States Department of Agriculture (USDA)
1962 Soil Survey of Cherokee County, South Carolina.

Witthoft, J.
1959 Notes on the Archaic of the Appalachian Region. American Antiquity 25: 79-85.

[redacted]

Woodall, J.N. (editor)
1984 The Donnaha site: 1973 & 1975 Excavations. Publication No. 22. North Carolina Archaeological Council, Raleigh.

[redacted]