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An Archeological Survey of the Right-of-Way for South Carolina Electric and Gas Company's Proposed Wateree-Orangeburg 230 KV Transmission Line, South Carolina

Marion F. Smith Jr.

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AN ARCHEOLOGICAL SURVEY OF THE RIGHT-OF-WAY FOR SOUTH CAROLINA ELECTRIC AND GAS COMPANY'S PROPOSED WATEREE-ORANGEBURG 230 KV TRANSMISSION LINE, SOUTH CAROLINA

by

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INTRODUCTION

In support of South Carolina Electric and Gas Company's environmental assessment of the proposed Wateree-Orangeburg 230-Kilovolt Transmission Line for the South Carolina Public Service Commission, the author conducted an archeological survey of the project right-of-way during April and early May, 1977. Employed by South Carolina Electric and Gas Company to evaluate the archeological effects of proposed power transmission line projects, the author has worked closely with the staff of the Institute of Archeology and Anthropology of the University of South Carolina.

The proposed construction consists of the 230 kV Wateree-Orangeburg line and the Orangeburg-Eastover 115 kV line on the same structure. This proposed construction will replace a 26 mile segment of the Orangeburg-Eastover 115 Kilovolt line, which was constructed in 1967. The existing right-of-way, 70 feet wide, will be widened by 30 feet to accommodate the proposed line. Where feasible in the face of engineering and right-of-way acquisition problems, the current right-of-way will be acquired only for about 0.4 miles immediately before the Orangeburg end of the line. Forested segments of the new or expanded right-of-way will probably be felled without heavy equipment, but the resulting slash will be moved by machinery.

The new line will follow as closely as practical the current right-of-way center line. Wooden twin pole structures about 18 feet wide will support the line. The spacing between structures will average 600 feet or somewhat less. Excavations for these poles will be augered, about 2.5 feet in diameter and about 10 feet deept. More substantial structures requiring larger excavations will be located at the Congaree River crossing for engineering reasons.

This survey had as goals the location of archeological sites, the evaluation of their importance for understanding past human lifeways, the assessment of potential effects of the Wateree-Orangeburg project upon the sites, and the presentation--in this report--of the information derived from the field work.

Preliminary work included consultation with individuals familiar with the project area and library research. Field work was done in three stages: (1) A walking inspection of all accessible 23.1 miles of the right-of-way was aimed at locating sites exposed on bare ground (such as cultivated fields) and evaluating variables such as ground cover and topography for all segments of the right-of-way. (2) Twenty per cent of those segments with heavy vegetation were then examined by post-holing the right-of-way at 100 foot intervals. (3) Sites discovered were evaluated through post-holing and the excavation of small test units. Three prehistoric sites and one historic site were found, all by surface inspection.

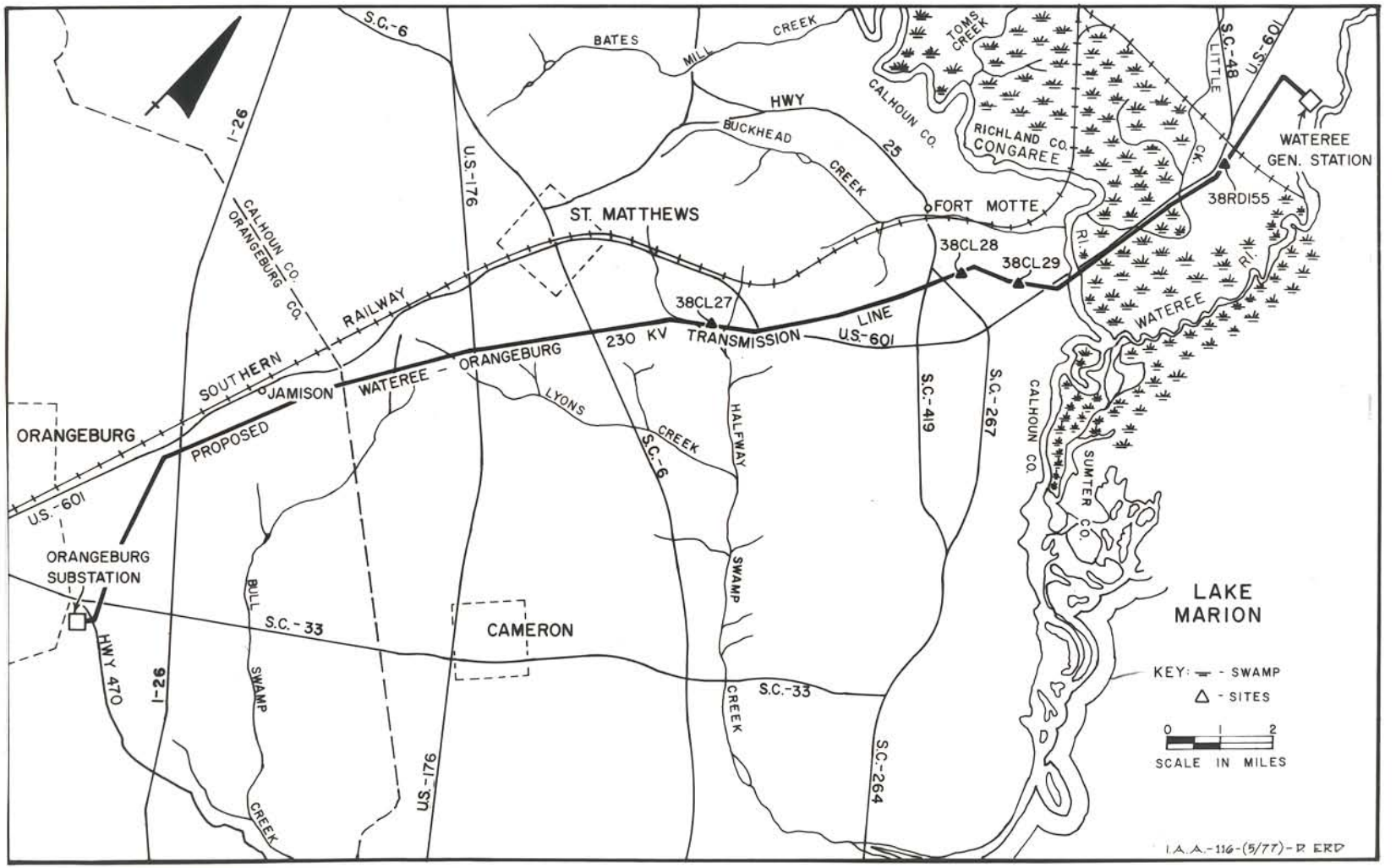

FIGURE 1. Archeological Sites Discovered by the Wateree-Orangeburg Survey.

Evaluation of project impact on these cultural resources requires for each site the assessment of potential damage due to construction activities, in conjunction with assessment of its scientific significance. Site 38RD155 consisted of an isolated projectile point fragment, and no further work is recommended there. Site 38CL27, is judged to be of moderate archeological significance with evidence of occupation during the Thom's Creek cultural phase. This site will be adequately protected by the exclusion of construction equipment traffic and of power line structures from the area of cultural remains. Site 38CL29 appears to have been occupied not only during the time of manufacture of Thom's Creek pottery, but also during the era of Deptford ceramics. For adequate evaluation, this relatively large and well-exposed site should be subjected to a spatially controlled surface collection and to further subsurface testing. The historic earth and concrete dam structure, 38CL28, while it offers an interesting opportunity to study late nineteenth century engineering technology should not be substantially affected by the Wateree-Orangeburg project. However, its proximity to the right-of-way suggests that the latter should be widened, if possible, on the side opposite the concrete part of the structure.

ENVIRONMENTAL SETTING

The environment of the project area may be usefully regarded in at least two different perspectives. According to the first, the project area falls within a single pine barrens "Sector" or "biome" (Larson 1970; Milanich 1972). This environmental zone is characterized by longleaf pine forest promoted by natural or artificial fires. It has been seen as an inadequate base for the support of year-round hunting-gathering peoples (Larson 1970: 314; Milanich 1972: 110), and it has been contrasted in this regard with the Southeast's Coastal and Piedmont-Fall Line biomes.

From a more detailed perspective, the project area may be divided into two distinct environments, or "biotopes" (Milanich 1972). The pine barrens proper is an inter-riverine forest biotope dominated by longleaf pine. The pine barrens river valley biotope, however, differs strongly in flora and fauna from the inter-riverine zone. Deciduous trees are dominant. These hardwoods, many of which produce fruit edible by man or by his prey, include bald cypress, tupelo, water hickory, pecan, sweet gum, and several species of oaks (Milanich 1972: 110). Mammals and birds thus provisioned and so attracted would have been complemented by fish, shellfish, and other human subsistence resources available in the streams themselves. The rich subsistence potential of the valleys reminds one that the views of the pine barrens biome as aboriginally unexploitable or as merely a buffer or contact zone between coastal and Piedmont peoples are hypotheses only. Indeed, recent work by Widmer (1976a, 1976b) suggests that the deficiency of the pine barrens environment for human occupation during aboriginal times may not have been as marked as Larson and Milanich argue:

> A separate adaptive system [from that of the coastal peoples] was developed to exploit the relatively rich, but only temporarily available, resources in the non-estuary interior regions of the lower Coastal Plain. Therefore, a seminomadic adaptive strategy, possibly based on a seasonal scheduling pattern, but certainly of limited length of habitation at any one site, was developed (Widmer 1976b: 47).

ARCHEOLOGICAL BACKGROUND

The inland sector of the Coastal Plain of South Carolina is rather poorly known archeologically, although chronological sequences have been defined from stratified archeological sites for the Georgia coast and the Savannah River valley (Williams 1968; Caldwell 1971; Stoltman 1974). Archeologists have sometimes considered the area to have been unoccupied by permanent populations during at least late prehistoric times (Larson 1970: 99). Milanich (1972: 111-112) has seen the pine barrens as occupied only seasonally by coastal peoples for about the last three millennia B.C.

From the Cal Smoak site, 38BM4, close to the South Edisto River and about 20 miles from the project area, there is documented a long cultural sequence. However, only a brief preliminary report has been published on this important and well excavated site (Lee and Parler 1972).

It appears that the Early Archaic cultural period is represented there by Palmer and Kirk projectile point types; the Middle Archaic, by Morrow Mountain types; the Late Archaic, by Savannah River points; and in later times, by triangular projectile points (cf. Coe 1964). To supplement the picture given by stone tools, the ceramics of upper levels and later times at the site include pottery belonging to the Stallings, Thom's Creek, Deptford, and Cape Fear ware groups. On the South Carolina coast, these ceramics span the period from before 2000 B.C. to A.D. 500 or later (South 1973).

A tabulation of previously known archeological sites in the vicinity of the Wateree-Orangeburg project area is presented as Table 1. Examination of this table in conjunction with the brief discussion of the Cal Smoak site above will emphasize that the vicinity of the project area was occupied, whether seasonally or not, during each major cultural period from about 8500 B.C. to the present. The current report will adduce further evidence to that effect.

TABLE 1

PARTIAL TABULATION OF SITES IN VICINITY OF PROJECT AREA

EXPLANATIONS

IAA - Institute of Archeology and Anthropology, University of South Carolina

Site Column

OR - Orangeburg
RD - Richland
CL - Calhoun

General Cultural Period

PI - Paleo-Indian
EA - Early Archaic
MA - Middle Archaic
LA - Late Archaic
FV - Formative, typified by Stallings or Thom's Creek pottery ware groups (South 1973)
DV - Developmental, typified by Deptford, Cape Fear, or Wilmington ware groups (South 1973). Some manifestations often have been referred to as "Woodland."
CL - Climatic, typified by the Chicora ware group (South 1973). This period is often referred to as "Mississippian."
18th - Eighteenth century historic
19th - Nineteenth century historic

Site 38	Relation to Project Area	Setting	General Cultural Period	References
OR54	Ca. 4 mi. from line near Orangeburg	Adjoins Early Branch & adjacent swamp	PI,EA,MA?	IAA site files
RD73	Ca. 1.5 mi. north of projects' Wateree end	Low hill around natural pond, ca. 600' west of Wateree on high bluff overlooking W. swamp	EA, MA	IAA site files

Site 38__	Relation to Project Area	Setting	General Cultural Period	References
BM4 (Smoak)	Ca. 18 mi. south of Orangeburg end of project	Small ridge overlooking Edisto R. swamp - river ca. 1 mi. away	EA,MA,LA,FV, DV	Lee and Parler 1972; IAA site files
CL4	Ca. 4 mi. northwest of line in Ft. Motte area	Well-drained field with small hill or mound, 2000 ft. southeast of Congaree River	EA/MA(?),FV, DV	National Register and site files at IAA; Teague 1972
RD69	Ca. 1 mi. north of Wateree Generating Station	Bluff above Wateree River	EA(?),LA,DV(?)	Miller 1973; IAA site files
RD28	Ca. 18 mi. south of Orangeburg end of line	Between north and south forks of the Edisto River	EA(?),LA,FV, DV,19th	Ferguson and Luttrell 1973; IAA site files
OR23	Ca. 20 mi. east from Orangeburg end of line	Close to Horse Range Kettle Branch and tributary-almost at the confluence	MA,DV	Ferguson and Luttrell 1973; IAA site files
RD62	Ca. 0.5 mi. from Wateree Generating Station	In Congaree River bottoms	FV, DV	IAA site files
RD30	Ca. 1 mi. west of S. Railway crossing near the Wateree River	High ground in swamp	FV,DV,CL(?)	IAA site files
OR24	Ca. 20 mi. southeast of Orangeburg end of project	Small ridge 1 mi. from Wadboo swamp	DV	Ferguson and Luttrell 1973; IAA site files
OR25	Ca. 20 mi. southeast of Orangeburg end of project	Sandy hill with low area to west	DV	Ferguson and Luttrell 1973; IAA site files
RD57	Less than 1/4 mile from the project	Natural levee of Bates Old River(possible former Congaree channel) now surrounded by swamp	CL	IAA site files
RD67	Ca. 1 mi. north of Wateree Generating Station	Adjacent to bluff over Wateree River; small tributary south of site	CL,18th	Miller 1973; IAA site files

Site 38__	Relation to Project Area	Setting	General Cultural Period	References
OR27	Ca. 18 mi. south of project area	Knoll close to which Penn Branch, tributary of Edisto runs	18th	Ferguson and Luttrell 1973; IAA site files
CL1	Ca. 2 mi. from project south of Congaree River	Revolutionary War house site used by British as headquarters	18th	National Register and IAA site files

EARLY HISTORICAL BACKGROUND

There was little European settlement in the upcountry of South Carolina until the regime of the Lords Proprietors ended in 1729 and North Carolina and South Carolina were established as royal colonies whose governors were appointed by the king. The township plan of Governor Robert Johnson, implemented in the 1730's, aimed to settle North European Protestants in a network of outlying townships to provide expansion of trade. Protection from the internal slave threat and from the menace of Indian and Spanish attacks was another motive. Even before the laying out of Amelia Township in the early 1730's there were settlers on the Cherokee trail which pack horse trains followed from Charleston to "the Congarees" near Columbia (Meriwether 1940: 42-43). Amelia was on the west bank of the Congaree and Santee Rivers, with the town site situated at the mouth of the Congaree. Good land and early settlement were notable on Buckhead Creek, Lyons Creek, and the headwaters of Halfway Swamp Creek (Fig. 1). Rapid growth of Amelia, which became essentially a planters' parish in the low country mold, began about 1749. By 1757 the Afro-European population exceeded 700 (Meriwether 1940: 49-50). Lands now in Richland County along the Congaree and Wateree received many early German settlers, mostly small farmers and tradesmen. The Wateree's west bank below the shoals attracted farmers and small planters after the Cherokee threat ended in 1761 (Central Midlands Regional Planning Council 1974: 142).

At the other end of the project area, Orangeburg Township was located on the east bank of the North Fork of the Edisto, and its border to the east was Amelia Township. The middle and upper sections, especially along the river, had good agricultural lands. Records show three non-German speaking settlers in the area even before 1735, when Swiss lured by the bounty provisions of the township plan started arriving. The population of this compact settlement of small farms reached about 500 by 1740 (Meriwether 1940: 45-46).

Checking with the staff and files of the Institute of Archeology and Anthropology of the University of South Carolina and the South Carolina Department of Archives and History revealed that no historic sites were known to be in the project area.

FIELD METHODS

Time and manpower constraints for this project suggested that a two-phase strategy, with results of the first phase used to plan the second, would give the best results.

The first stage consisted of examination of all accessible segments of the right-of-way on foot. Particular attention was paid (1) to inspection of all exposed ground, such as cultivated fields, eroded slopes, and woods roads and (2) to evaluation of segments in terms of degree of exposure of ground, accessibility, and preservation. The proportion of right-of-way obscured by vegetation could be determined only from close range observation, and this information was needed to plan the second phase sampling of obscured areas.

One hundred and one segments of the right-of-way were described according to four mutually exclusive categories. "Marshy" areas could not be inspected; areas obviously "destroyed" by modern action such as road building were not consistently walked unless the edge of such an area affected the right-of-way; "clear" and "obscured" areas were non-marshy, non-destroyed segments which had, or lacked (respectively at least 5-10% exposure of bare ground. Table 2 shows the distribution of these categories for this survey.

TABLE 2

DESCRIPTION OF RIGHT-OF-WAY BY ARCHEOLOGICALLY RELEVANT QUALITIES

Description		Length (in miles) Along Right-Of-Way	Proportion (%) of Right-Of-Way	No. of Sites
Clear		14.2	53	0
Obscured		9.0	34	4
Marshy		2.8	10	
Destroyed		0.8	3	
	TOTAL	26.8	100	
Walked		23.1	86	
Not Walked		3.7	14	
	TOTAL	26.8	100	

There were 42 obscured segments measuring 47,240 feet--almost nine miles--in length. Subsurface testing by post-holing could clearly examine only a fraction of this, and the problem therefore, was to devise a reasonable sampling scheme. In order to minimize between-hole travel time, it was decided to sample in terms of the previously defined obscured segments that ranged from 180 to 7000 feet long. Postholes were located at 100 foot intervals on the center line. Only the first 1000 foot portion of each long segment was tested. Attempts to stratify this obscured segment sample in terms of environmental variables failed because of inadequate maps (e.g. of soil types). Finally it was decided to stratify the sample very simply, into three divisions--the 14 obscured segments nearest the Wateree Generating Station, the second 14, and the farthest 14. Minimally, this assured some representation of both riverine and inter-riverine environmental zones of the Congaree and North Edisto Rivers. At least one, but no more than ten post holes were placed in successive randomly selected segments until 30 post holes were excavated for each stratum. In this fashion approximately 20% of the obscured length of the right-of-way was tested at 100 foot intervals. Post holes were excavated to 60 centimeters; to water; or in some cases to a red, sandy clay at least 40 centimeters below the surface which appeared to be sterile subsoil. Earth excavated was shaken through 1/4 inch screen. No sites were discovered using this method of subsurface testing.

Post-holing was also done for this phase in two areas not included in the original sample. A decision to define the first section of line closest to the Wateree Generating Station as "destroyed" was reconsidered, and three post holes were located in a small obscured segment there. The last section of the right-of-way in the city limits of Orangeburg, about 2200 feet long, diverges from the existing power line. It was surveyed for construction plans while the archeological survey was still underway. Since the severest effects of power line construction are expected in wooded areas not already cleared for an existing power line (Smith 1977) post-holing of this entire obscured segment was done at 100 foot intervals. A summary of exploratory subsurface survey by post-holing is shown in Table 3.

All cultural material on the surface was collected in order to increase the size and objectivity of the artifact sample. Since all the sites lacked large contiguous exposures, the application of intrasite spatial controls was not practical.

Discovery and delimitation of subsurface remains was not deemed sufficient to evaluate the significance of sites for addressing various archeological problems. For example, left unanswered would be the fundamental question of whether a multicomponent site still preserved stratigraphic distinctions between its components. Subjectively placed post holes (Table 3) were used to determine the extent of subsurface cultural deposits at a given site. To enlarge the artifact sample and to derive a stratigraphically controlled sample, 50 centimeter (19 inch) squares were excavated at 38CL27 and 38CL29. The squares were placed at the points of greatest density of cultural material, as indicated by surface and subsurface concentrations. Fill removed from these small test units was sifted through 1/4 inch screen. The units were excavated by natural strata.

SITE INFORMATION

For the purposes of this report, an archeological site is defined as the contiguous space occupied by the material remains of human activities which are judged to be more than 50 years old. The four sites discovered by this survey are discussed in this section. All are in or very near the project area (Fig. 1). Table 3 lists excavation units by sites.

TABLE 3
TABULATION OF EXCAVATION UNITS

	No. Units	No. W/Artifacts
Exploratory Post Holes		
Stratum 1 (closest to Wateree)	30	0
Stratum 2	30	0
Stratum 3 (closest to Orangeburg)	30	0
Total	90	0
Additional Post Holes (see text for explanation)		
Redefined segment	3	0
Late-surveyed segment	11	0
Total	14	0
Site Evaluative Post Holes		
38RD155	6	0
38CL27	9	4
38CL28	4	0
38CL29	11	1
Total	30	5
Shovel Excavations 50 X 50 cm, 1/4" Screened		
38CL27	1	1
38CL29	1	1
Total	2	2

38CL27. This multicomponent site north of Halfway Swamp Creek and 20 m east of an artificial pond lay upon a well drained rise partially covered by ryegrass crop at the time of the survey. From evidence on and below the surface, the extent of the prehistoric component was about 40 m parallel to the right-of-way and about 50 m in the perpendicular northward direction. Excavations in the wooded area north of the site failed to show any further extension in that direction. The southern edge of the site appeared to coincide roughly with the center of the right-of-way. Thus about half of the right-of-way, for a length of 40 m, is considered to be included in this site.

Moderate damage has already been sustained by this site, in that the entire site has apparently been plowed at one time or another. Previous minor construction, probably in the early twentieth century, is seen in two old sheds now demolished. These possible tenant shanties are evidenced today by piles of debris on the site and undoubtedly also in the historic artifacts scattered over the surface of the site (Table 4). Decade-old S.C.E. & G. construction plans for the existing line show one 12' X 20' "old shed" in the area here designated as the site, and one 13' X 20' "old shed" just to the south of the prehistoric component. More currently, a field road is also contributing to the disturbance of the cultural resources.

TABLE 4

SITE 38CL27: ARTIFACTS AND PROVENIENCES

General, Complete Surface Collection

Lithics (Count/weight)	
Quartz: fire-cracked rock	3/73g
Chert : flakes of bifacial retouch	1/0.1g
chunks	2/19g
Ceramics (Sherd count/weight)	
Coarse sand-tempered plain, non-diagnostic (prehistoric)	1/3g
Historic ironstone (late 19th, early 20th centuries)	6/18g
Possible sherd of carbonaceous material	
Other	
1 large rusty threaded hex-headbolt	
1 fragment of blue glass	
1 fragment of "coquina-like" material: a cementation of marine shells	
6 rusted metal nails of 20th century type	

Posthole 3

Rusted piece of galvanized roofing

Posthole 4

Lithics	
Chert : flakes of bifacial retouch	2/<1g
other flakes	1/<1g

Posthole 5

Lithics	
Sandstone: Other flakes	2/2g

Posthole 9

2 clear glass fragments, concavo-convex

50 X 50 cm Test Unit - Level 1 (Cream-colored fine sand with artifacts, 0-10 cm below surface).

Ceramics (Sherds/weight)

Fine sand tempered Thom's Creek Punctate	1/7g
Fine sand tempered plain, with paste similar to the Thom's Creek Punctate sherd	5/7g

Other

Brickbat
Brown glass fragment-neck and lip of a bottle
Button-4 hole-plastic

50 X 50 cm Test Unit - Level 2 (Orange medium sand with artifacts, 10-40 cm below surface).

Lithics

Quartz:	fire-cracked	7/72g
	primary decortication	1/12g
	chunks	1/1g
Chert :	flakes of bifacial retouch	1/0.5g
	other flakes	1/0.5g
	primary decortication	1/0.5g
Sandstone:	secondary decortication	1/9g
	chunk	1/5g

Ceramics

Fine sand temper Thom's Creek punctate	9/84g
Fine sand temper plain, with paste similar to above type	6/36g

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The artifacts recovered, listed by provenience in Table 4, are consistent with the hypothesis of a single Thom's Creek prehistoric component. The stratigraphic change at 10 cm below the surface in the 50 cm excavation square (Table 4) was not reflected in a change in the artifacts at that point, although the very small sample size precludes any conclusive statement.

Thom's Creek Punctate (Waddell 1963) ceramics were recovered in both the natural strata observed at 38CL27. It is notable that the occurrence of artifacts crosscuts the natural strata. That this is a result of post-depositional mixing, as by cultivation, seems likely. Available data suggest a shallow, homogeneous cultural deposit consistent with a

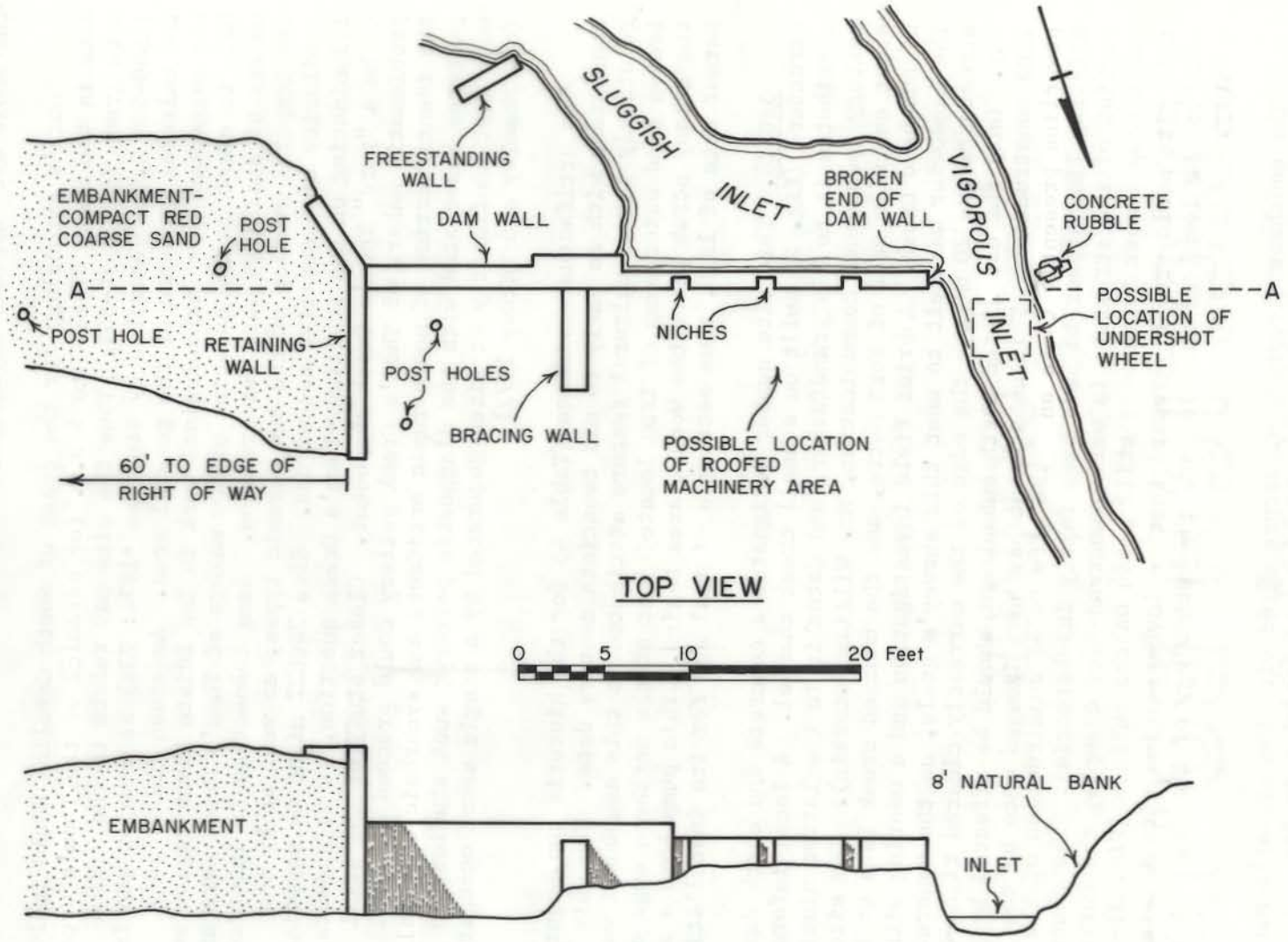
single brief occupation. Cultural material occurred in the range from 0 to 30 cm below the surface, but extropolation of this range to the whole site appears unjustified from such a small excavation unit.

South's chronology for the coast of South Carolina would imply a date in the range of 1800 to 600 B.C. for ceramics of the Thom's Creek ware group (1973: 54-55). Thus the site may relate to the period (1500-500 B.C.) described by Stoltman (1974: 236) as a major gap in the cultural sequence of the general area. Anderson (1975: 184) has suggested that archeological work in the Edisto River region would help to clear up the question of how makers of Thom's Creek ware and makers of Stallings ware were related. Some connection is inferred from the temporal overlap of the two ceramic types, as well as by the similarity of decorative techniques. Site 38CL27 might be especially illuminating on the Stallings-Thom's Creek question, as it appears to be a "pure" Thom's Creek component. Closer study of the still problematic makers of Thom's Creek pottery could proceed at 38CL27 through the identification of non-ceramic artifacts and synchronic cultural patterns associated with the diagnostic pottery; such studies can be made most confidently at sites generated by a single short occupation (cf. Moseley and Mackey 1972).

The artifactual evidence (Table 4) for the historic component was consistent with an early to mid twentieth century date. The only relatively intact cultural feature attributed to this component was a broken hand water pump of iron located just at the northern edge of the grassy scrub where the wooded area begins. This pump bore a molded patent date of 1918, thus setting a maximal age for its installation.

38CL28. This site number designates a concrete and earth dam structure (Fig. 2) built on a small creek channel. A local informant attributes it to his grandfather, and dates it to the latter nineteenth century (personnel communication, Mr. William Peterkin). The site is about one mile east of Fort Motte, and the unnamed creek is a tributary of Buckhead Creek. A brief field investigation and a meeting with the landowner was felt to meet this survey's goals, as the concrete structures are 20 m from the edge of the currently cleared right-of-way. Only the associated earth embankment should be affected by power line construction. This embankment has been damaged once by the powerline presently there, and the effects of construction of the existing line appear to have been fairly insubstantial. The concrete portion of the structure is well preserved--for example, the marks of rough-sawn lumber forms were still plain on the surface (Fig. 3)--and this site sould probably reward further investigation with interesting data on the local engineering and the technology of the latter nineteenth century.

The southwest-fronting structure acted with the probable natural rises facing the southeast, northeast, and northwest to form an enclosure (Fig. 4), or a small reservoir. In conjunction with regulated flow past a water mill of some kind, such a pool could have evened out, over time, the flow of the intermittent stream, such as the creek is shown to be on a U.S.G.S. map of 1943.



38CL28: HISTORIC STRUCTURE OF EARTH AND CONCRETE (POSSIBLE WATER MILL)

FIGURE 2

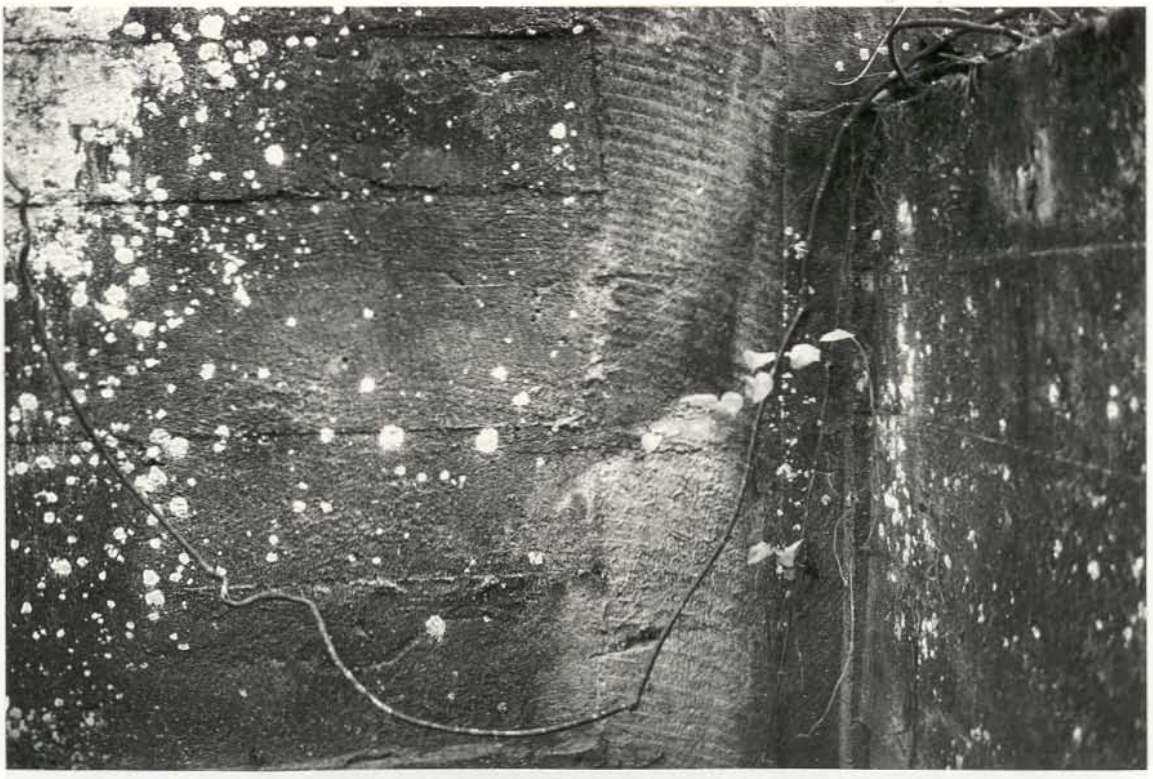


FIGURE 3. Impressions of Lumber Forms on Concrete at 38CL28.

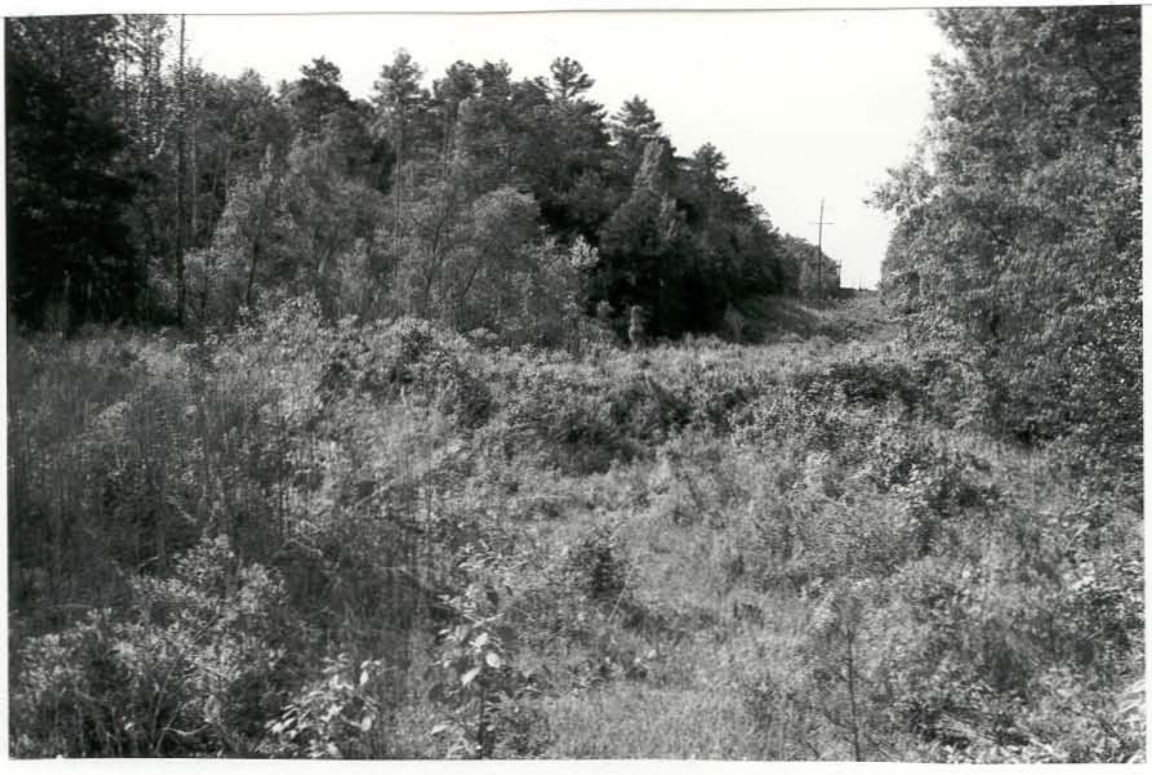


FIGURE 4. Artificial Embankment and Natural Landforms at 38CL28.

FIGURE 5. Large Trees on Embankment at 38CL28.

The earth embankment was identified as artificial by its abrupt, regular cross-section and its nearly rectilinear plan. Some antiquity was indicated by the 40-50 cm (15" to 19") diameter hardwoods rooted fully within it (Fig. 5). Several meters to the southeast of the cleared right-of-way, the embankment diverged from a ridge of natural appearance to run northwestward, perpendicular to the right-of-way. It crossed the cleared area and ran about 20 m into the woods on the far side. About 2 m high and 5 m thick at the base, the embankment appeared to be wholly constructed of earth; the excavation of one post hole at an angle into its base to about 60 cm did not contradict this idea by revealing, for example, a rubble core.

The longitudinal thrust of this embankment was countered, 20 m off the northwestern side of the right-of-way, by a concrete retaining wall (Fig. 2). Three meters of the wall were perpendicular to the axis of the embankment, while the 2 m southwestern segment of the retaining wall abutted the perpendicular segment, but was oriented about 35° toward the embankment. From the juncture of these segments, the 0.6 to 1.6 m high (measured from dry ground level behind the dam) concrete dam proper carried the axis of the embankment northwestward about 10 m, ending jaggedly at the point where the 0.6 to 1.6 m wide creek flowed through (Fig. 6). On the steep but natural bank across the stream was some evidence of a possible former continuation of the structure in the form of several 5-10 lb. pieces of concrete rubble. The final contiguous structural feature was a low (1 m), short (2 m), thick (0.5 m) "bracing wall"--possibly a misnomer for a portion of a shelter for mill machinery. The bracing wall was on the dry side of, and at right angles to, the dam wall which it buttressed. A length of the dam wall was thickened on the opposite or wet side, where it met the bracing wall. A short freestanding wall about 6 m in front of the dam appeared to divert a sluggish arm of the creek for about 1 m.

When observed, the entire structure appeared to do no more than to divert one slow branch of the braided and meandering creek by about 10 m. A pool fed by both a stagnant and an active branch of the creek is presently contained by the structure. It is as much as 2 m deep.

No nonstructural artifacts were found on the surface in the site vicinity. Two post holes excavated behind the dam and two in the embankment also yielded negative evidence. No other structures or machinery suggestive of a water mill were observed.

Discussion of the site with Tom Langhorn of the Institute staff centered on the hypothesis that the site functioned originally as a water mill of some kind, possibly a sawmill or cotton gin. If so, an undershot wheel probably would have been used, as the drop in the creek is small at the site. Valuable machinery might have been throughly salvaged after operations ceased. Wooden parts of the structure comprising floor, partial walls, and roof, also have been salvaged, or may have been completely decayed in this very humid area. Small fragments of rotten wood embedded today in small cylindrical holes at the bottom of niches in the dam wall (Fig. 2) may evidence such supporting posts. If the mill hypothesis is

incorrect, it seems that some other economically important function must be postulated for the structure, as a substantial investment of labor was made for its construction. Over 20,000 cubic feet of earth were transported for the embankment alone.

38LC29. This multicomponent prehistoric site, like the historic dam structure at 38CL28, is situated near (70 m east of) a tributary of Buckhead Creek, close to the stream's confluence with the Congaree River. The site covers an entire well-drained hilltop whose surface was partly exposed by an overgrown field. Surface indications and post-holing showed that the site extended at least 90 m along the right-of-way. Excavations in the woods on either side of the right-of-way failed to show any cultural material. The right-of-way edges coincided with natural downslopes at either end of the indicated 90 m segment. This topography makes plausible the suggestion that the site's extent is as suggested--lower elevations in this vicinity tend toward marshiness, thick, thorny vegetation, and hostile insects and snakes, which may have made them less desirable areas for habitation even in prehistoric times.

Information on the site's artifacts by provenience is recorded in Table 5. The ceramic artifacts imply occupation during two major cultural periods. The Thom's Creek Punctage type is placed in the Thom's Creek ware group which dates on the coast to the 1800 B.C. to 600 B.C. interval, whereas the Deptford Linear Check Stamped type (Caldwell and Waring 1939: 8-9; Griffin and Sears 1950) of the Deptford Ware group would fall in the interval from 800 B.C. to almost A.D. 800 (South 1973).

Extensive subsurface extent has not been demonstrated for this site: of 11 post holes, only one yielded cultural material. However, the 100 cm square excavated adjacent to the successful posthole recovered a substantial amount of material (Table 5). Uncritical acceptance of the subsurface results would imply an area of stratified occupation of less than 100 square meters. It is possible that a small site was dispersed over the hilltop by cultivation so that its original area was magnified, but so thinly that post holes did not detect cultural debris outside the original area. Alternatively, a small archeological component may have been overlain by a later and larger one. Further work must be done before the nature of this site is clarified.

There seems to have been relatively little historic damage to the site. The construction of the existing power line has probably had the most effect to date. Clearing, possibly several times over, is indicated by the secondary pine forest around the hilltop, and cultivation has also affected the cultural resources there.

TABLE 5

SITE 38CL29: ARTIFACTS AND PROVENIENCES

General, Complete Surface Collection

Lithics (Count/weight)

Quartz:	fire-cracked rock	13/118g
	primary decortication	2/17g
	flakes of bifacial retouch	6/5g
	other flakes	3/1g
	chunks	5/12g
Chert :	flakes of bifacial retouch	19/6g
	other flakes	4/5g
Slate :	flake of bifacial retouch	1/0.1g
	projectile point with tip broken, about 3cm long, corner notched	
Micaceous siltstone:		
	flake of bifacial retouch	1/0.2g
Unidentified igneous rock with glassy inclusions:		
	primary decortication	1/62g
Unidentified granular rock:		
	other flake	1/3g
Possible quartz/quartzite:		
	cobble tool with battered edges	1/183g

Ceramics

Sand tempered linear check stamped	10/88g
Sand tempered punctate	5/14g
Coarse sand tempered plain	13/56g
Coarse sand tempered "stick bundle" punctate	5/20g
Fine sand temper or "temperless" plain	4/39g
Historic sherds, non-diagnostic	8/10g

Post Hole 5

Lithics

Chert:	flakes of bifacial retouch	5/1g
	other flakes	2/2.5g
	chunks	1/0.7g

100 X 100 cm Test-Unit Level 1 (light brown medium sand with artifacts, 0-20 cm below the surface)

Lithics

Quartz:	fire-cracked rock	3/17g
	primary decortication	1/8g
	flakes of bifacial retouch	4/3g
	other flakes	2/1g
	chunks	2/6g

Chert :	flakes of bifacial retouch	30/10g
	other flakes	5/3.5g
	chunks	5/15g

Ceramics

Sand tempered linear check stamped 1/25g

Other

1 piece of aromatic pinewood, about 7 cm long, sharpened to a point at one end, beveled smoothly at the other (probably of recent origin)

1 piece of aromatic pine wood about 8 cm long, possibly worked to a rough point at one end, broken at the other

100 X 100 cm Test Unit-Level 2 (Yellow-brown fine sand with artifact density decreasing with depth and approaching zero at 50 cm below the surface; very pebbly; extends to 55 cm, where it yields to coarse red clayey sand with few pebbles)

Lithics

Quartz:	fire-cracked	8/50g
	primary decortication	6/18g
	secondary decortication	2/2.5g
	flakes of bifacial retouch	1/<1g
	other flakes	1/<1g
	chunks	2/1g
	1 small decortication flake with possible wear marks	1/<1g
	1 half, neatly split longitudinally, of a thick, biface 2 cm long with a recurved edge	
Chert :	flakes of bifacial retouch	14/4g
	other flakes	3/1g
	chunks	2/1.5g
	1 biface about 2 cm X 3 cm, rectangular, with 3 well-worked edges	

Other

1 fossil seed-manuport?

38RD155. A low-lying area covered by mixed pines and hardwoods about a mile from Bates Old River (now a tributary of the Congaree and possibly a former Congaree channel) is the setting for this isolated projectile point fragment. A large borrow pit 2 m deep and at least 10 acres in area, probably due to the construction of U.S. Highway 601, most likely exposed the artifact which was found by surface inspection in an eroded area just above the pit's edge. The point fragment was made of heat-treated chert. It was not identified as to type because the base was broken off, but it was roughly lozenge-shaped and about 3 cm long. Despite close inspection of the disturbed surface nearby and six post hole samples, no other trace of aborginal activity was observed. Only a nondiagnostic historic ceramic sherd, also from the surface, was found on the site. Any other cultural material may have been obliterated by the borrow pit.

RECOMMENDATIONS

Effects of Power Line Construction and General Recommendations

A previous report on an archeological survey for a South Carolina powerline (Smith 1977) has argued that the principal effects of overhead powerline construction are results of four construction activities. In order of decreasing potential for impact on archeological resources, these activities are: (1) the use of power equipment in the clearing of woody vegetation, (2) roadbuilding and general improvement of access to the resources, (3) the movement of heavy equipment over archeological sites, and (4) the augering of relatively small holes for the wooden poles commonly used to carry high-voltage transmission lines.

For the Wateree-Orangeburg project, one principal effect is expected to derive from clearing to widen the right-of-way over its forest-bordered portion--roughly 30% of the whole. Widening will typically involve the clearing of 15 foot wide strips on either side of the existing right-of-way. If activities are confined to the narrow areas actually being cleared and to the previously affected existing right-of-way, damage will be minimized.

Roadbuilding is not planned for the Wateree-Orangeburg line, so that increased public access, with more unauthorized and unscientific relic collecting, will be a minor factor for this project.

The movement of heavy machinery over unprepared ground may cause significant confusion of the stratigraphic information which is vital to interpreting archeological sites (Smith 1977). The general recommendation to minimize this problem is that known sites be bordered, as by stakes and flagging, so that construction crews may avoid driving through them. The purpose of the markers should be kept confidential, and they should be kept in place for the shortest possible time. Contracts let for construction activities should stipulate that bordered areas should not be driven over. To implement these recommendations at a future date, a permanent marker should be placed as soon as possible at the site to serve as a reference point for laying out the bordered area. The location of this marker should be noted on the detailed construction plans for the transmission line, to facilitate its later relocation.

The threat to cultural resources of the excavations for the powerline structures can best be met by planning their locations outside known sites. If this is impractical for engineering reasons, then consultations with an archeologist are recommended; further work at the site might be desirable.

The Significance of Archeological Sites

The total impact of a construction project on a given resource depends not only upon the physical results or effects of the project, but also on the significance of the particular occurrence of the resource--here, an archeological site. For archeological resources, the usual criterion for evaluating significance is a scientific one. That is, the site is significant in the degree to which it promises to be relevant to archeological theory, which like all anthropological theory is an attempt to discover why humans behave as they do. This criterion necessarily involves subjective judgement, but its use permits the discrimination of degrees of archeological significance for specific cultural resources.

Specific Site Recommendations

38CL27. A synchronic study of a small, possibly once-occupied Thom's Creek component in the inland Coastal Plain of South Carolina would have obvious relevance to the problems of how humans exploited that region prehistorically. Thus it appears that site 38CL27 possesses at least moderate archeological significance. As to the effects here of construction, subsurface testing implies that the right-of-way may not include the stratified area of the site. However, the evidence from limited testing is not conclusive, and both construction crews and structures should be excluded from the entire site area. At this site, a 60 m square area should be bordered, but a corridor through it will be necessary to allow the public's customary use of the field road running through the site. If the corridor is no wider than the previously eroded roadbed, then no important damage will be done to the site. The midpoint of the northern side of the square will be the old hand water pump at the woods edge. The northwestern side will be taken as the generalized tree line north of the site, and it will run 30 m northeast and 30 m southwest from the pump. The eastern and western sides will be perpendicular to the generalized tree line, and will be 60 m long, thus automatically defining the last side of the square.

38CL28. The technologically interesting concrete portion of this historic structure is 20 m from the right-of-way edge as currently cleared, and should not be affected by construction activities. However, to assure that no accidental impact occurs, it is recommended that the right-of-way between existing structures numbered 206 and 207 be widened on the side opposite to the site, that is, on the southern side.

38CL29. This site covers a commanding hilltop upon which engineering considerations are likely to force placement of a structure. The consequent excavations and construction traffic would certainly damage the site, which appears to extend completely across the right-of-way. Site 38CL29 offers a chance to examine the temporal and cultural relationships of two major prehistoric cultural phases in the Coastal Plain--Thom's Creek and Deptford. Modern disturbance appears to have been fairly minor and may not have affected the entire depth of culture-laden deposit,

which appears to be about 50 cm (19"). A preliminary question is whether the apparently small stratified extent of the site will yield an adequate sample of artifacts for such an intrasite study.

Further work to answer this question will be needed in the event of the location of a power line structure in this site. Recommended in that event would be a spatially controlled surface collection and systematic subsurface testing. These measures should determine whether more than one locus of prehistoric activity exists at this site, and should establish the precise extent and nature of the subsurface deposits so that an accurate assessment of archeological significance can be made.

38RD155. No further action is recommended for this site, which is defined on the basis of one prehistoric point fragment and one historic potsherd.

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