TABLE 34

ASPECT SETTINGS OF PREHISTORIC SITES

Aspect	Count
Flat	40
North	69
Northeast	13
East	71
Southeast	28
South	83
Southwest	15
West	79
Northwest	26

MANAGEMENT CONSIDERATIONS

The site location data and collection analyses which have been presented can be used to develop a series of recommendations for the management of archaeological cultural resources within the "problem areas" of the Kent County portion of the proposed Route 13 Corridor. The main types of recommendations to be presented here are maps of sites of various significance for each of the problem areas.

ASSESSMENTS OF SITE SIGNIFICANCE

The first cultural resource planning study of the Route 13 Corridor (Custer et al. 1984:113-129) developed a basic interpretive framework for the assessment of prehistoric and historic archaeological site significance. All sites noted on the maps included with the first report received a preliminary significance assessment based on the data available at that time. The present report mainly provides refined assessments for sites within the problem areas. The refined assessments are based on the more extensive site-specific data gathered during the field survey. For the most part, the original report's framework for determining site significance was utilized. However, in a few instances this framework was altered in light of new information and these alterations are discussed below.

For prehistoric and historic sites discovered during field survey of the study areas, all unplowed sites were considered to

be of high significance because the survey data showed that the uplowed fringes of cultivated fields along major drainages and unplowed, isolated well-drained knolls within poorly-drained woodlands contained undisturbed and intact sites which could yield important data. It is also important to note that in many cases the sites which were found during subsurface testing of wooded, unplowed areas may be quite different from those identified from surface survey of plowed fields.

Any plowed sites with Archaic or late Paleo-Indian components were also considered to be of high significance and certainly eligible for listing on the National register of Historic Places. These sites are all considered significant because they are rare and will provide important imformation on a poorly known period of Delaware's prehistory (Custer 1983). It should be noted that plowed Archaic and late Paleo-Indian sites are included because even when plowed these sites can yield significant information. However, if a site was plowed and had been subjected to extensive erosion, it was not considered to be of high significance.

All plowed base camp sites from all time periods were also considered to be of high significance with a high probability of being eligible for listing on the National Register of Historic Places. Macro-band base camps, micro-band base camps, and generalized base camps are included here and are sources of data on a wide range of prehistoric activities. As was the case with Archaic sites, plowed sites are included in this significance category as long as they are not also disturbed by significant erosion.

All of the sites in the high significance category would require at least Phase II testing to determine their eligibility for listing on the National Register. In some cases, mainly the plowed sites in the high significance category, Phase II testing may be sufficient to mitigate any adverse effects on the site. However, all the unplowed sites would most likely require Phase III data recovery.

A second category of sites of medium significance was also recognized and consisted of all plowed historic sites and any non-procurement plowed prehistoric sites associated with bay/basin features. These sites all would probably require at least Phase II testing to determine National Register eligibility. However, they would probably only require Phase III data recovery if subsurface features were encountered. The historic sites would be the most likely sites to contain subsurface features in this category.

Two additional categories of sites encountered during the field survey were also recognized. The first was a category of low significance which included sites which would not require Phase II determination-of-eligibility testing. All plowed, disturbed, and eroded sites fall into this category along with plowed procurement sites. The final class of sites noted is

comprised of sites of unknown significance. For the most part, plowed sites for which no function can be determined comprise this category. Appendix VIII lists the various sites by significance categories and study areas.

Assessments of historic site significance built from the basic assessments presented in the original report (Custer et al. 1984: Appendices II and III), but also included data from the field checks of the historic structures and potential archaeological sites taken from the various atlases. An index of archaeological potential was developed for each historic site listed in Tables 20-28 and this index was based on the following data:

1. Preservation: Sites containing well preserved structural, faunal, floral, or skeletal remains are more significant.

2. Multi-Function (Number and type of outbuildings): Sites exhibiting a range of well-defined activity/functional loci are more significant.

3. Size and Density (Number and type of archaeological features): Larger sites and those containing dense deposits of material culture are more significant.

4. Duration of Occupation: Sites exhibiting descrete temporal loci whether in the context of long-term or short-term occupations are more significant.

The archaeological significance ratings and historical significance ratings, which were taken from the work of the BAHP and the first Route 13 planning study (Custer et al. 1984:27), were combined to produce a four level system of ranking total cultural resource potential for the historic sites. The sites of the highest significance had high historic significance and high archaeological potential and the lower ranks had lesser composite rankings. Appendix IX lists the varied sites by area and total cultural resource potential categories. The historic significance and archaeological potential rankings are also noted in Appendix IX.

CULTURAL RESOURCE PLANNING MAPS

The various significance categories of sites listed in Appendices VIII and IX were plotted on a series of large scale maps, which are included as attachments to this report.

Attachment I consists of maps of all known prehistoric sites of various significance levels for each study area. Where no site-specific data are available, the probability zones from the

first report (Custer et al. 1984: Attachment V) were plotted for the study areas. For the Blackbird area, the probability zones were adjusted in accordance with the new findings of this report.

Attachment II consists of maps of all known historic sites of various significance levels for each study area. Again, where no site-specific data are available, a series of predictive zones were plotted. These historic predictive zones were plotted on the basis of the predictive zones noted in the original report (Custer et al. 1984: Attachments VI and VII) and the descriptions of typical site settings noted in Table 35.

TABLE 35

TYPICAL HISTORIC SITE LOCATIONS

Site Type	Water Dis(km)	Percent Class I Soil (%)	Min. Cross Road Dis(km)	Nav. Water Dis(km)	Road Dis(km)	R.R Dis(km)
General	1.9	66	6.5	1.4	1.1	N/A
p1802	1.9	64	5.1	.7	1.2	N/A
1802-1849	1.7	70	6.3	1.3	1.0	N/A
1849-1868	1.8	64	6.5	1.5	1.2	3.6
1868-1893	2.4	67	7.7	1.7	.9	3.3
Agricul-tural	1.9	70	6.3	1.4	1.0	1.8
Non-agricul-tural	1.2	49	7.0	1.3	1.1	2.5

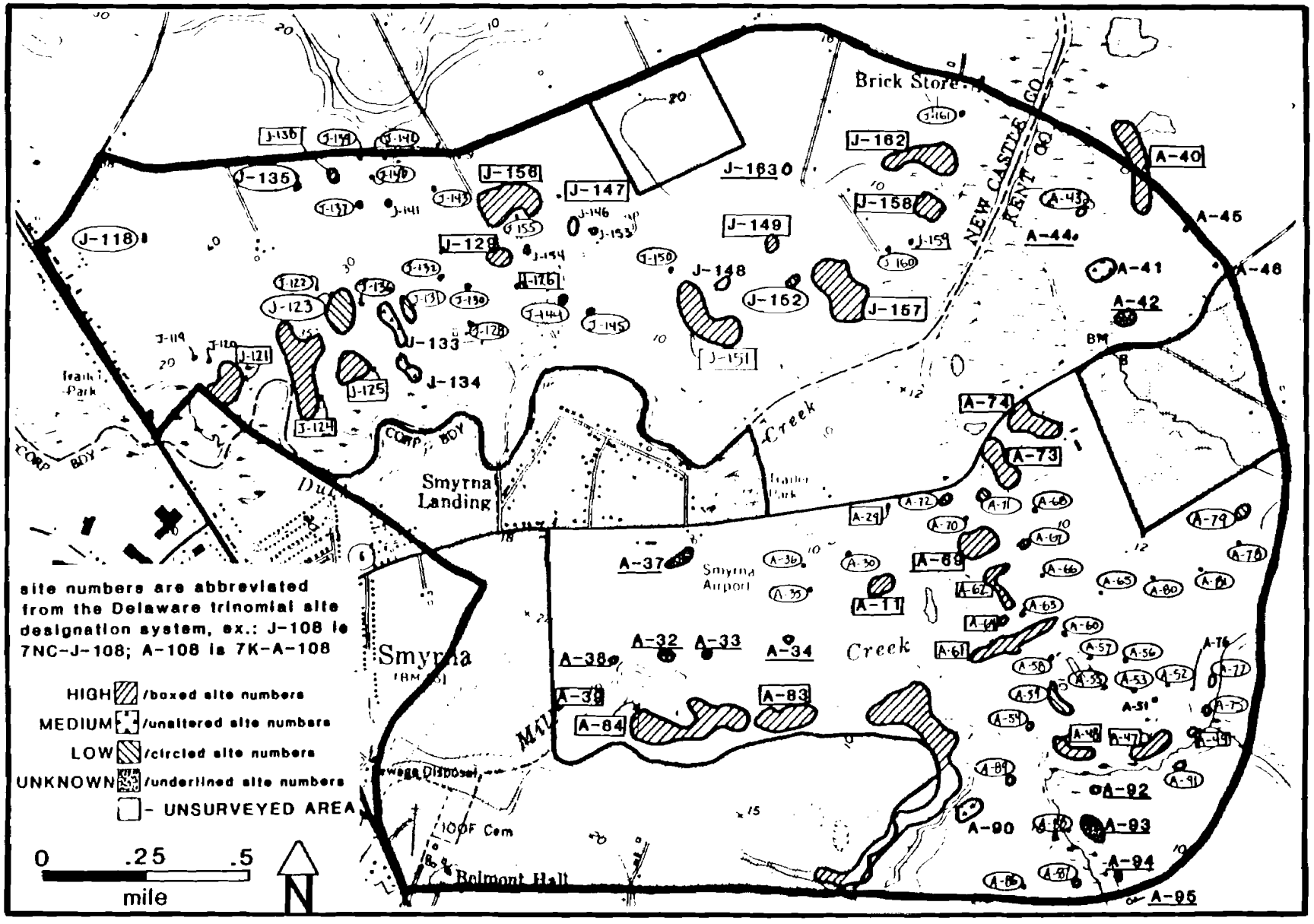
Attachment III provides composite site significance maps for the study areas and these maps can be used as guides to the Route 13 Corridor planning within the study areas. These maps represent the best current data on archaeological cultural resource sensitivity for the nine study areas.

FUTURE MANAGEMENT AND RESEARCH ISSUES

This final part of the report will consider some specific management and research issues which go beyond the scope of the general management considerations considered up to this point. An important management issue to consider is the individual assessment of the uniqueness of sites in relation to their significance. Table 36 shows the frequencies of prehistoric sites of various types within the study area, the entire Delmarva Archaeological Data System (DADS), the entire state of Delaware, the High Coastal Plain, the Low Coastal Plain, and the general

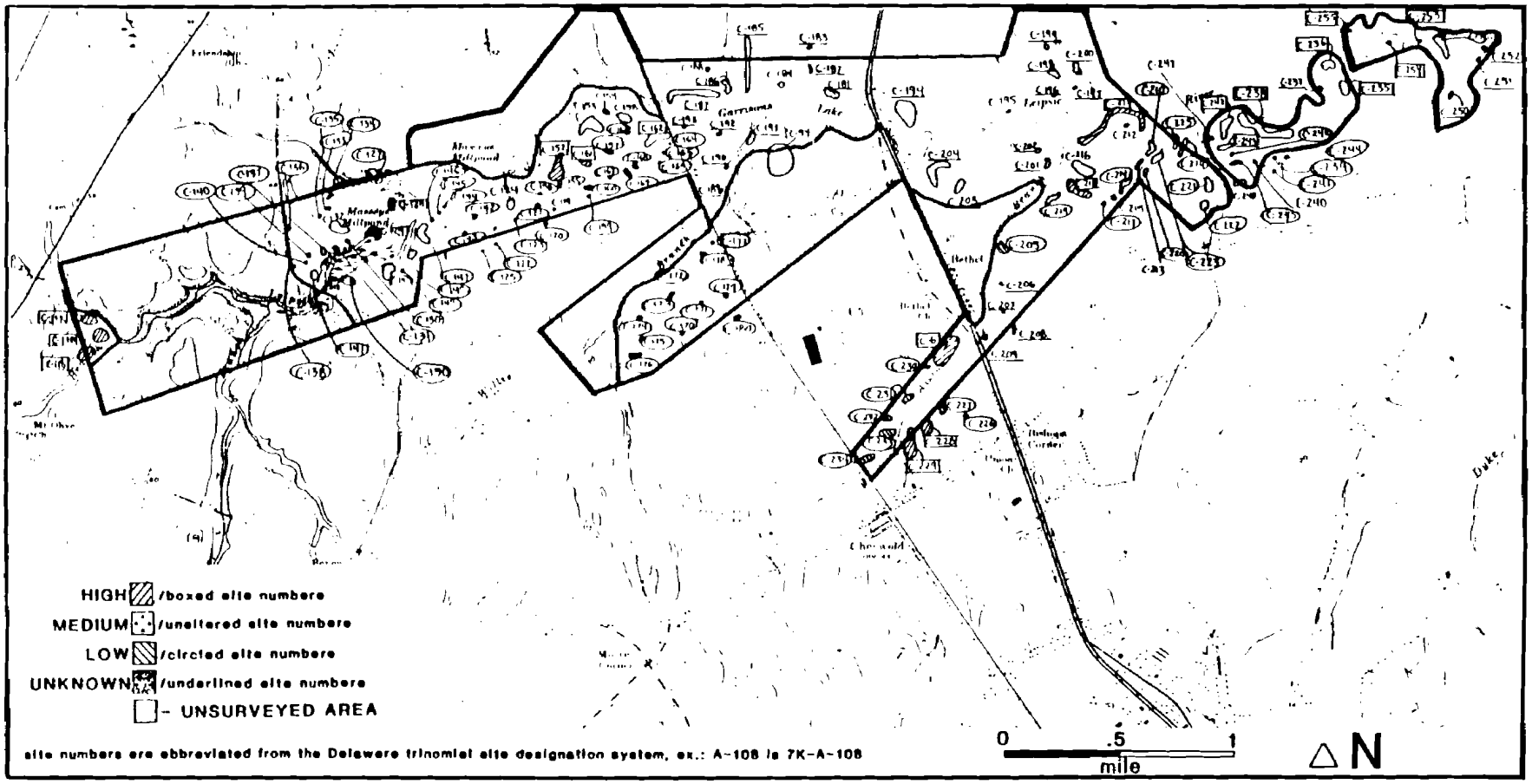
ATTACHMENT I

Prehistoric Sites by Significance Categories for the Smyrna Study Area 12



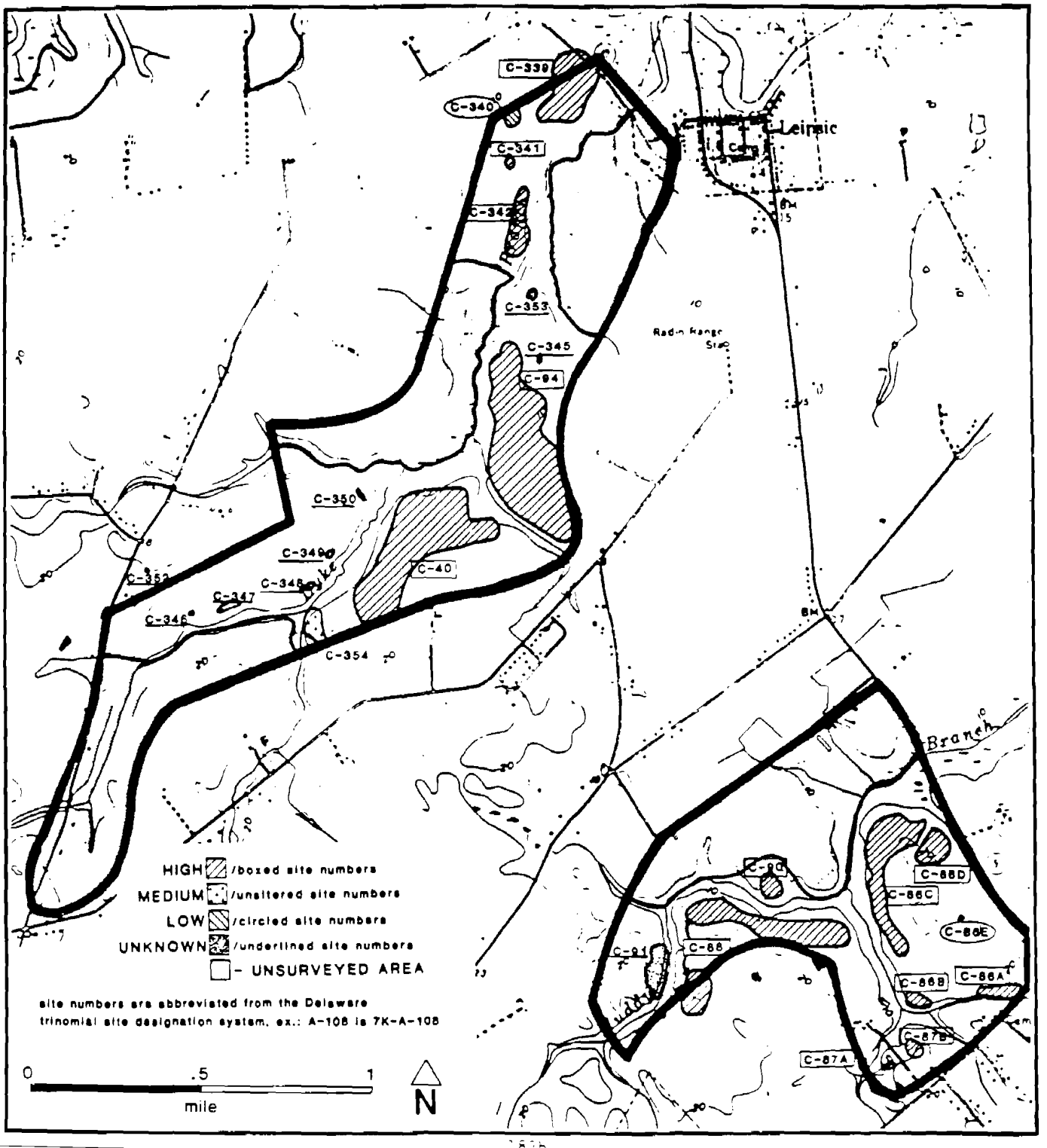
ATTACHMENT I

Prehistoric Sites by Significance Categories for the Leipsic Study Area 3



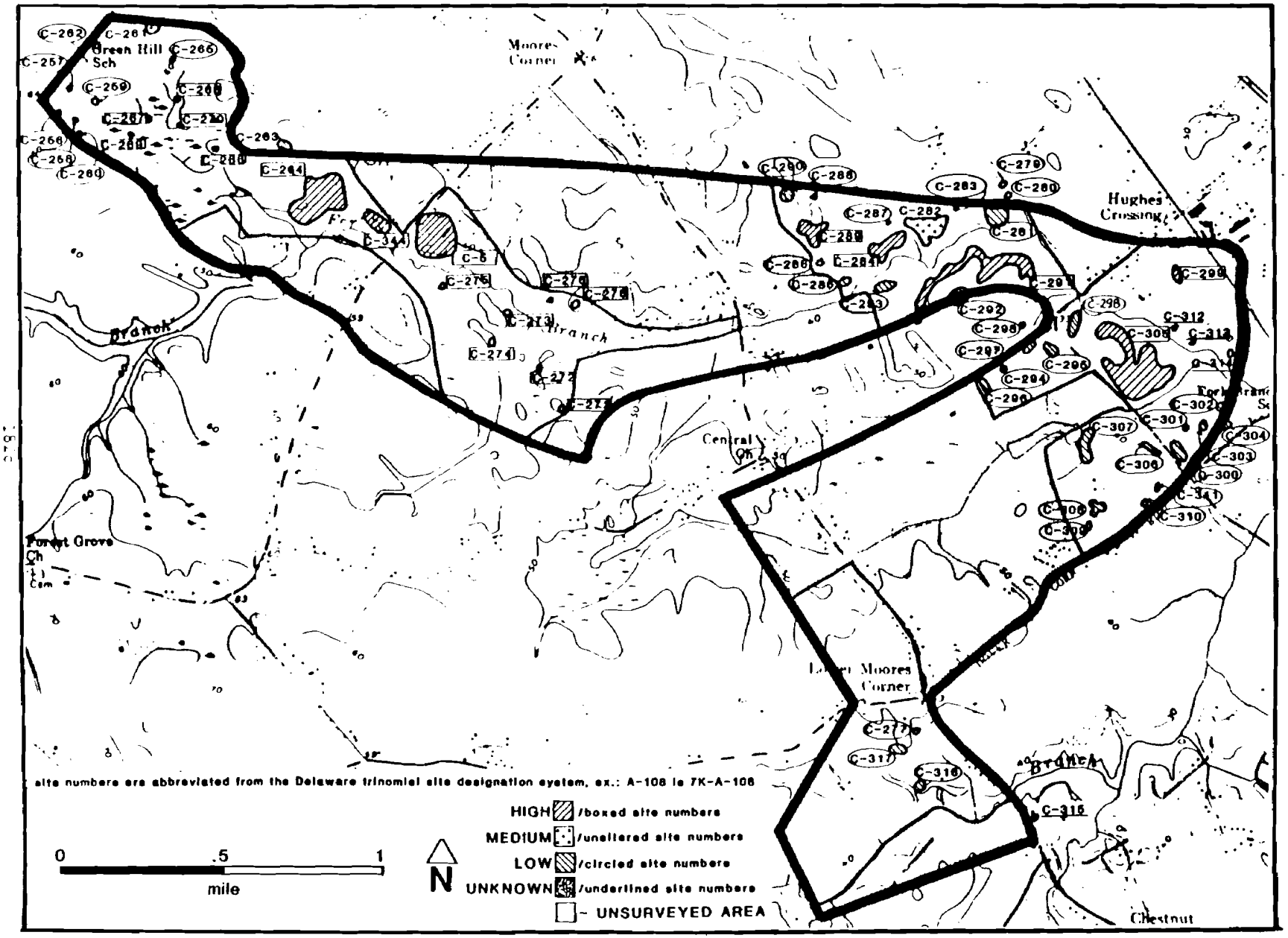
ATTACHMENT I

Prehistoric Sites by Significance Categories for the Dyke and Muddy Branches Study Area 10



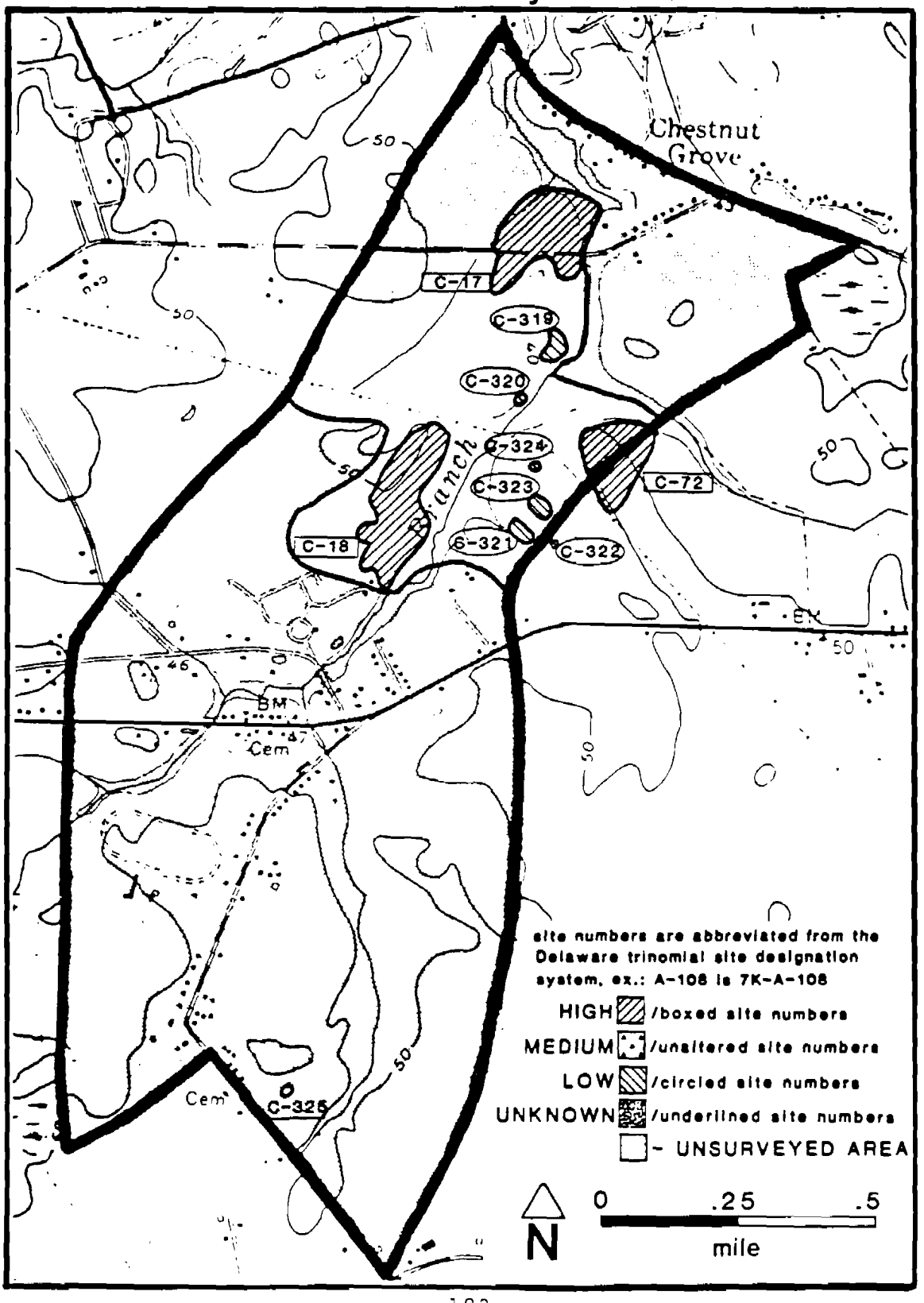
ATTACHMENT I

Prehistoric Sites by Significance Categories for the Hughes Crossing Study Area 6



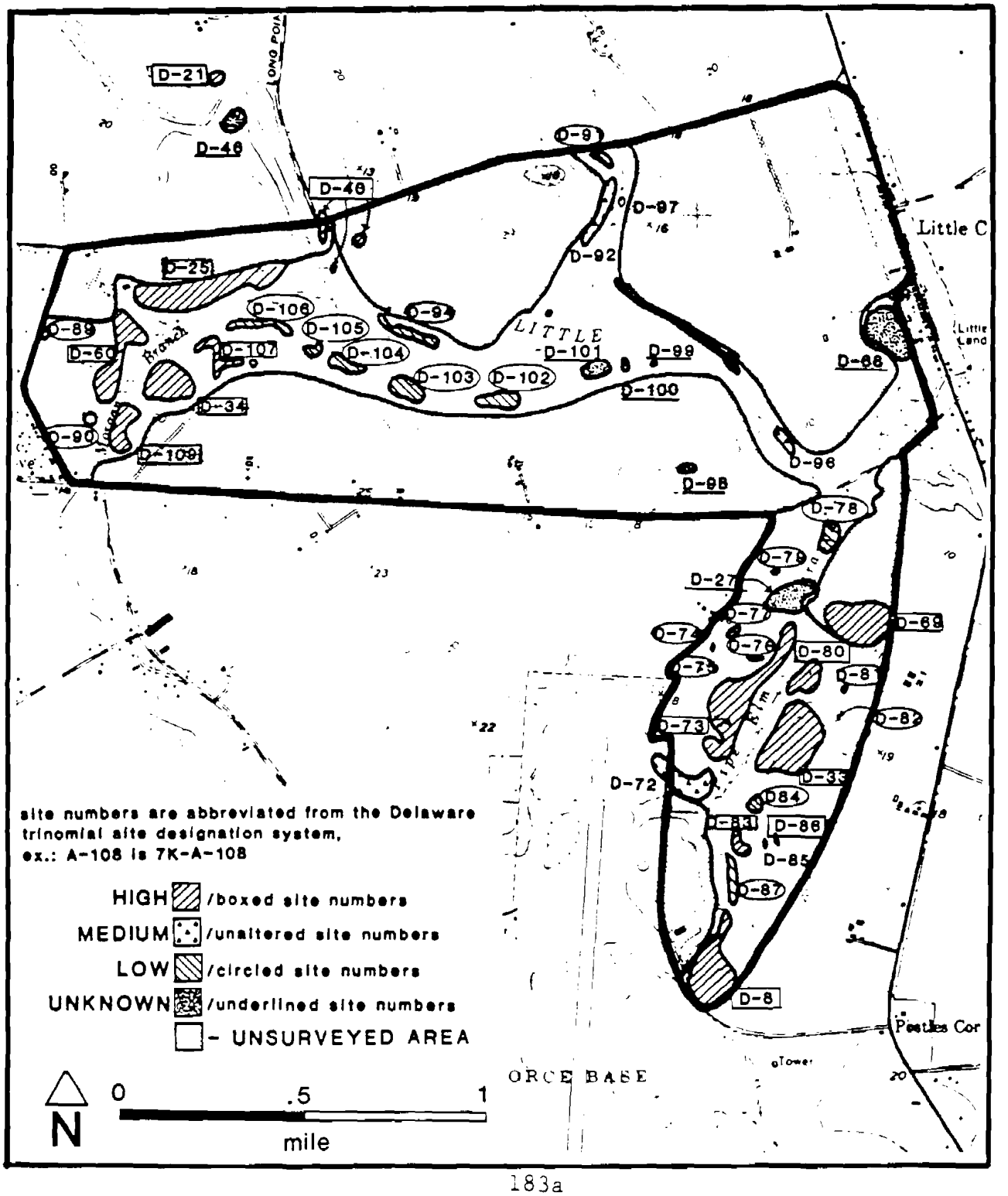
ATTACHMENT I

Prehistoric Sites by Significance Categories for the Chestnut Grove Study Area 8



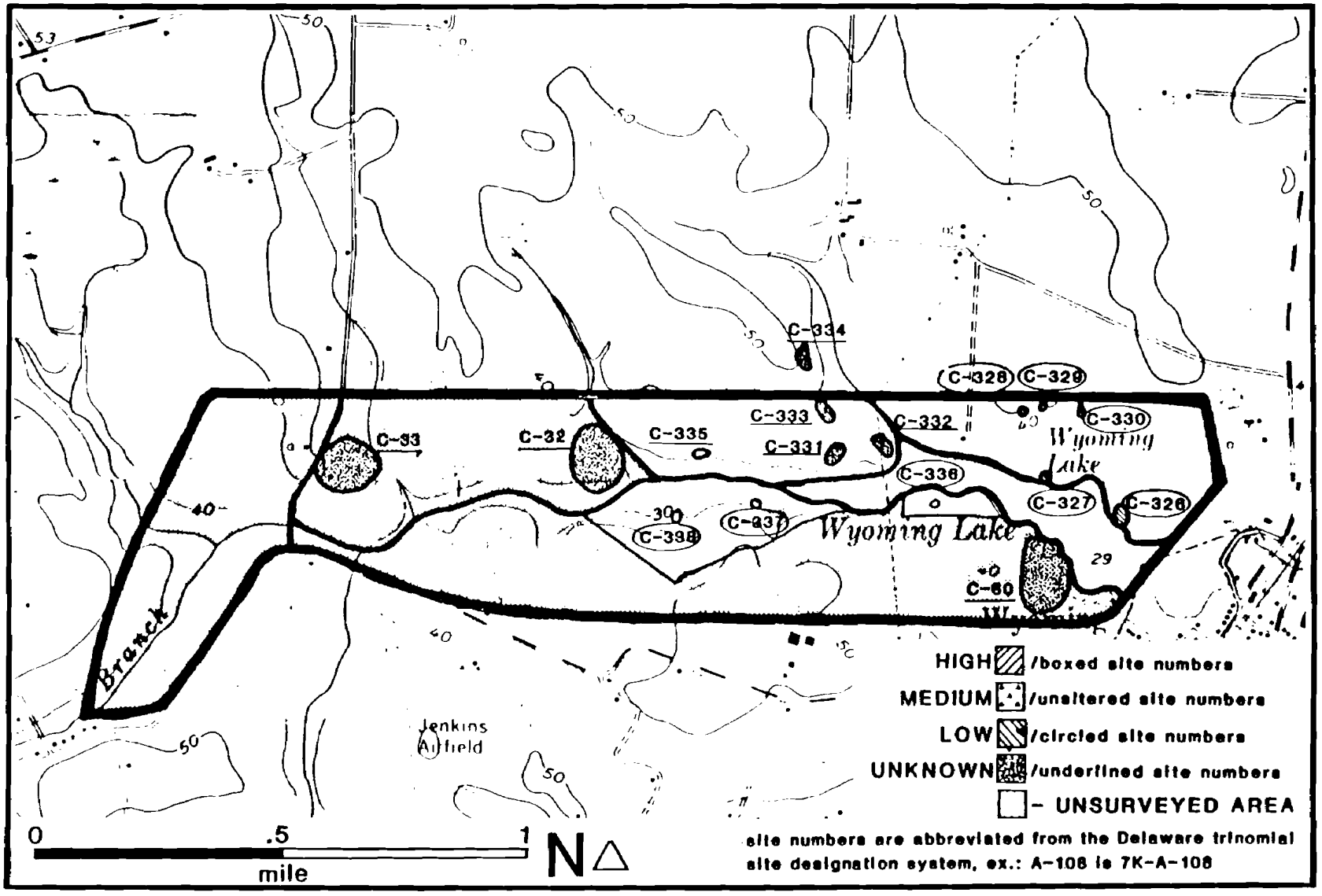
ATTACHMENT I

Prehistoric Sites by Significance Categories for the Little River/Pipe Elm Branch Study Area 5



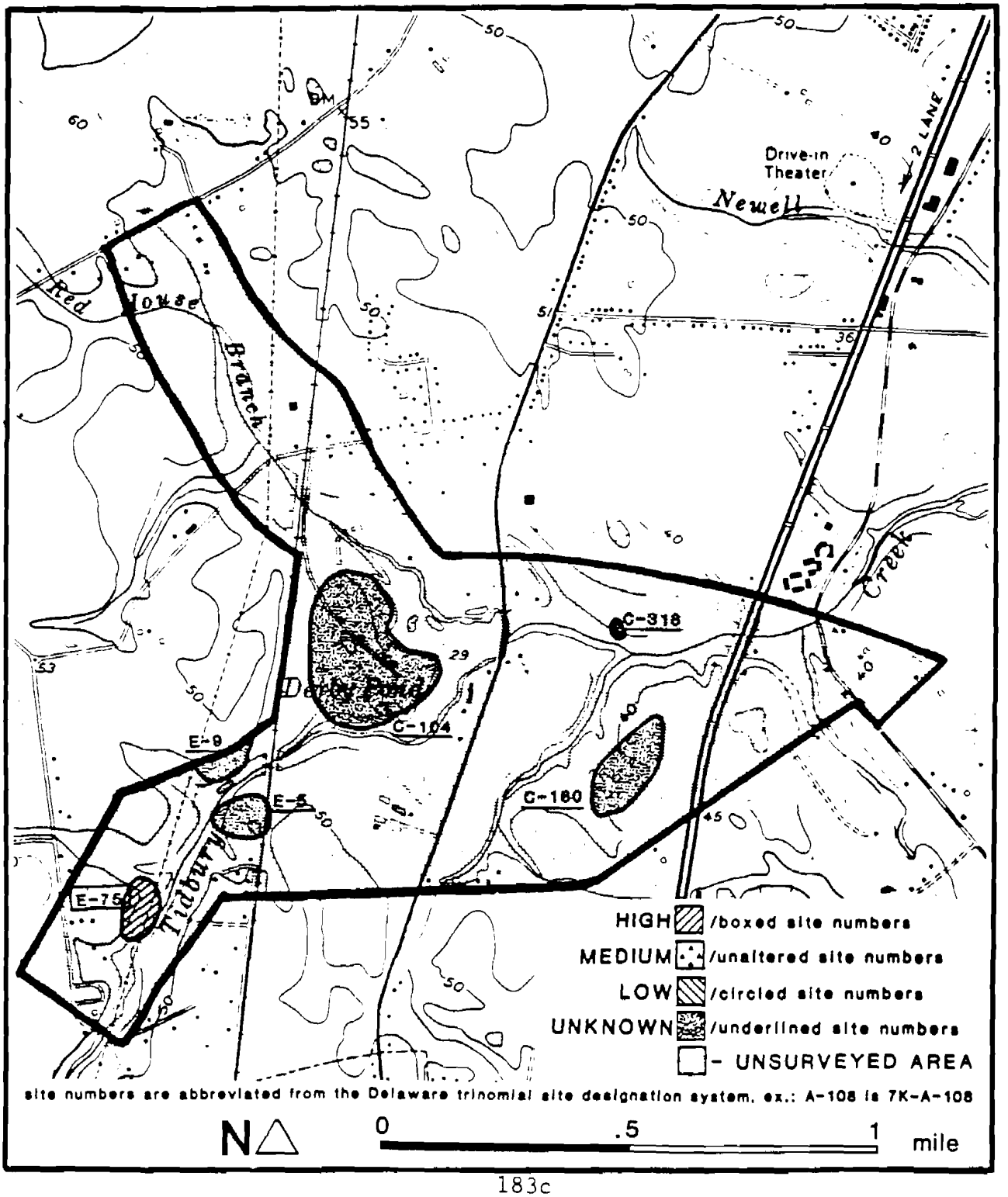
ATTACHMENT I

Prehistoric Sites by Significance Categories for the Wyoming Lake Study Area 9



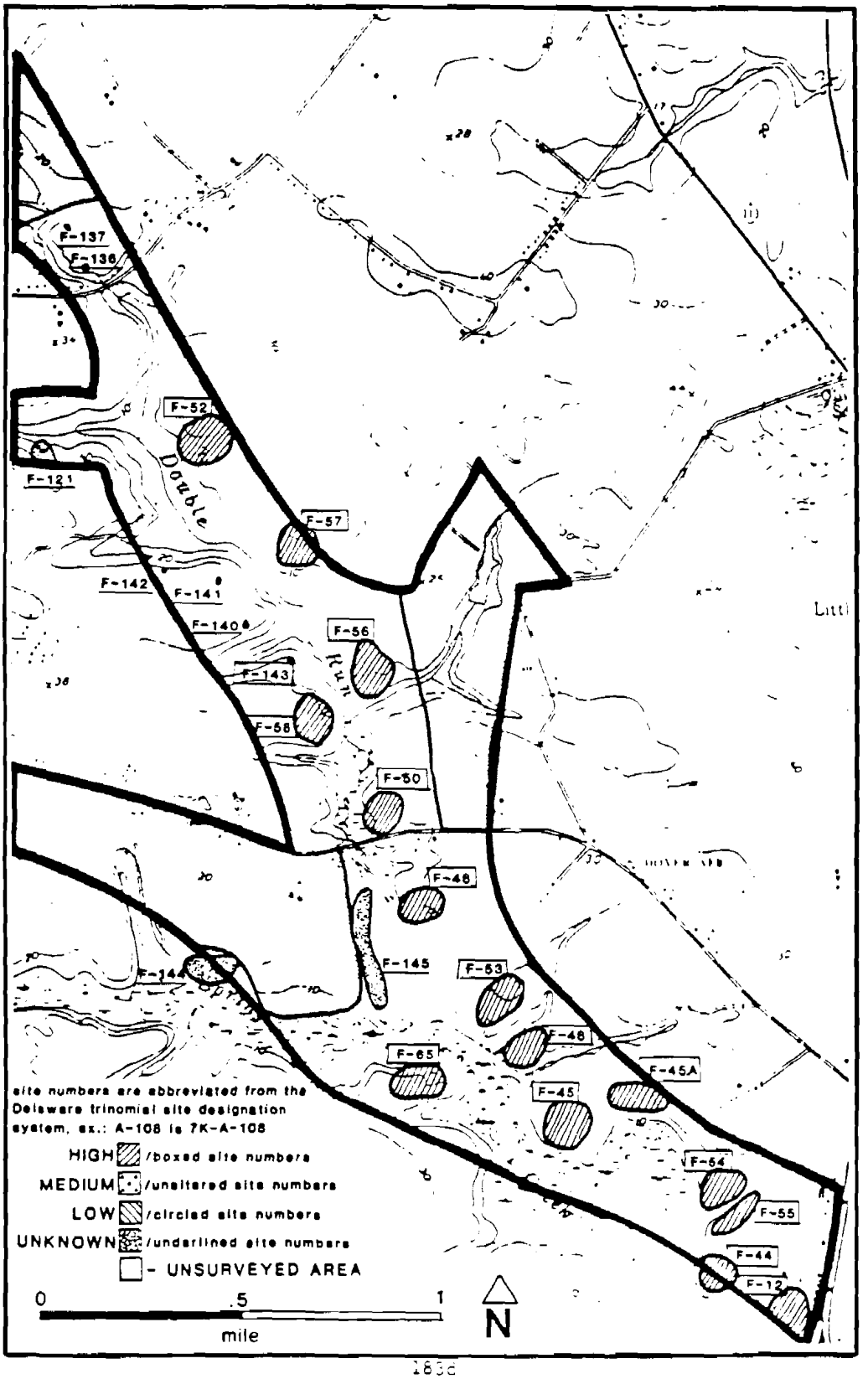
ATTACHMENT I

Prehistoric Sites by Significance Categories for the Derby Pond Study Area 7

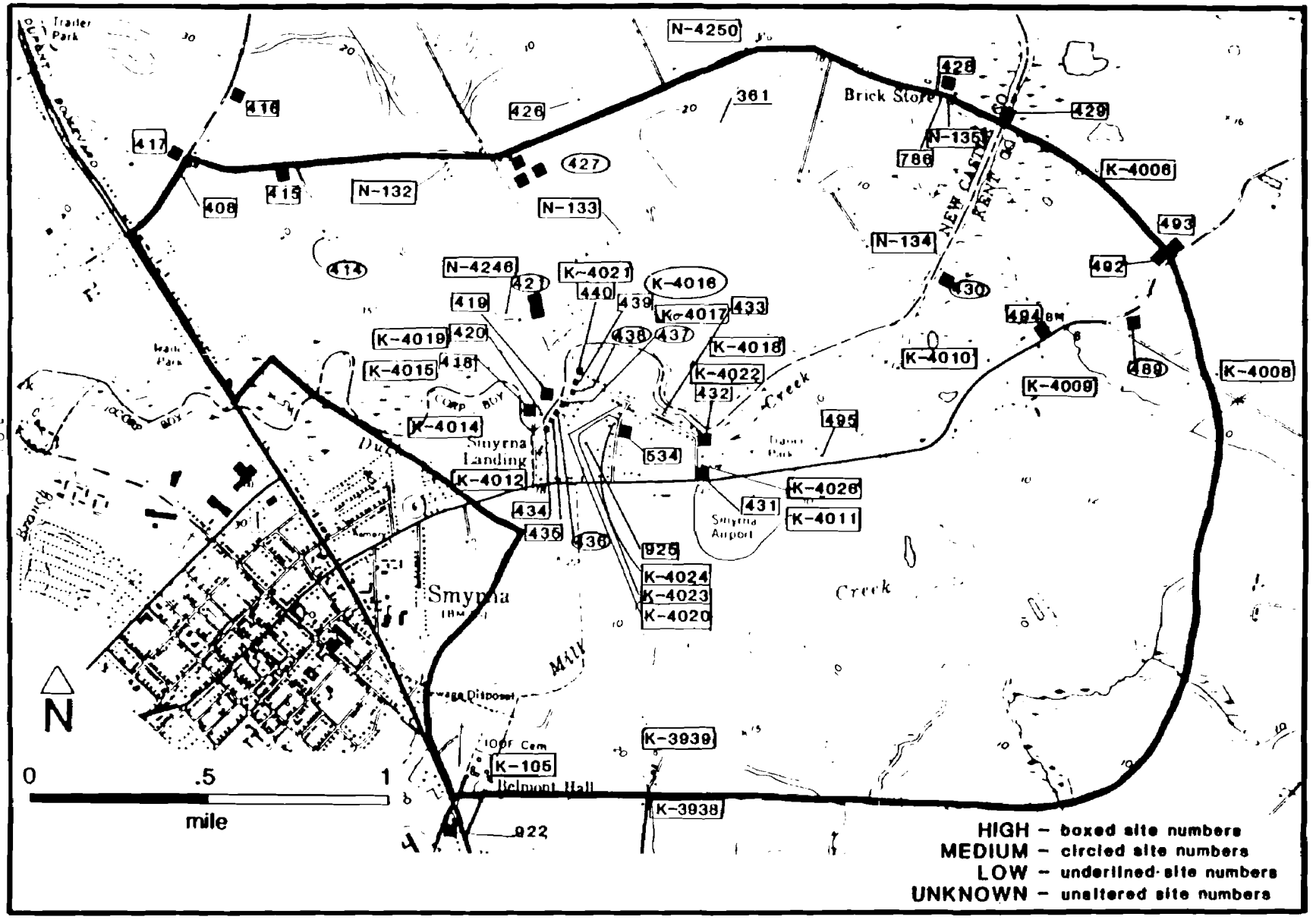


ATTACHMENT I

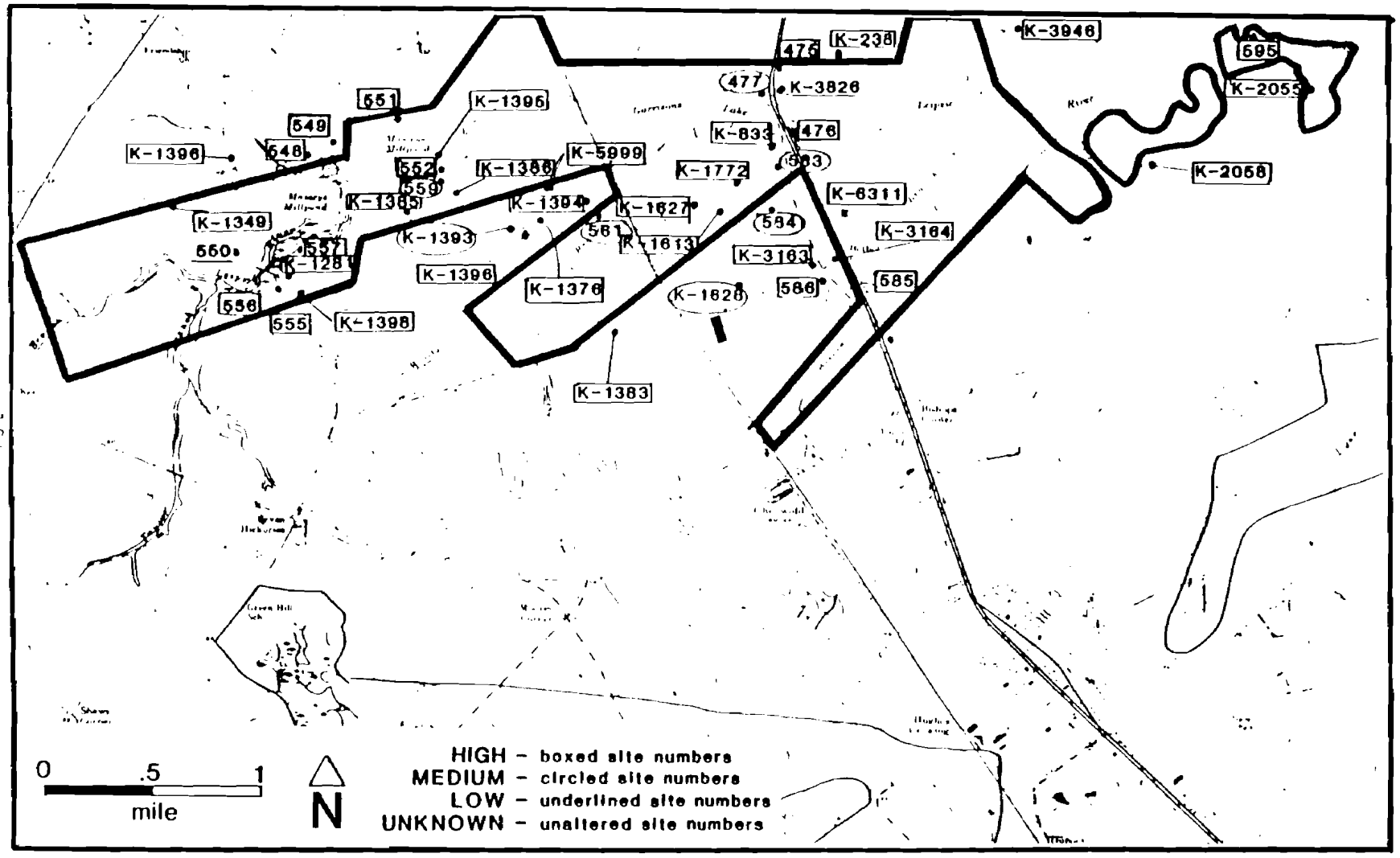
Prehistoric Sites by Significance Categories for the Double Run/Spring Creek Study Area 4



Historic Sites by Significance Categories for the Smyrna Study Area 12

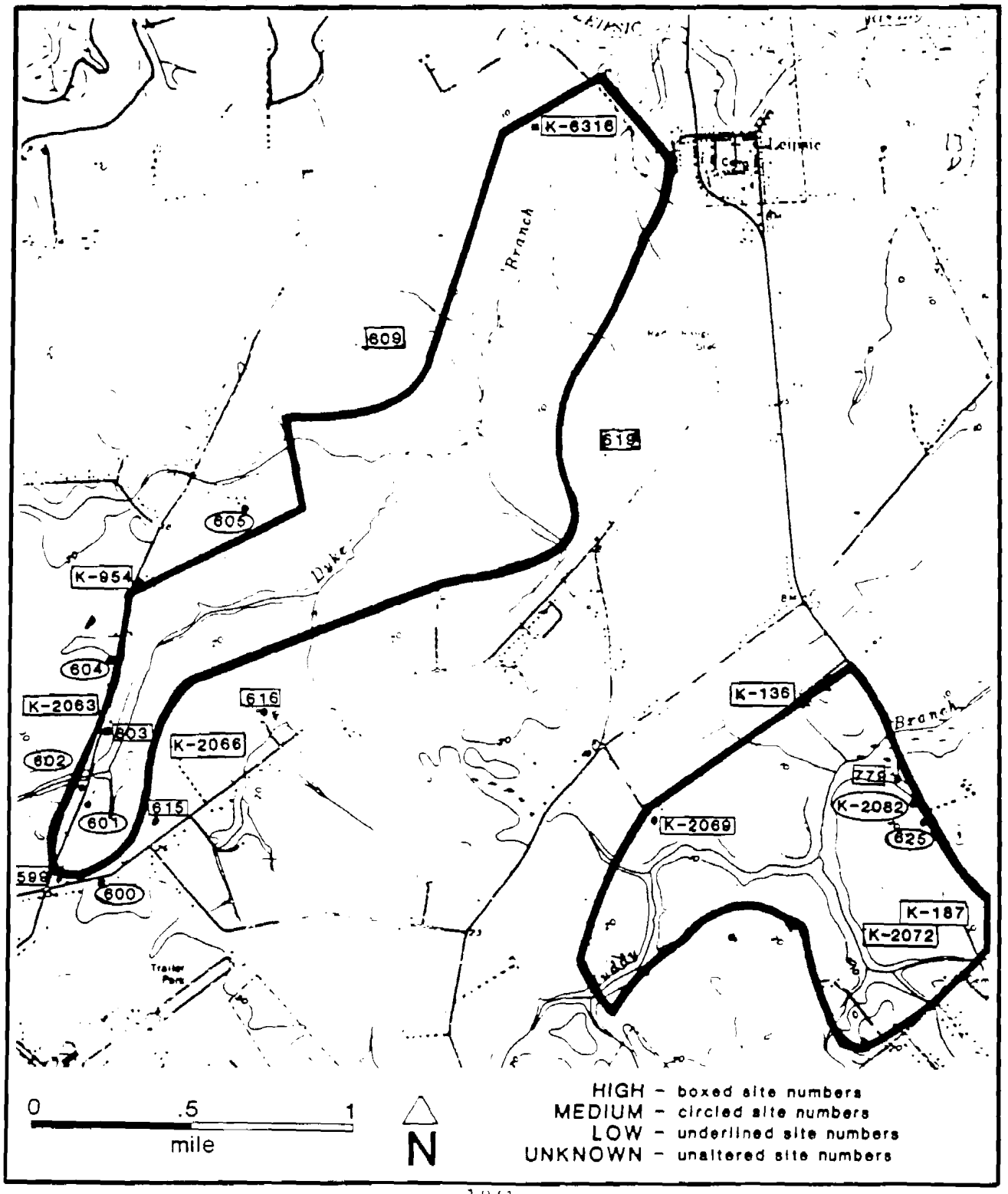


Historic Sites by Significance Categories for the Leipsic Study Area 3

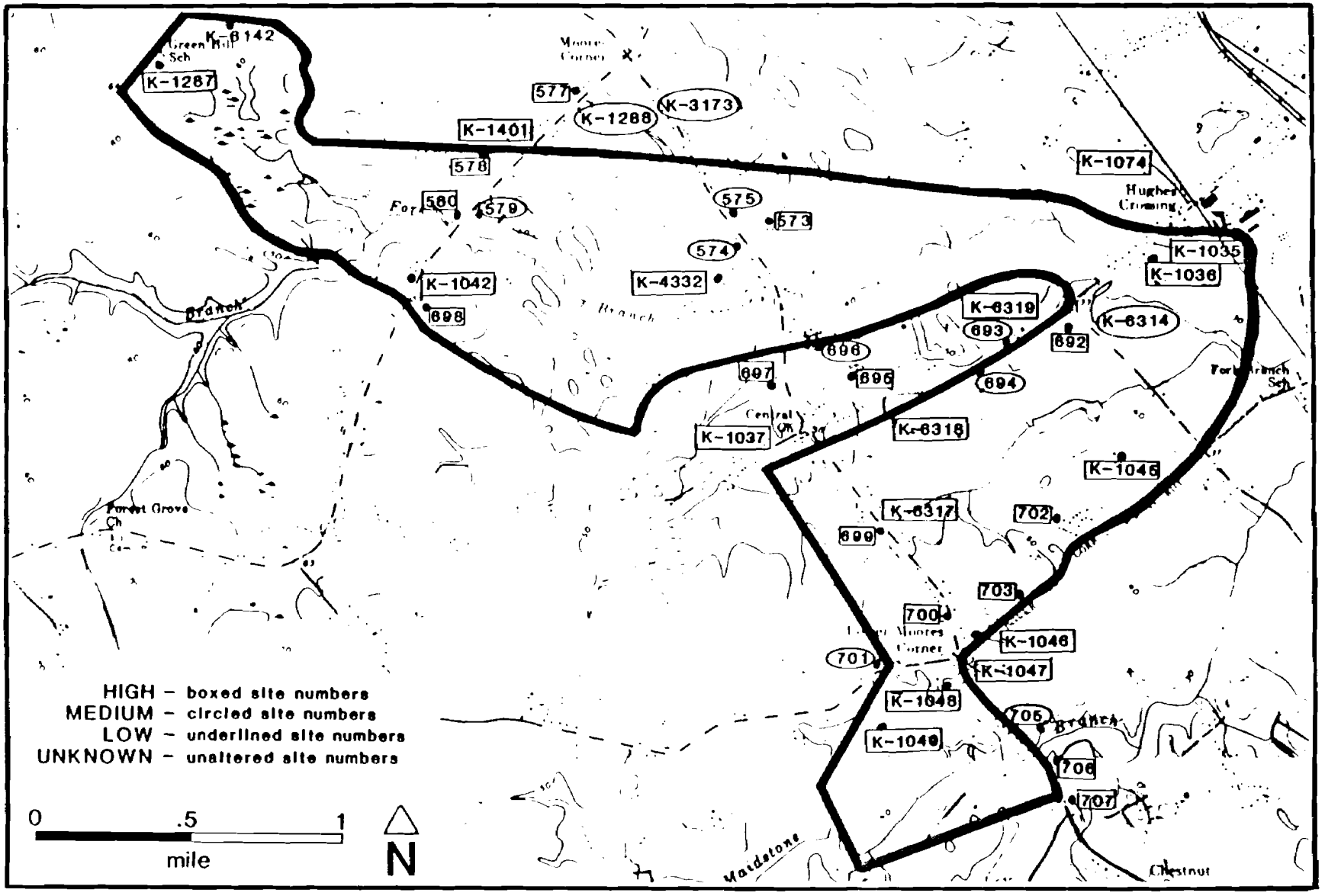


ATTACHMENT II

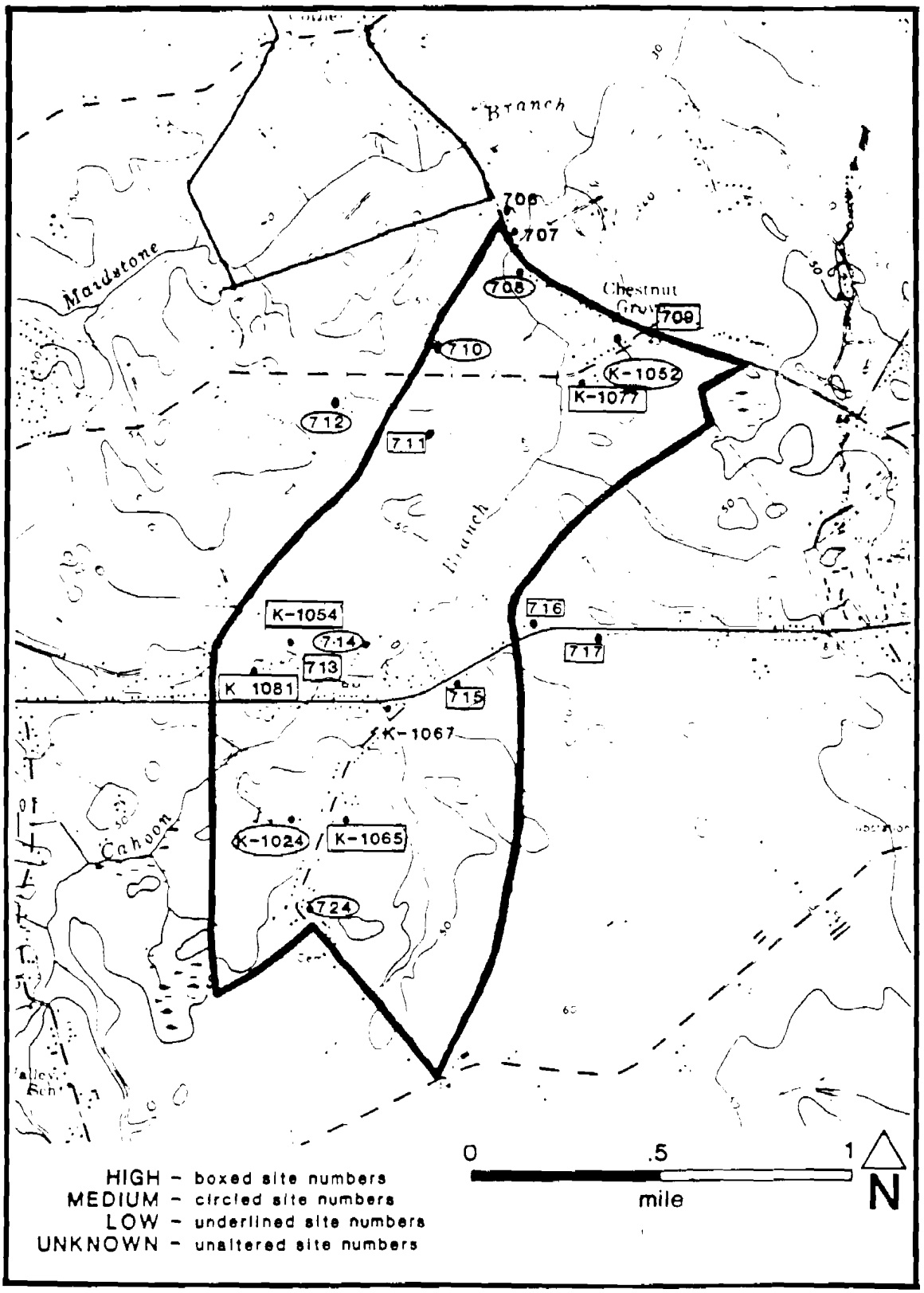
Historic Sites by Significance Categories for the Dyke and Muddy Branches Study Area 10



Historic Sites by Significance Categories for the Hughes Crossing Study Area 6

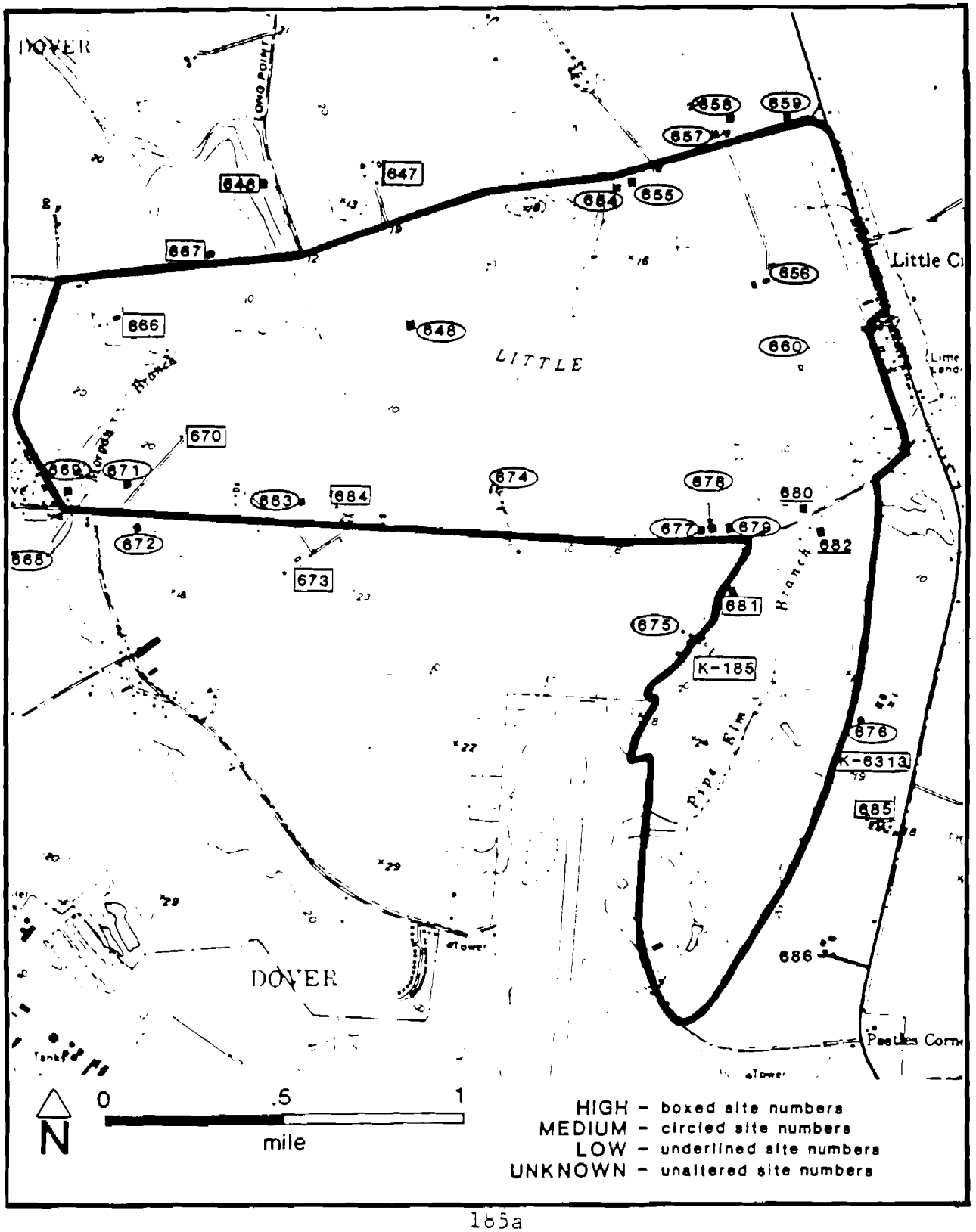


ATTACHMENT II
Historic Sites by Significance Categories for the Chestnut Grove Study Area 8

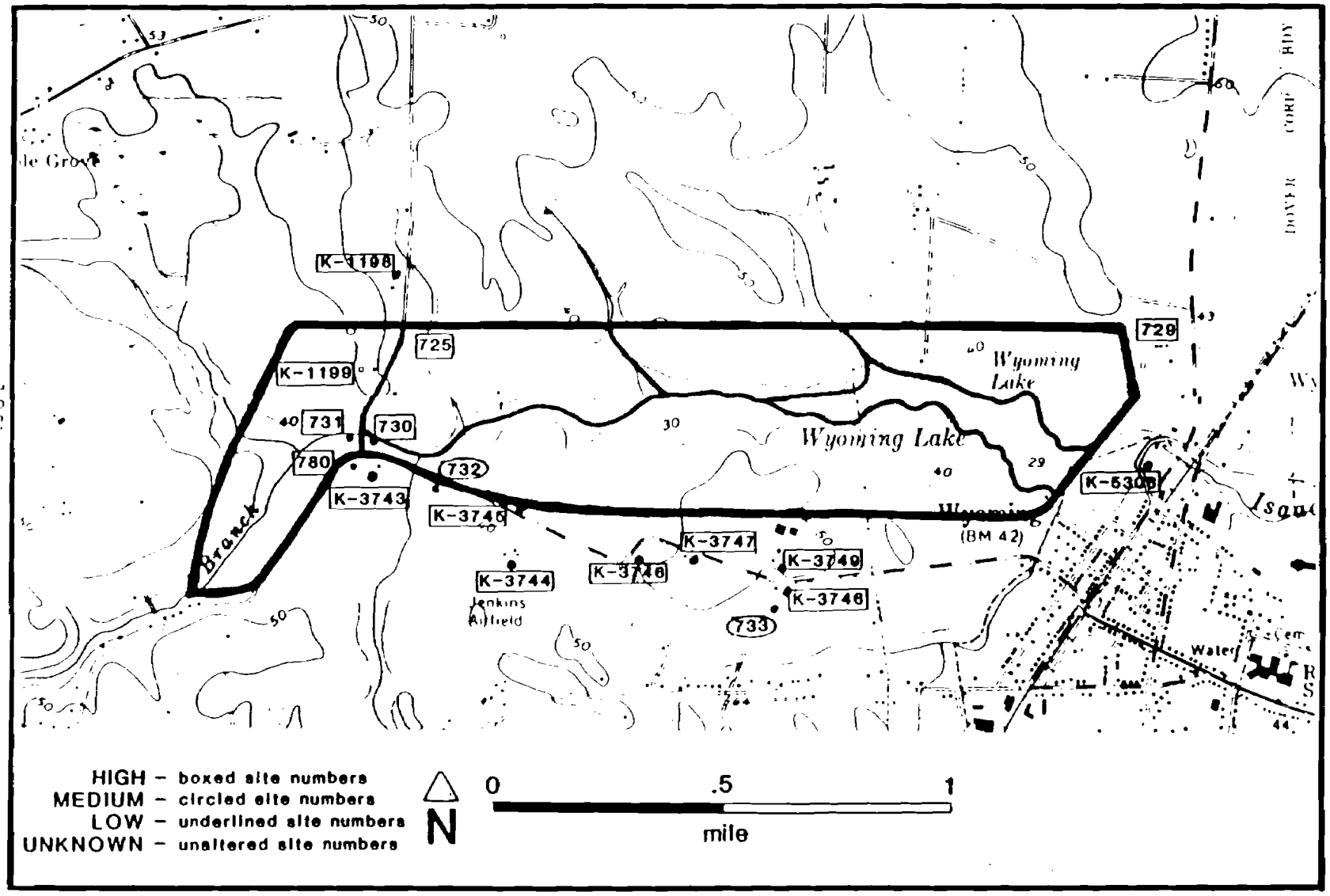


ATTACHMENT II

Historic Sites by Significance Categories for the Little River/Pipe Elm Branch Study Area 5

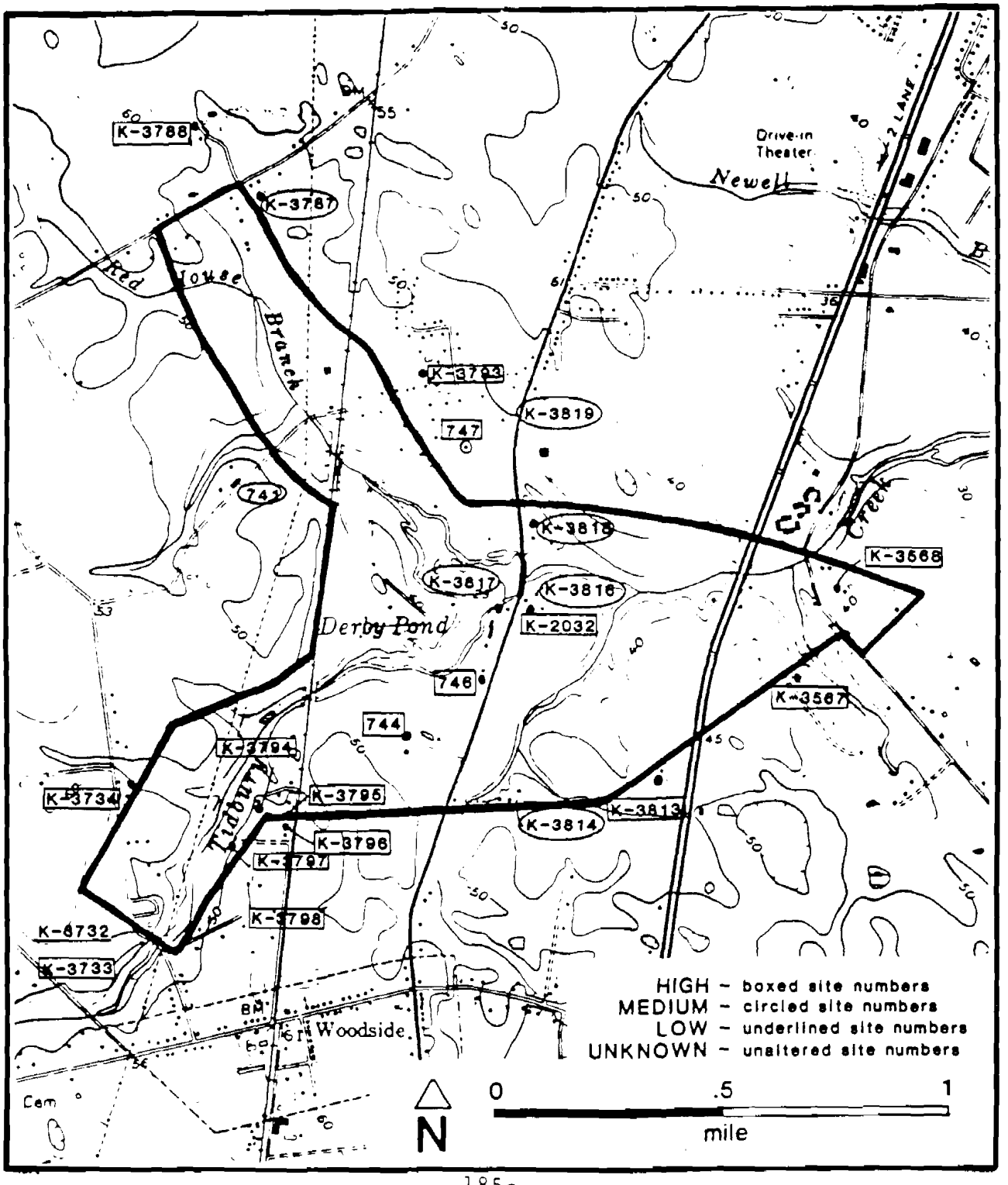


Historic Sites by Significance Categories for the Wyoming Lake Study Area 9



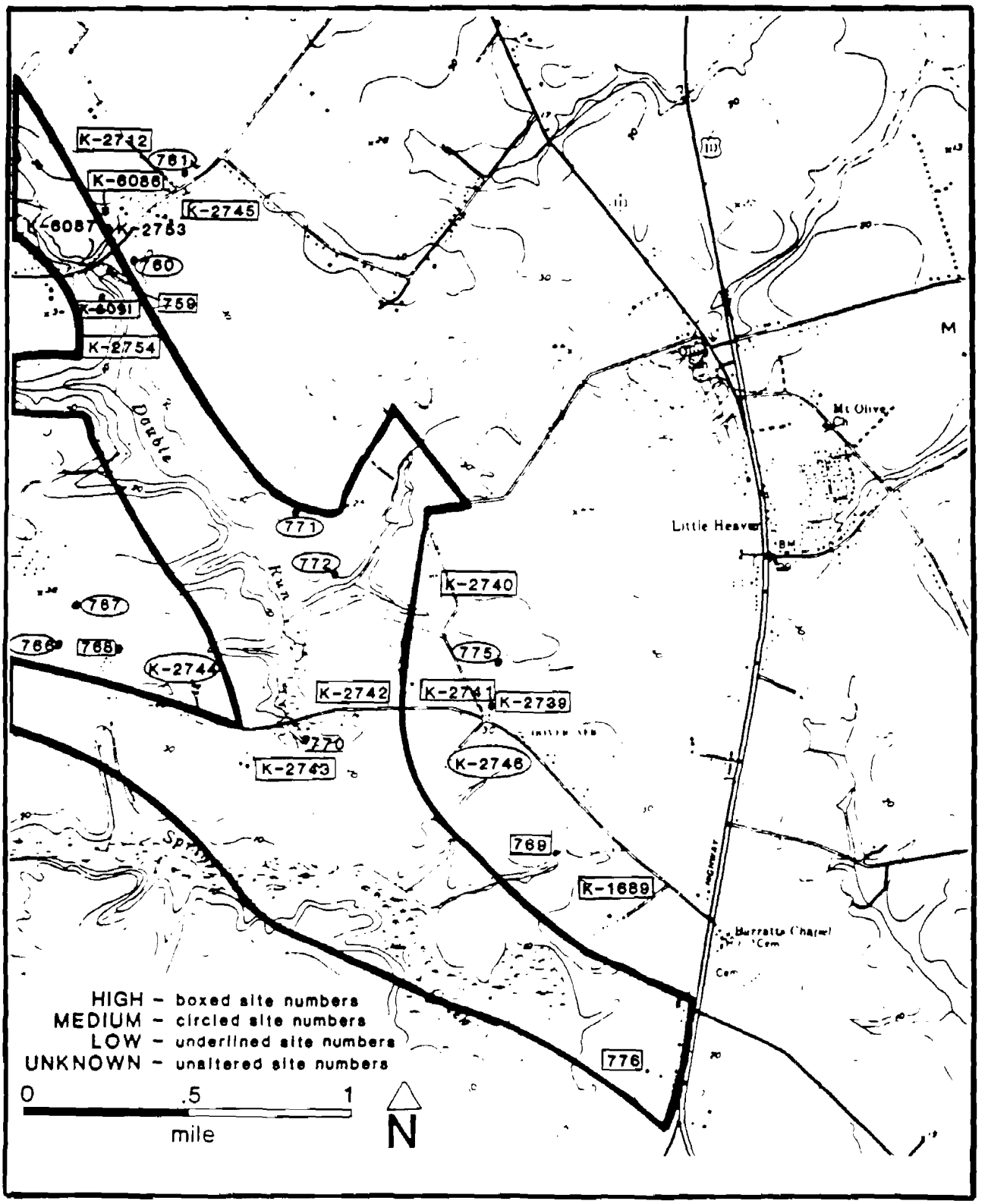
ATTACHMENT II

Historic Sites by Significance Categories for the Derby Pond Study Area 7

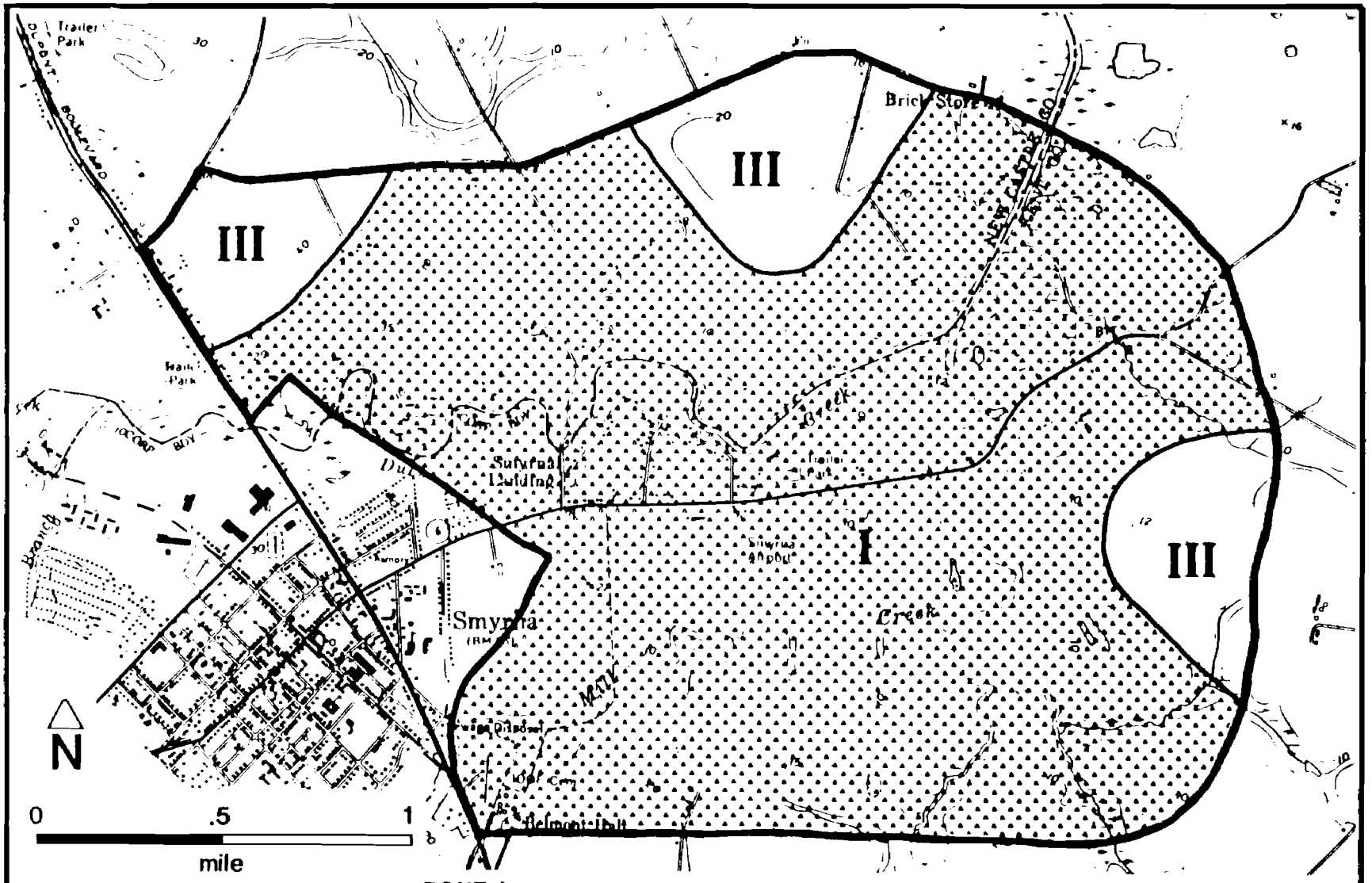


ATTACHMENT II

Historic Sites by Significance Categories for the Double Run/Spring Creek Study Area 4

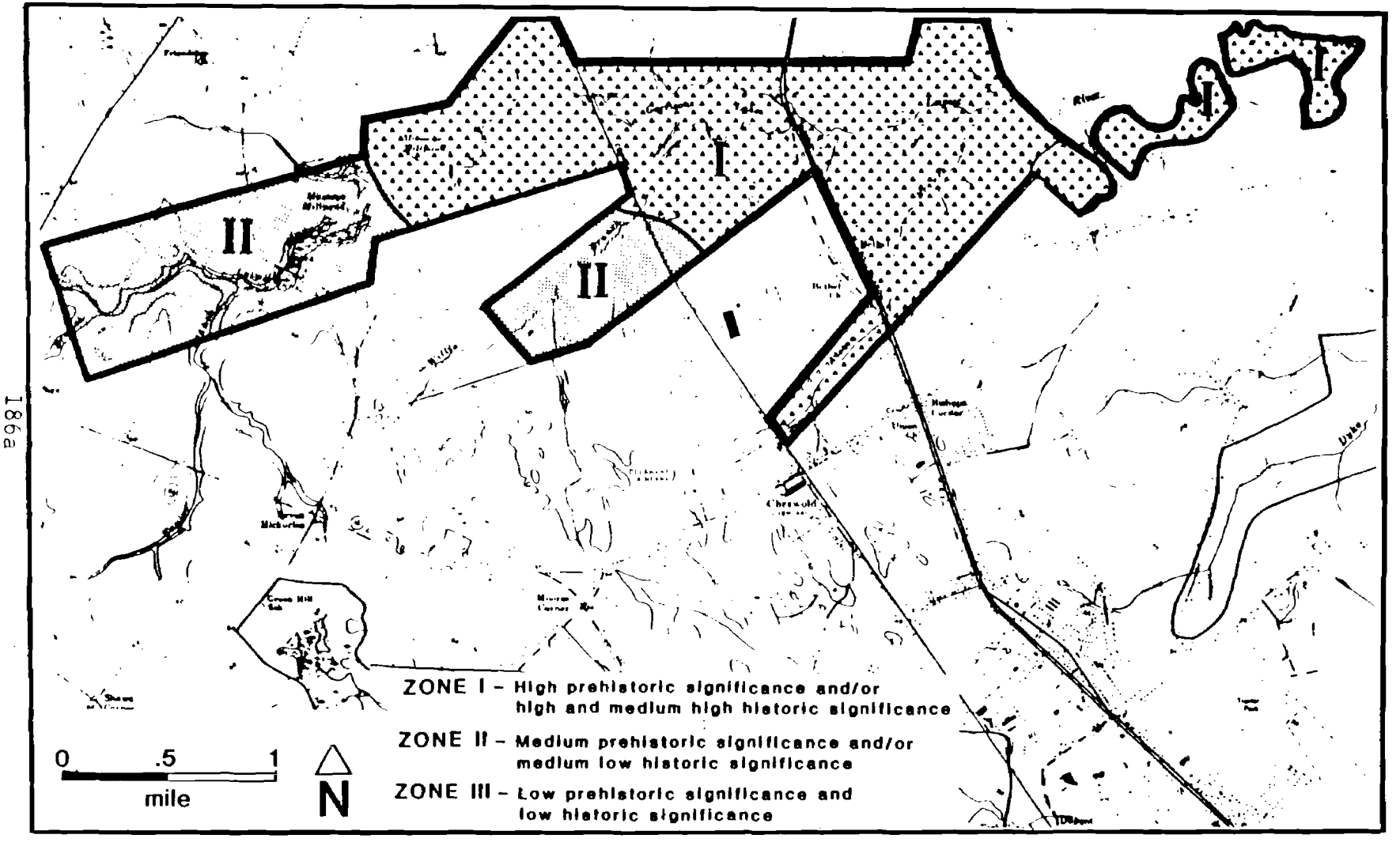


Management Zones for Prehistoric and Historic Sites in the Smyrna Study Area 12



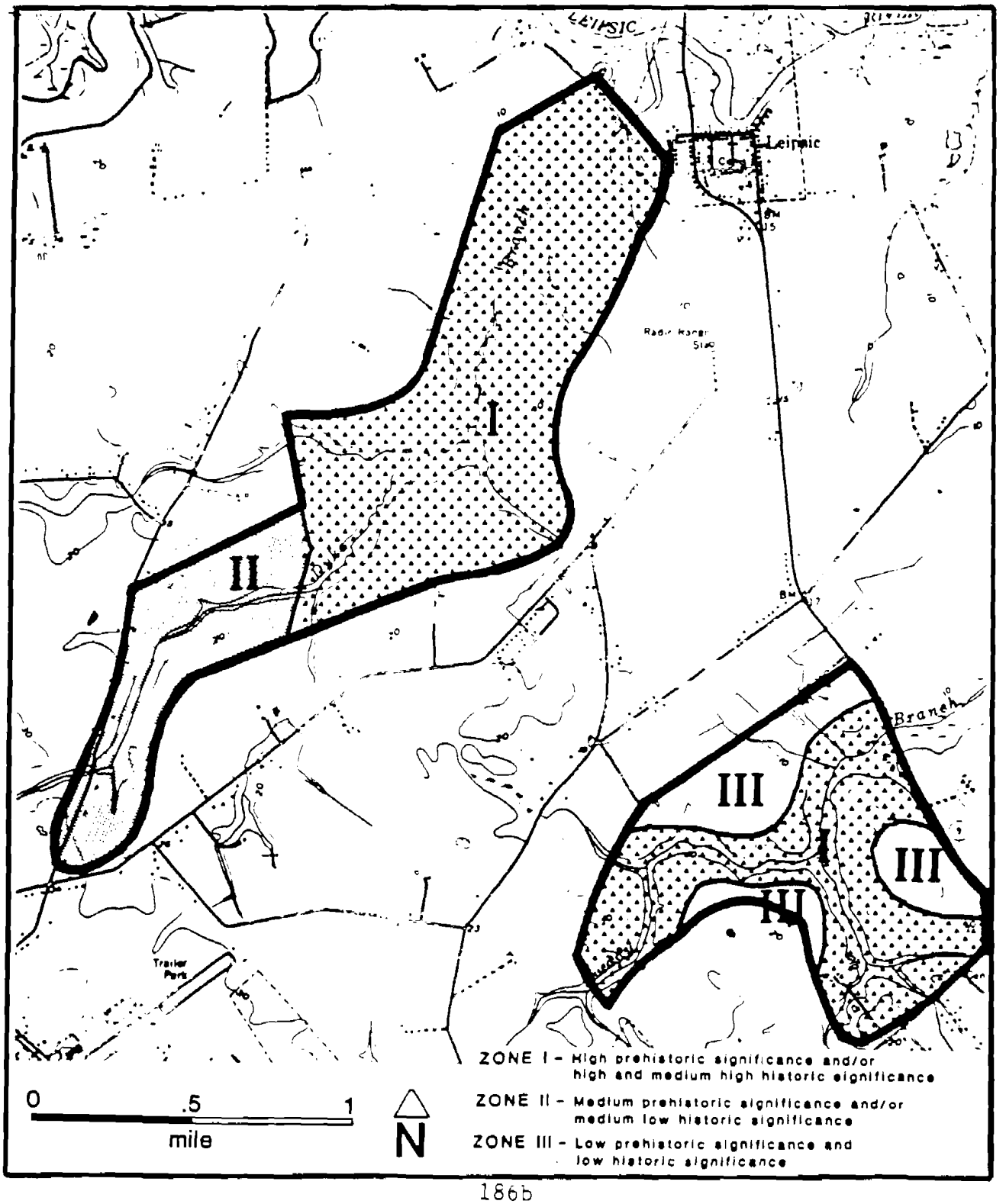
ZONE I - High prehistoric significance and/or high and medium high historic significance
ZONE II - Medium prehistoric significance and/or medium low historic significance
ZONE III - Low prehistoric significance and low historic significance

Management Zones for Prehistoric and Historic Sites in the Leipsic Study Area 3



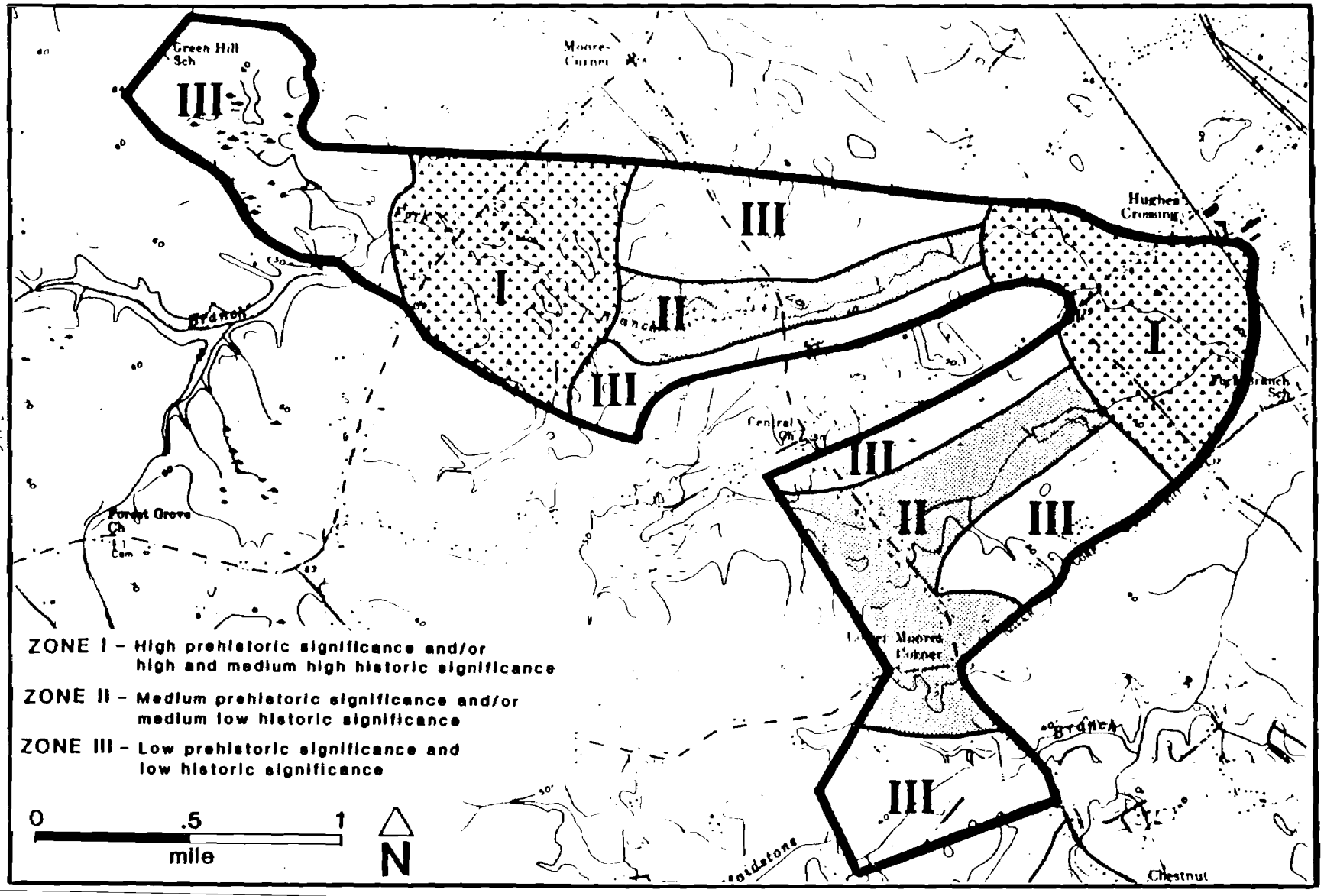
ATTACHMENT III

Management Zones for Prehistoric and Historic Sites in the Dyke and Muddy Branches Study Area 10



ATTACHMENT III

Management Zones for Prehistoric and Historic Sites in the Hughes Crossing Study Area 6



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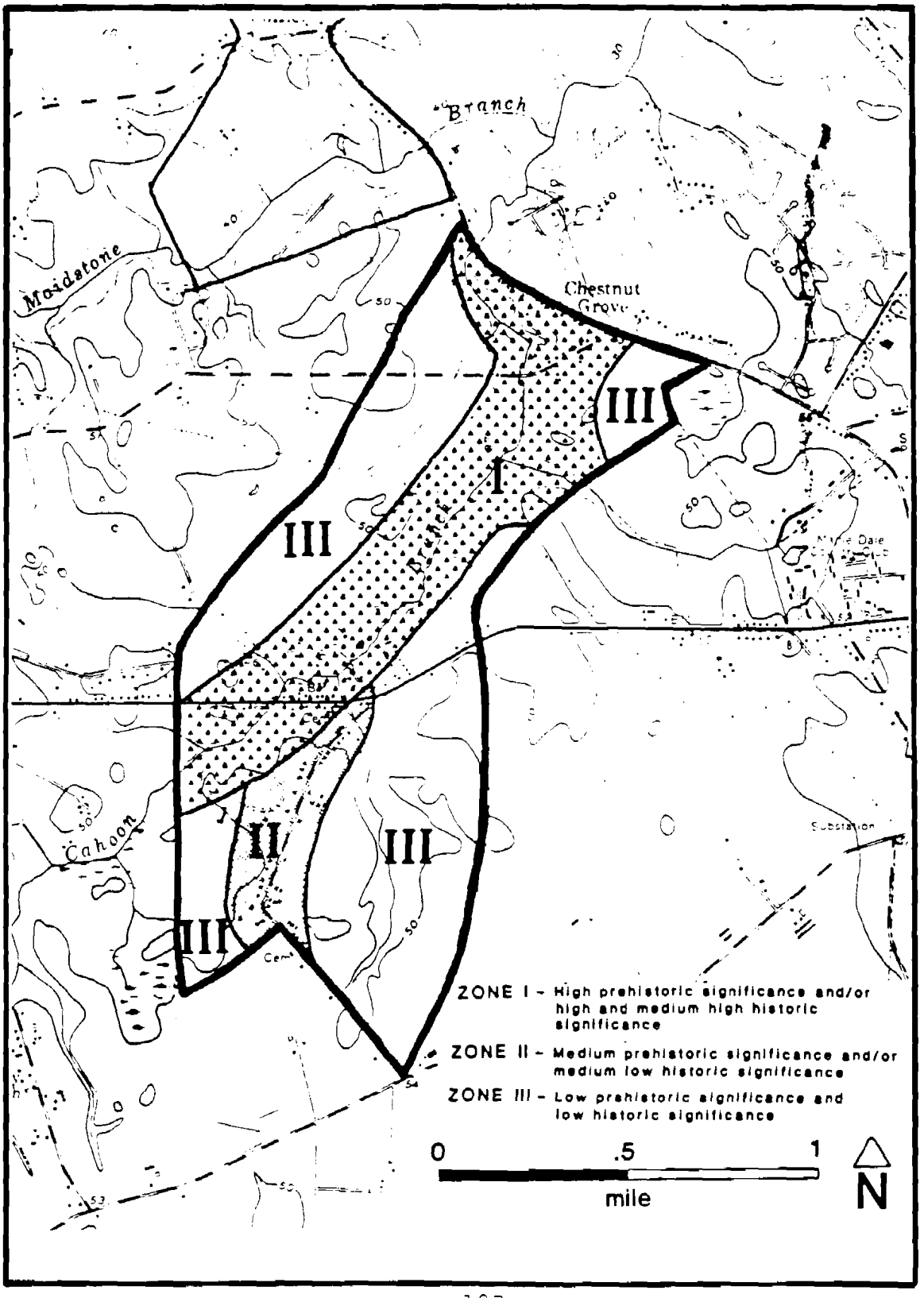
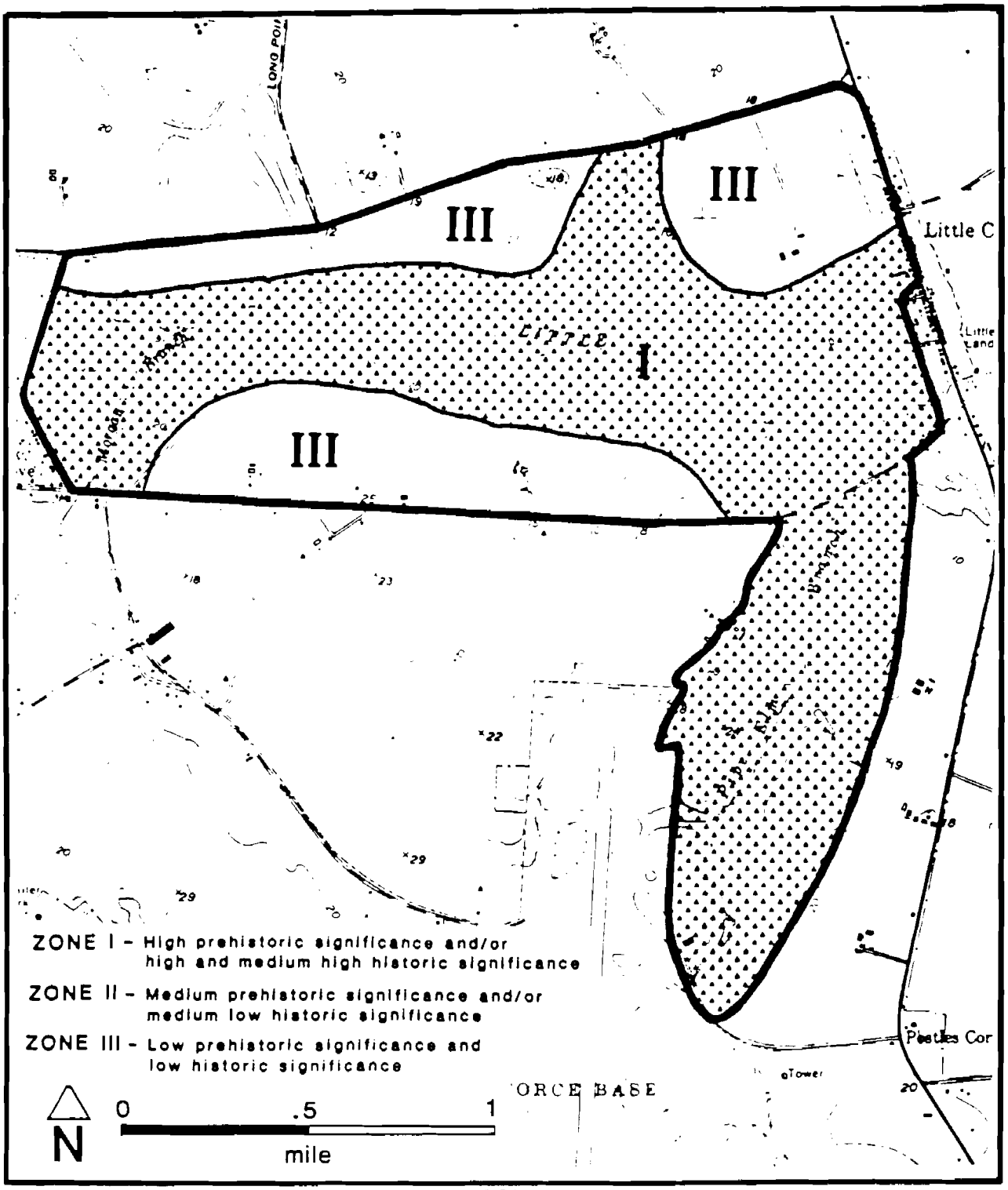
ATTACHMENT III

Management Zones for Prehistoric and Historic Sites in the Chestnut Grove Study Area 8

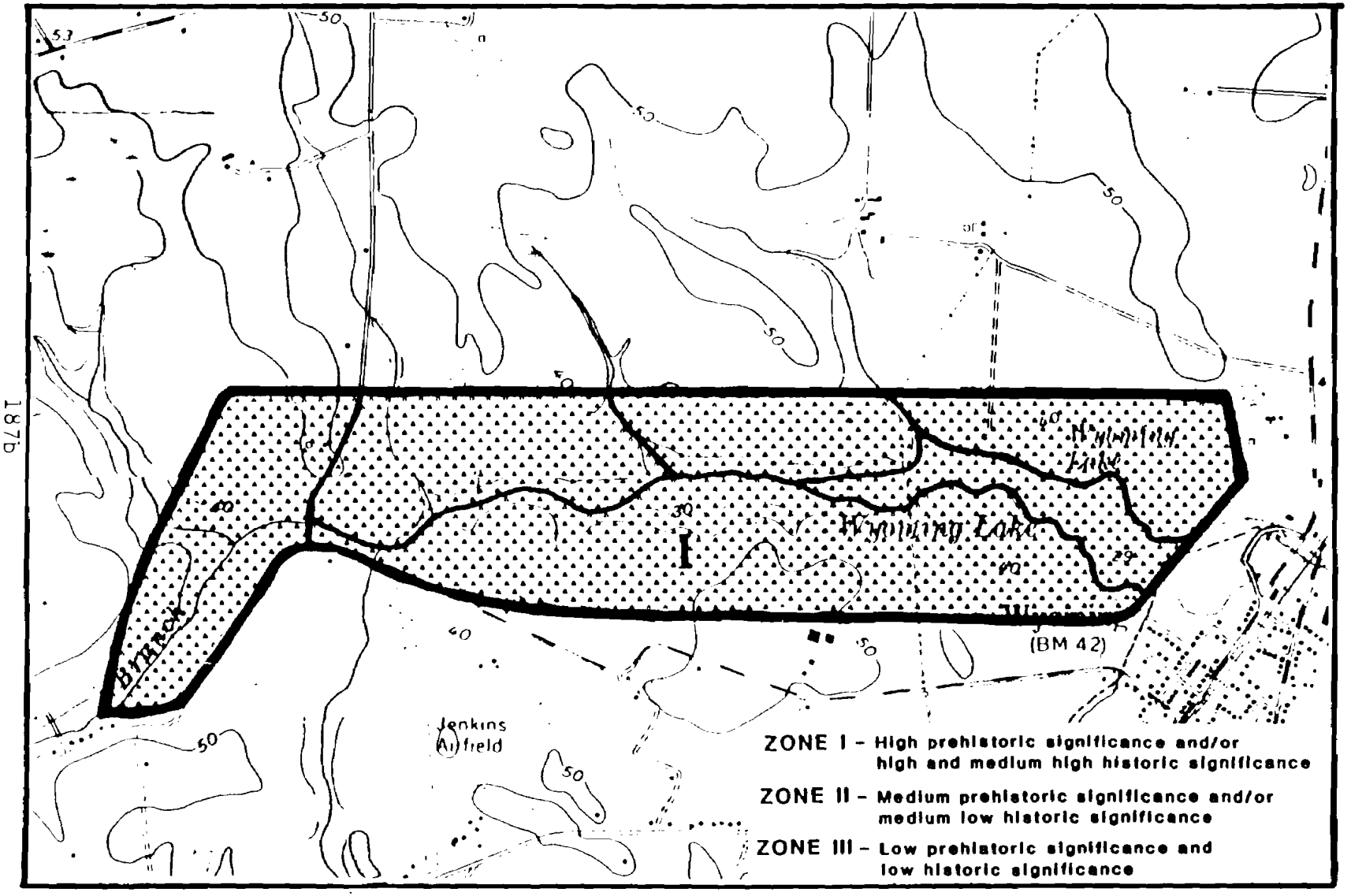


ATTACHMENT III

Management Zones for Prehistoric and Historic Sites in the Little River/Pipe Elm Branch Study Area 5

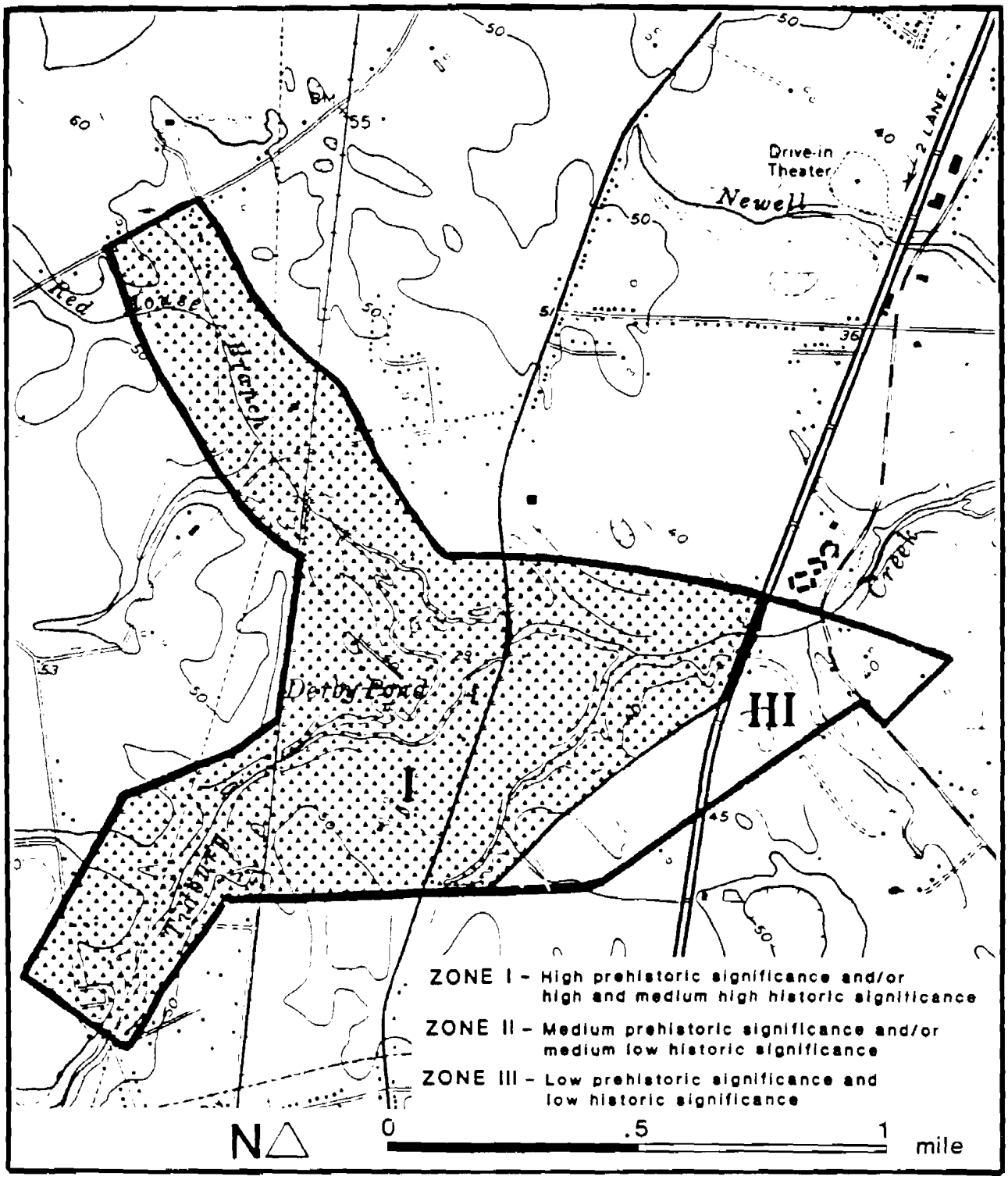


Management Zones for Prehistoric and Historic Sites in the Wyoming Lake Study Area 9



ATTACHMENT III

Management Zones for Prehistoric and Historic Sites in the Derby Pond Study Area 7



ATTACHMENT III

Management Zones for Prehistoric and Historic Sites in the Double Run/Spring Creek Study Area 4

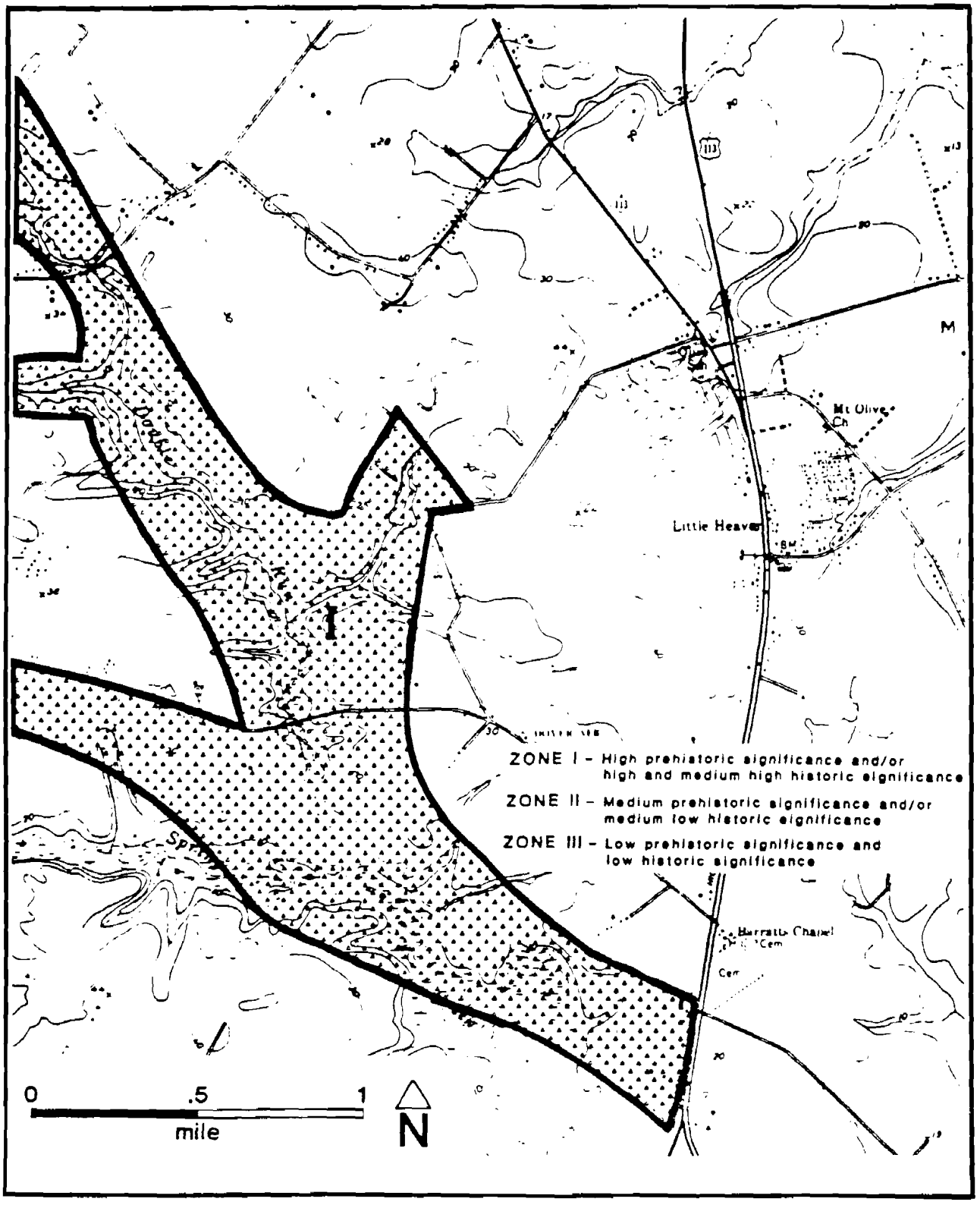


TABLE 36

PREHISTORIC SITE FREQUENCIES

Site Type	DADS	DE	HighC.P.	LowC.P.	Tot. C.P.
Paleo-Indian	96	63	3	72	75
Procurement	5	4	0	3	3
Macroband	9	9	1	7	8
Microband	0	0	0	0	0
Gen. B.C.	8	8	2	6	8
Archaic	281	55	12	58	70
Procurement	3	2	0	1	1
Macroband	9	8	1	4	5
Microband	0	0	0	0	0
Gen. B.C.	13	13	4	9	13
Woodland I	504	245	29	332	361
Procurement	7	5	2	2	4
Macroband	20	19	1	16	17
Microband	1	1	0	1	1
Gen. B.C.	49	48	11	34	45
Woodland II	446	205	45	292	337
Procurement	8	6	3	1	4
Macroband	22	20	1	15	16
Microband	2	2	2	0	2
Gen. B.C.	42	42	8	31	39

Coastal Plain. Tables 37-40 show the frequencies of historic sites of various types within the study area and the total corridor. These tables can be used to determine the uniqueness of particular classes of sites for future management decisions and determintations-of-eligibility.

Another management issue to consider includes research issues which can be addressed during future archaeological research in the Route 13 Corridor. A number of research issues pertaining to prehistoric sites can be investigated. For example, an interesting point to consider is the apparent absence of Paleo-Indian sites in all but the western drainage divide study areas. As was noted in earlier reports (Custer and Bachman 1986), bay/basin features have been noted as foci of Paleo-Indian sites. However, few Paleo-Indian sites were not found associated with bay/basin features, or any other topographic features for that matter, in our survey. An important part of future research in the Route 13 Corridor will be geomorphological analysis of these bay/basin features. Radiocarbon dates from organic-rich sediments will be required and samples should be taken from bay/basin sites which show varied time periods of utilization to see if the age of the bay/basins affect the ways in which humans used them. Within this research context, both wet (unplowed) and dry (plowed) features will have to be studied. Also in relation

TABLE 37

HISTORIC SITE FREQUENCIES - PRE-1802

Site Function	Survey	Potential Arch. Sites	BAHP Survey	Total Corr.
AGCX	4	1	31	32
GMCX	2	6	1	7
BRID	1	0	0	0
CHUR	1	2	4	6
MANUFY	1	0	1	1
LANOP	0	1	0	1
AGMCX	0	1	4	5
MMCX	0	1	0	1
SMCX	0	2	0	2
DWCX	0	0	4	4
EST	0	0	13	13
PLANT	0	0	2	2
STO	0	0	1	1
TAV	0	0	1	1

TABLE 38

HISTORIC SITE FREQUENCIES - 1802-1849

Site Function	Survey	Potential Arch. Sites	BAHP Survey	Total Corr.
AGCX	49	106	110	216
AGTEN	10	37	11	48
INDTEN	2	2	0	2
GMCX	1	5	1	6
DWCX	1	8	12	20
SCH	2	9	1	10
RRSTA	1	1	0	1
HOT	0	0	1	1
STRUC	1	2	0	2
CHUR	1	4	2	6
LANOP	1	2	2	4
AGBLDG	1	0	0	0
PEACH	1	0	3	3
BRID	0	1	0	1
WKSH	0	1	0	1
COMM	0	3	0	3
EST	0	1	7	8
MMCX	0	1	0	1
RR	0	2	0	2
SMCX	0	3	0	3
STO	0	5	4	9
MANUFY	0	0	1	1
ALMHSE	0	0	1	1
PO	0	0	1	1
SCOSTA	0	0	1	1

TABLE 39

HISTORIC SITE FREQUENCIES - 1849-1868

Site Function	Survey	Potential Arch. Sites	BAHP Survey	Total Corr.
AGCX	23	263	168	431
AGTEM	29	286	40	326
IDTEN	4	17	1	18
DWCX	8	60	14	74
SCH	1	21	2	23
RRSTA	1	0	2	2
STRUC	1	15	1	16
WKSH	1	3	0	3
MANUFY	1	5	1	6
TENANT	2	3	1	4
PEACH	1	0	8	8
GMCX	0	2	2	4
BRID	0	1	0	1
CHUR	0	9	4	13
LANOP	0	1	0	1
AGMCX	0	2	1	3
ALMHSE	0	1	1	2
BSSH	0	5	0	5
CCBLDG	0	3	0	3
CEM	0	1	0	1
EST	0	7	5	12
HOT	0	3	0	3
PHYS	0	1	0	1
PO	0	2	0	2
RR	0	1	3	4
SMCX	0	1	0	1
SOMCX	0	2	0	2
STO	0	13	3	16
WARE	0	7	0	7
AGBLDG	0	0	1	1
PLANT	0	0	1	1
SLAVQ	0	0	1	1

TABLE 40

HISTORIC SITE FREQUENCIES - 1868-1893

Site Function	Survey	Potential Arch. Sites	BAHP Survey	Total Corr.
AGCX	11	24	43	67
AGTEN	5	33	1	34
BRID	1	0	0	0
DWCX	8	21	47	68
HOT	1	1	0	1
STRUC	5	15	2	17
INDTEN	0	2	0	2
RRSTA	0	2	1	3
TENANT	0	4	0	4
CEM	0	1	2	3
EST	0	2	1	3
RR	0	2	1	3
RT	0	1	0	1
STO	0	1	1	2
SCH	0	0	5	5
CHUR	0	0	4	4
MANUFY	0	0	1	1
WARE	0	0	1	1

to the question of Paleo-Indian utilization of bay/basin features, it will be important to identify those bay/basin features which are associated with secondary cobble lithic sources. As was noted earlier (Custer and Bachman 1986), these bay/basin sites would be more likely to be assocaited with Paleo-Indian sites.

With regard to the Archaic Period, an important question for further research relates to site size. Within the study area, and the Delmarva Coastal Plain in general, Archaic sites generally tend to be small. The only large sites are located near large interior swamp settings. Careful excavation and survey techniques should be developed so that accurate estimates of Archaic site size and settlement intensity can be developed. Archaic sites may indeed all be small, but this impression may be a result of biased and incomplete samples.

IMPLICATIONS OF PREHISTORIC DATA

The prehistoric survey and collection analysis data have a number of interesting implications for larger issues in the prehistoric archaeology of Delaware and the Delmarva Peninsula. An interesting feature of the southern survey areas of the Route 13 study, especially the Smyrna and Leipsic drainages, is that they were poorly known archaeologically. Consequently, the extensive survey and collection data from these areas fill major gaps in our archaeological knowledge.

The presence of Woodland II sites with combinations of Killens, Minguannan, and Townsend ceramics on the Smyrna and

Leipsic drainages are of special significance because the southern New Castle and northern Kent County region have been described as a "Buffer Zone" during late prehistoric times (eg. - Witthoft 1984). The discovery of significant quantities of sites in this region during this survey and earlier Route 13 studies (Custer and Bachman 1986; Custer et al. 1984) indicates that there was a continuous distribution of late prehistoric sites throughout the Delaware Coastal Plain. Thus, the late prehistoric "Buffer Zone" noted by earlier researchers is an artifact of modern archaeological survey coverage, not a result of past human behavior.

The recording of large Woodland I sites and large amounts of Woodland I argillite, rhyolite, and steatite artifacts in the Bailey, Chapman, and Leitzinger collections from the Smyrna and Leipsic drainages is also of special significance. Published descriptions of Coastal Plain Woodland I settlement patterns (Custer 1984:94-97; 1982) have been based primarily on site distributions from the Appoquinimink drainage, which is located to the north of the Smyrna-Leipsic area, and the St. Jones, Murderkill, and Mispillion drainages, which are located to the south. The survey results and collection analyses presented here show that the previously developed site location models can be applied to the Smyrna and Leipsic drainages. The presence of argillite and rhyolite artifacts in all private collections and in our field sample collections confirm earlier general distribution studies of exotic raw materials on the Delmarva Peninsula (Custer 1984). However, the presence of a large argillite biface cache and substantial percentages of Woodland I argillite artifacts, including debitage, from the Bailey Collection on the Smyrna Drainage indicate that very high concentrations of non-local materials, which were thought to be focused primarily on the St. Jones - Murderkill - Choptank region may extend further north than previously thought. These finds also suggest that the spatial boundaries of the initial Woodland I Barker's Landing Complex may need to be shifted to the north.

Survey and analysis of collections from the eastern study areas on the boundary between the Mid-Drainage and Bay Coastal zones also provided some new perspectives on prehistoric site distributions. For the most part, the definitions of the major environmental zones of the Coastal Plain (Mid-Peninsular Drainage Divide, Mid-Drainage, Bay Coast) focused on major drainages such as the Appoquinimink, Smyrna, Leipsic, St. Jones, Murderkill, and Mispillion Rivers. Most of the smaller tributaries of the Delaware Bay and River, which usually extend only through the Bay Coastal and eastern edge of the Mid-Drainage zones, have been ignored. Preliminary survey work on Pipe Elm Branch, southeast of Dover (Galasso 1983; Custer and Galasso 1983), showed that several large Woodland I sites were present along these drainages. The present survey's results from the same area show that there are even more, and larger, sites along these drainages than was originally suspected. Argillite, rhyolite, and steatite artifacts of non-local origin, as well as Adena artifacts (eg. - 7K-D-86), are also found at sites from these drainages and

indicating that the societies living along these smaller drainages were every bit as complex as those living along the higher order drainages to the west. It is suggested here that these smaller drainages will duplicate the environmental settings and site distributions of the larger drainages, only on a smaller scale (Figure 58). These distributions indicate that there is considerably more variation in Coastal Bay Zone environments and site distributions than was previously thought.

Survey and collection analysis in study areas on the western edge of the Route 13 Corridor provided data that confirmed previous site distribution models. The Deneumoustier and Chapman-Leitzinger collections from the Mid-Peninsular Drainage Divide Zone all contain numerous late Paleo-Indian notched points and Archaic bifurcate points and this zone had previously been identified as a focus of Paleo-Indian and Archaic settlement (Custer 1984:57; Custer 1983).

Another interesting aspect of survey work can be found in the subsurface testing data from the Mid-Peninsular drainage divide area. In many locations, artifacts were recovered from buried contexts, sometimes more than 50 cm deep. In many cases, the only possible source of soil deposition is aeolian sands and the presence of artifacts within these aeolian deposits indicate that this deposition probably took place during relatively recent times. In the cases where diagnostic artifacts were recovered from buried contexts, the dates of these artifacts indicate that much of the aeolian deposition took place during the last 3000 to 5000 years. The presence of this potential aeolian deposition and its dates correspond to other data from the Middle Atlantic Region (Curry and Custer 1982; Custer 1984).

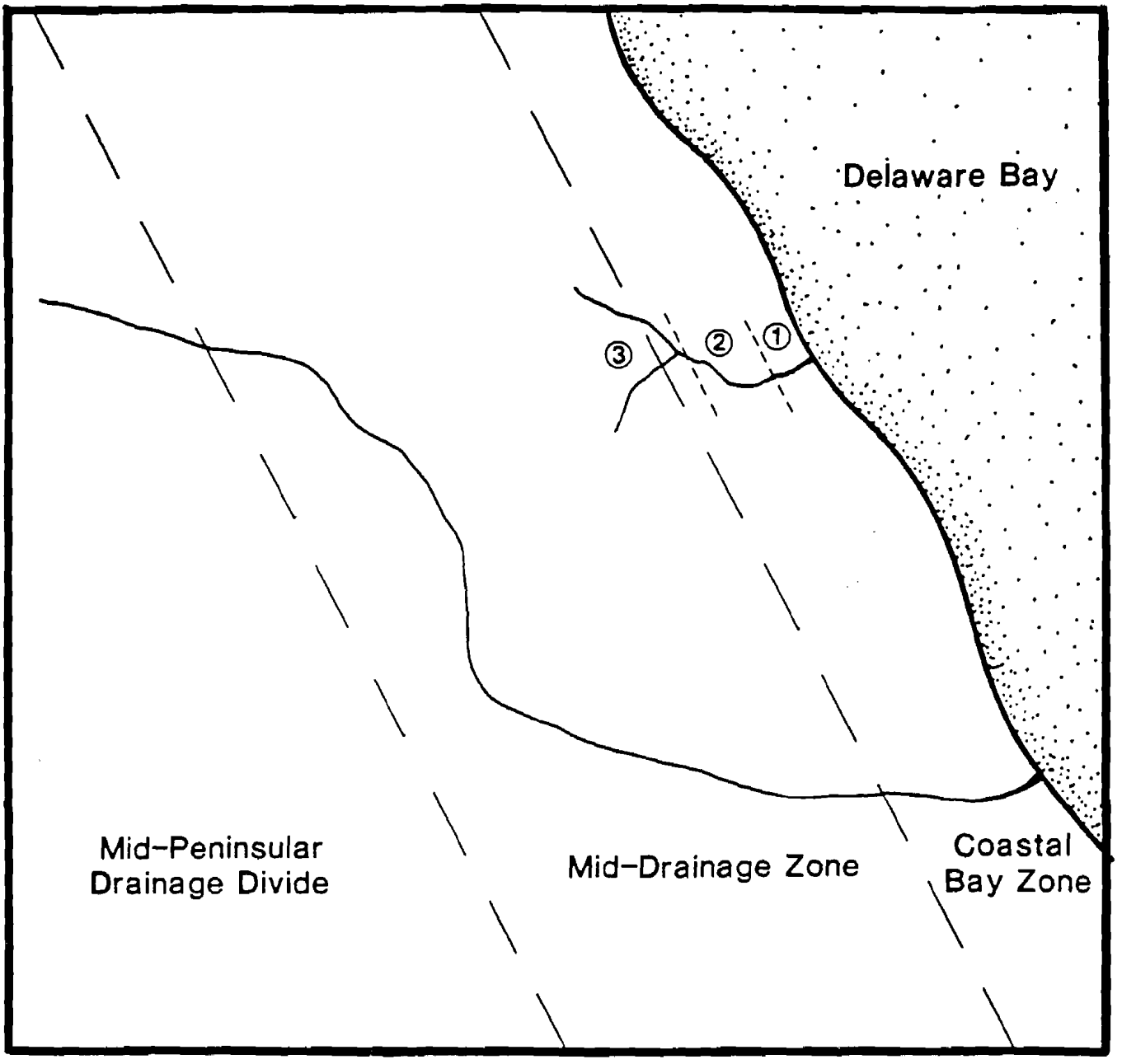
IMPLICATIONS FOR HISTORIC DATA

With regard to historic archaeological research, the large size of the Route 13 Relief Route Planning Corridor allows for the development and testing of a number of research questions framed within the economic and settlement pattern paradigms current in historical geography and archaeology. Such geographical and archaeological data would also provide useful information for the study of more traditional paradigms in the historical analysis of Delaware and the Chesapeake region (Tate and Ammerman 1979:43-45; Earle 1975:7; Wesler 1982:65). In addition, the study of environment and cultural adaptation has long been a primary focus in prehistoric archaeology, particularly Cultural Ecology, and many of the same theoretical perspectives and research strategies can be applied to historic sites (Miller 1980:4).

The following research questions and topics are designed to integrate the interdisciplinary use of all archival, historic, architectural, and archaeological resources within a general research design that can be coordinated with all the different phases of the eventual mitigation program. These questions are not theoretical or explanatory in themselves, but rather

FIGURE 58

Distribution of Environments
Along Coastal Plain Drainages of Different Orders



① - Coastal
② - Mid-Drainage
③ - Headwaters

encompass numerous issues of anthropological and historical significance and are broad enough in scope to be applicable to many kinds of sites.

The present historic archaeological data base existing prior to any mitigation program consists of a number of urban and rural sites in Delaware. The urban environment of Wilmington has been intensively explored by Thomas et al. (1981), Wise (1980), Klein and Garrow (1984), Cunningham et al. (1984), Beidelman et al. (1986) and Cultural Resource Group (1985). The excavation of several rural sites in northern Delaware under contract with the Department of Transportation has provided a small, but significant data base for comparisons with site types in southern Delaware. The mitigation programs of these northern Delaware sites included questions on topics like settlement patterns, milling development agricultural and indistrial development, transportation networks, and other aspects of the region (Coleman et al. 1983, 1984, 1985, 1986; Catts et al. 1986; Custer et al. 1985; O'Conner et al. 1985; Heite and Heite 1985, 1986; Thompson and Gardner 1986; and Taylor and Thompson 1986).

Most of the Route 13 Corridor has been, and continues to be, an important agricultural region. Of the 273 historic sites identified in the nine southern study areas, over half (58%) are either agricultural complexes or tenancies. The history of farming in the region provides a focus for inquiry. How was early Delaware, in particular southern New Castle and northern Kent Counties, settled? How was the area and its environment perceived by those who settled in the region? How did these settlers consciously or unconsciously locate their holdings and dwellings in response to the environment? Was the "long lot" system of land use identified in other parts of Delaware and the region (Wise 1979b, 1980; Wacker 1975: Chapter 4) used in the study area? The Route 13 Corridor contains a wide range of historic sites. And data collected from further work would be useful in addressing these and other research questions.

Each of these questions points toward the need for a more complete understanding of the origins and development of agriculture in Delaware and would benefit the archaeological and geographical data generated by the Route 13 project. For example, little is known about the lower class of non-landed tenant farmers (Bausman 1933). Agricultural tenancies are well represented in the southern study areas, with 44 such sites located thus far. Few of their dwellings, however, survive and the historical record makes little reference to the role played by this group in rural society. Only one agricultural tenant dwelling (K-2742) is extant. Most known agricultural tenant dwellings are of less substantial construction and appear to be situated near the roadsides of each farmstead, while the landowner's more imposing dwelling is located back from the road. How this is related to the agricultural community and the general social structure of the region has not yet been fully addressed.

The relationship between the early history of rural Delaware and the physical environment provides another focus for inquiry. For example, how significant is the timing of interior settlement patterns, particularly in the areas of Kent County north and west of the St. Jones River, as postulated for other areas by Lemon (1972:42) and Mitchell (1978:80)? Research questions such as these, in part answerable by an intensive historic geographical and archaeological survey, in turn generate data applicable to larger questions in American history and historical archaeology (Miller 1980:3-4; Wesler 1982:18-19; Wacker 1975:xvii). For example, what principles governed site location during the historic period? The factors influencing changes in settlement patterns are complex and the synthesis of the geographical and archaeological data generated by further research on the Route 13 Relief Route would be an important addition to the available data base (Wise 1978, 1979a, 1979b, 1980; Gardner 1979; Henry 1981).

The general shift through time from subsistence to market-oriented agriculture in Delaware could provide another major focus for study (Mitchell 1978:84). Although an important aspect of Delaware history, this shift towards marketable versus subsistence foodstuffs is extremely complex and more farm-specific and inter-farm level examples are needed. From primary documents such as agricultural censuses, orphans court records, deeds, and tax assessments some indication of regional agricultural preferences could be obtained and the overall pattern of agricultural land use could be better understood.

Apart from a need to study changes in Delaware's agricultural and economic history, specific questions concerning farm life need to be addressed (Wesler 1982:18; Henretta 1978:3). Did farmers grow most of the food their families consumed? How much income was earned and how was it spent? What proportion went to food, rent, clothing, tools, taxes, and household goods? Questions such as these point to a larger paradigm in American history--to what degree were farmers self-sufficient and how did this change over time? Much has been written about the traditional self-sufficiency of American farmers (Loehr 1952; Henretta 1978: 13-16, 20; Merrill 1977; Bidwell and Falconer 1941) and the study of the wide range of farm sizes represented in the Route 13 Corridor would yield valuable data.

A detailed study of early land records would also yield data on the stability through time of different settlement patterns. By studying the boundaries of different parcels and how they change through time due to sale, inheritance, or subdivision, it would be possible to test specific hypotheses about the history of Delaware and the region. In this way, land use and inheritance patterns can be seen as an "artifact" (Carter 1983: xiv; Heite and Heite 1981: 1) of the historic occupation of Delaware. One hypothesis that could be tested is Carville Earle's observation that along the western shore of the Chesapeake a predominance of short-term farm tenancy in an area tended to increase and perpetuate chaotic land holdings as farm boundaries and acreages were continually being shifted and

disputed (Earle 1975: 182). A survey of deed, court of common pleas, chancery court, and other archival records could be used to test Earle's hypothesis, particularly in the Little River/Pipe Elm Branch area where 16 of the 31 sites surveyed were tenant sites.

Such a survey, supported by archaeological and material culture data from controlled surface collections, test excavations, and architectural investigations, could also be used to address other questions. For example, how permanent in general were farm and lot boundaries in the study area? How does the study area compare to other areas in Delaware and the Middle Atlantic? Again such specific questions can be used to address larger paradigms in American history. One such area of interest is the use of known trends in land ownership and inheritance patterns to mark larger changes in regional economic and social conditions (Mitchell 1978:70; Earle 1975:104-105, 131, 165). Data obtained from further work along the Route 13 Corridor would yield the information on land ownership and settlement patterns needed to address such questions.

Related to both Delaware's agricultural history and settlement pattern is the question of farmstead design. Farmstead design in Delaware and the Middle Atlantic has been the focus of a number of studies in a variety of disciplines, particularly architectural history (Herman 1982; Del Sordo 1984; Eberlein and Hubbard 1962; Carson et. al. 1981; Wells 1982; Manning 1981) and folkloristics (Glassie 1968, 1972). How were the agricultural complexes laid out, what was the arrangement and function of outbuildings, where were the yard areas and how was each used, and, in a more general sense, where were the early farmsteads placed within each land parcel? The relative importance of transportation, soils, markets, and other factors should be studied further on a more site-specific basis to see how they influenced farmstead design and placement through time.

Transportation has always been a key factor in Delaware history and further research questions could target additional areas of study (Heite and Heite 1982; Henry 1981:45). Various modes of transportation have been utilized in the study area through time and with these shifts in emphasis have come subtle changes in town development and size (Lemon 1967:503), rural settlement pattern, population density, and manufacturing opportunities such as carriage making, tanning, and foodstuff processing. The impact of railroad transportation on Middletown, Clayton, Kenton, and a number of other towns in Delaware is one example of the effects of changes in transportation. The effects of such changes in the Middle Atlantic region are extremely complex (Taylor 1951) and future research could seek to identify and assess these changes through site and locale-specific data.

The earliest forms of travel in the Route 13 Corridor were probably by boat and on foot, as the few early roads were frequently unsuitable for cart travel. Landings and the heads of navigable streams became transhipment centers and thus foci for

settlement. During the nineteenth century, the establishment of adequate roads and then railroads altered the commercial pattern and emphasized the junctions of these later modes of travel. Hamlets grew up around road/railroad intersections and places like Seven Hickories, Dinah's Corner, and Pearsons Corner were eclipsed by Hartly, Kenton, and Cheswold and other towns through which the railroad passed. Research within the proposed Rt. 13 Corridor could try to reveal the mechanisms of this change and document its ramifications for village life, commercial patterns, and population change.

One of the features of the early road network was taverns or inns placed at intervals along the major thoroughfares (Ward 1968). If the establishment could be situated at a crossroads, so much the better. Research into the Buck Tavern, at Summit Bridge, Delaware (Wilkins and Quick 1976), the Mermaid and Tweeds Tavern on Limestone Road (Catts et al. 1986, and the William H. Anthony Hotel in Stanton (Thompson and Gardner 1986) suggests that rural inns and taverns in Delaware were licensed, but often ephemeral businesses which were often contained in farmhouses or dwellings only slightly modified for the purpose. Further research on such sites, especially when integrated with specific data on the history of the region, could be a significant contribution to the existing data base.

Significantly, further research on the Route 13 Corridor offers the opportunity to study on a large scale community development and decline in rural Delaware. One of the most prominent features of Delaware history is the waxing and waning of hamlets and other "crossroad" communities as local service and transportation centers according to local and regional economic conditions. Thus far, over 100 such communities have been identified in the Route 13 Corridor. As barometers of larger social and economic changes, the study of crossroad communities such as Blakiston Crossroads and "mill towns" such as Noxontown could be used to study urbanism in a largely rural, context. The data produced by such a study would augment existing local studies (Heite and Heite 1985, 1986) and could become an important part of a diachronic study of regional community development.

Landing sites along the navigable portions of streams in the study area, particularly along the Near West/Near East alignment, could provide another focus for research. Landings were an integral part of regional transportation and economic systems throughout the historic period, yet virtually no documentation exists as to their actual location, size, use, or construction. Over 60 major landings have been located within or near the entire Rt. 13 Relief Route Corridor and further study of these sites and their use could yield valuable data.

Detailed information on landings, transporation, and "crossroad" communities could be used to address additional research questions. For example, how did Philadelphia, Baltimore, and New York influence the concentration of storing,

loading, and other commercial facilities in Smyrna, Dover and other commercial centers in southern New Castle and Kent Counties? What is the relationship between these changes in transportation and markets and the diachronic trend in Delaware agriculture towards more diversified and market-oriented crops? On a more specific level, what is the relationship between the tremendous growth of the Smyrna Landing area in themid-nineteenth century and the large-scale production of perishable truck and orchard crops, particularly peaches and tomatoes, in that area? The Smyrna area, including Smyrna Landing, contains over 60 agricultural (i.e. agricultural complexes, tenant residences) and commercial sites (i.e. warehouses, manufactories, landing operations, industrial tenant residences) and would be a particularly fertile area for further research.

In addition to general questions about the history of Delaware and the Middle Atlantic region, further research on the Route 13 Corridor could address a number of specific methodological questions within historical archaeology and material culture studies. For example, to what extent can archaeologically derived data be used to make reliable inferences about social and economic conditions, particularly wealth and status? Are not consumer choices, as Robert Foss (1985:2) pointed out, much more complex than the "rich buy expensive and the poor buy cheap"?

The integration of archival and material culture data is a further methodological concern that could be addressed. For example, how best can indications of social and economic circumstances, as inferred from the number and kind of artifacts recovered, be reconciled with site-specific assemblages suggested by inventories, court records, and other archival resources? Methodological questions such as these expand the scope of historical archaeology and material culture studies and have significant anthropological and historical implications.

Not to be overlooked is the impact of the construction of the present Rt. 13 on the lifeways of the people of the Upper Delmarva Peninsula. This road, which essentially replaced an older Philadelphia to Lewes Post Road, drastically altered the traffic pattern on the Delmarva when it was opened in the early 1920s.

In sum, by evaluating the site-specific data available from the sites discovered during this study within broader research questions, the significance of prehistoric and historic archaeological sites can be evaluated. Furthermore, analyses of these data can yield valuable insights on human behavior in the Delmarva region through time.