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CULTURAL RESOURCE SURVEY OF THE EXXON NUCLEAR FACILITY  
OAK RIDGE, TENNESSEE  
AN INTERIM REPORT

By

George F. Fielder, Jr.

Department of Anthropology  
University of Tennessee  
Knoxville  
May 1975

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This interim report was read and edited by Drs. Faulkner and McCollough; the final report was typed by Ms. Dorothy Fielder, who also helped in the editing.

## TABLE OF CONTENTS

|   | Page |
|---|------|
| ABSTRACT . . . . .                                  | ii   |
| ACKNOWLEDGMENTS . . . . .                           | iii  |
| LIST OF FIGURES . . . . .                           | v    |
| LIST OF TABLES . . . . .                            | vii  |
| INTRODUCTION . . . . .                              | 1    |
| Purpose . . . . .                                   | 1    |
| Scope . . . . .                                     | 1    |
| Previous Research . . . . .                         | 2    |
| THE SETTING . . . . .                               | 3    |
| Study Area Location . . . . .                       | 3    |
| Physiography . . . . .                              | 3    |
| Natural Resources . . . . .                         | 5    |
| Settlement History . . . . .                        | 9    |
| RESEARCH METHODOLOGY . . . . .                      | 15   |
| Prehistoric Sites . . . . .                         | 15   |
| Historic Structures and Sites . . . . .             | 15   |
| Documentation Procedures . . . . .                  | 17   |
| CULTURAL RESOURCES INVESTIGATED BY SURVEY . . . . . | 19   |
| Prehistoric Sites . . . . .                         | 19   |
| Historic Sites . . . . .                            | 37   |
| SUMMARY OF RESULTS . . . . .                        | 76   |
| Prehistoric Cultural Resources . . . . .            | 76   |
| Historic Cultural Resources . . . . .               | 77   |
| CONCLUSIONS . . . . .                               | 79   |
| Current Research . . . . .                          | 79   |
| Proposed Plant Impact . . . . .                     | 81   |
| RECOMMENDATIONS . . . . .                           | 83   |
| Prehistoric Sites . . . . .                         | 83   |
| Historic Sites . . . . .                            | 84   |
| REFERENCES CITED . . . . .                          | 86   |

## LIST OF FIGURES

| Figure  | Page |
|---|------|
| 1. Study Area Location . . . . .  | 4    |
| 2. Study Area Topography . . . . .  | 6    |
| 3. Location of Surveyed Areas . . . . .   | 16   |
| 4. Known Prehistoric Sites in the Immediate Vicinity<br>of <small>Exempted from Disclosure by Statute</small> . . . . . | 20   |
| 5. Plan of Site 40RE138 . . . . .   | 22   |
| 6. Selected Lithic Artifacts, Sites 40RE138 and<br>40RE140 . . . . .  | 27   |
| 7. Plan of Sites 40RE139 and 40RE140 . . . . .  | 30   |
| 8. Plan of Site 40RE140, <small>Exempted from Disclosure by Statute</small> ,<br>Showing Test Pit Locations . . . . .   | 34   |
| 9. Study Area Property Holdings in 1942, Prior<br>to Federal Acquisition, with Tract Numbers . . . . .                  | 38   |
| 10. Historic Structure Locations . . . . .  | 40   |
| 11. Plan of Structure 716A . . . . .  | 41   |
| 12. Plan of Structure 716B . . . . .  | 43   |
| 13. Label on Bottle from Structure 733A . . . . .   | 44   |
| 14. Plan of Structure 733A . . . . .  | 45   |
| 15. Plan of Structure 734A . . . . .  | 48   |
| 16. Plan and Elevations of Structure 734B . . . . .   | 49   |
| 17. Plan of Structure 742A . . . . .  | 53   |
| 18. Plan of Structure 754A . . . . .  | 55   |
| 19. Plan of Structure 754B . . . . .  | 58   |
| 20. Plan of Structure 824A with Details . . . . .   | 60   |

| Figure   | Page |
|--|------|
| 21. Plan of Structure 825A . . . . .   | 64   |
| 22. Plan and South Elevation of Structure 825B . . . . .                     | 65   |
| 23. Plan and East Elevation of Structure 825C . . . . .                      | 67   |
| 24. Plan of Structure 826A . . . . .   | 70   |
| 25. Plan, South and West Elevations, and Detail,<br>Structure 827A . . . . . | 72   |

## LIST OF TABLES

| Table  | Page |
|--|------|
| 1. Site 40RE138: Spatial Distribution of Diagnostic<br>Artifacts by Period . . . . .               | 25   |
| 2. Site 40RE139: Artifact Distribution by Locus . . .  | 32   |
| 3. Site 40RE140: Summary of Aboriginal Artifacts<br>Recovered . . . . .                            | 36   |
| 4. Summary of Prehistoric Sites Evaluation . . . . .   | 76   |
| 5. Summary of Architectural Characteristics of<br>Extant Historic Structures and Remains . . . . . | 78   |

## INTRODUCTION

In the fall of 1974, representatives of Exxon Nuclear Company contacted the Department of Anthropology, University of Tennessee, Knoxville, with a request to conduct an archaeological survey at the site of a proposed nuclear facility located on the Oak Ridge Reservation in eastern Tennessee. A research team from the Department of Anthropology began initial reconnaissance of the area on 1 November 1974; field investigations continued throughout November and December. Major C. R. McCollough and Charles H. Faulkner served as co-principal investigators, and the field work was directed by George Fielder, Jr., assisted by Victor Hood.

### Purpose

The purpose of the investigation was to locate, identify, and assess the importance of any cultural resources within the proposed project area and to evaluate project impact on any such resources. Cultural resources in this context include, but are not necessarily restricted to, (1) loci of prehistoric or historic aboriginal occupation or utilization, (2) sites of Euroamerican habitation or use, and (3) examples of existing vernacular architecture.

### Scope

The scope of the survey is considered in some detail in subsequent sections, but in brief it comprised coverage of the area bounded by Bear Creek Road on the south, Tennessee Highway 95 on the east, west to the Clinch River, and north to the crest of Pine Ridge (Fig. 1). Several areas were identified by Exxon Nuclear representatives as possible construction zones. These include the main plant site in Bear Creek Valley, a corridor from the main plant to the Clinch River along Grassy Creek, and the environs of the mouth of Grassy Creek. Little specific construction location information has been provided to date except for the main plant locus. The main plant locus has a dense vegetation cover at present; and although limited testing and survey was carried out there, a definitive statement on archaeological sites in this area will have to await construction clearing operations. Another possible corridor from the plant site to the Clinch River has been mentioned. This corridor is not included in the current survey boundaries and would require additional survey if activated.

Survey operations included surface surveying for aboriginal cultural debris, subsurface testing for evidence of

aboriginal occupations, preparation of measured drawings of extant historic structures, and photographic documentation of all cultural features noted. In addition, some historic materials such as bottles, ceramics, and bricks were collected on Euroamerican occupation sites.

### Previous Research

No intensive archaeological surveys had previously been conducted in the proposed plant site area, but the general Oak Ridge Reservation was surveyed recently (Fielder 1974); and a nearby area under consideration for the Clinch River Breeder Reactor Project has been evaluated by the Department of Anthropology, University of Tennessee, Knoxville (cf. Schroedl 1972, 1973, 1974a, 1974b).

In summary, the previous archaeological surveys in the general locality have shown the existence of numerous prehistoric sites [

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]

(Thomas 1894; McNutt and Graham 1961; Schroedl 1972, 1973, 1974a; Fielder 1974; University of Tennessee n.d.). Fielder's survey additionally documented an aboriginal site in one of the interior valleys [

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](1974:65). Schroedl (1974b) also conducted a survey of historic Euroamerican sites in the CRBRP area.

Of particular interest to the present study is the reporting of an archaeological site (40RE125) located at the [

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](Fielder 1974:50).

Prior to the current survey, this was the only reported site in the proposed Exxon nuclear facility project. The Schroedl historic site survey cited above also reported the remains of a house and associated farm buildings in the same general area.

## THE SETTING

Cultural resources do not exist as isolated entities but are intimately interrelated to the physical and biological environment. The following section discusses the local environment and how it relates to the cultural resources. It is presented as background information only and is *not* intended to be a complete characterization of the present biological resources of the proposed plant site. The emphasis herein is to give a historical perspective, rather than to exhaustively document the present condition of the area.

### Study Area Location

The Oak Ridge Reservation, located in eastern Tennessee about 30 miles west of Knoxville, is owned by the Federal Government. It includes Holifield National Laboratory (formerly Oak Ridge National Laboratory), the Y-12 Plant, and the Oak Ridge Gaseous Diffusion Plant.

The specific area under consideration in this study is located on the western end of the Oak Ridge Reservation and is generally defined by the Clinch River (Watts Bar Reservoir) on the west, Tennessee Highway 95 on the east, the crest and portions of the north slope of Pine Ridge on the north, and Bear Creek Road on the south (Fig. 1). These boundaries are somewhat indefinite, particularly on the south, since there is a possibility that construction activities could affect some areas south of Bear Creek Road.

### Physiography

#### Oak Ridge Area

### Topography

The Oak Ridge Reservation is located in the western part of the Tennessee section of the ridge-and-valley provenience (Fenneman 1938). This portion is characterized by a series of parallel ridges and valleys trending northeast. The general topography of the Reservation with the dominant ridges is shown in the earlier Fielder survey report (1974:Fig. 2). The range in altitude on the Reservation is from 220 to 407 meters (720 to 1335 feet) (U.S. Atomic Energy Commission 1974:25). The drainage pattern is dominated by the Clinch River, Poplar Creek, and many small feeder streams originating in the valleys and on the side slopes of the ridges.

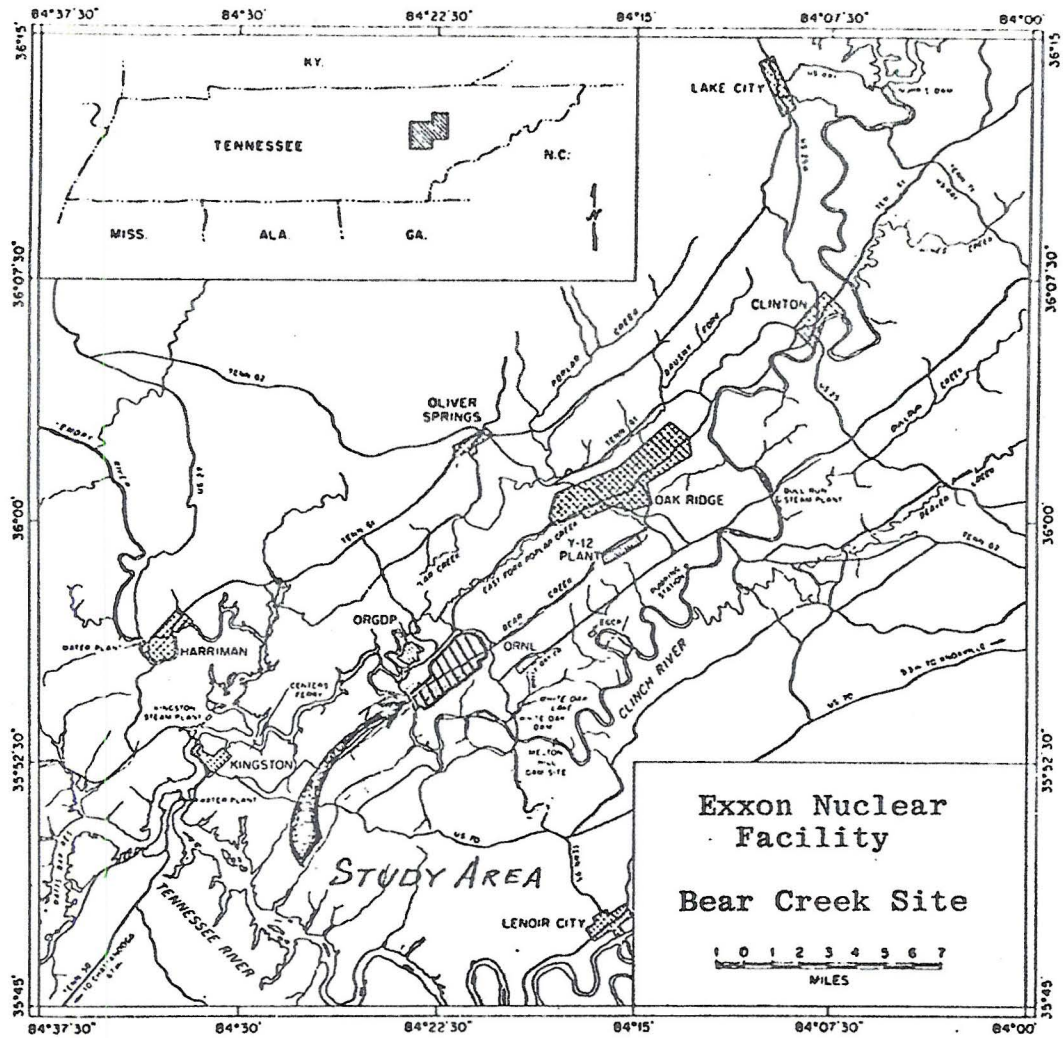


Fig. 1. Study Area Location

## Climatology

The present climate of the Oak Ridge area has been documented over a period of 20 years by the National Oceanographic and Atmospheric Administration. The following climatological information is taken from the *Draft Environmental Statement for Radioactive Waste Facilities* (U.S. Atomic Energy Commission 1974).

The climate is typical of the humid Southern Appalachian region. The mean annual rainfall is 53.5 inches (135 centimeters), and the mean temperature is 57.9°F (14.4°C). Precipitation is normally in the form of rain; but snowfalls can be heavy, as in the winter of 1959-60 when 41.4 inches (105.2 centimeters) were recorded.

Storms generally follow a northwest-to-southeast track; and the seasonal precipitation pattern is characterized by wet winters, dry springs, wet summers, and dry autumns. Specific precipitation and temperature data have been presented elsewhere (Fielder 1974:Table C.1, p. 118).

From an archaeological standpoint, the early spring moisture deficits, although compensated for by the summer rainfall, may have affected the development of large villages based on an agricultural product subsistence. This statement is predicated, however, on the assumption that the present climate is essentially similar to the climate 1000 years ago. Faunal and floral remains recovered from archaeological sites dating from this time period are sufficiently similar to present inventories to indicate such a similar climate (McCollough and Faulkner 1973).

## Exxon Plant Site

### Topography

The topography of the proposed plant site is dominated by two main ridges, Pine to the north and Chestnut to the south; the valley between is drained by two small creeks--Grassy Creek, which flows southwestward to the Clinch River, and Bear Creek, a tributary of Poplar Creek (Fig. 2). The western end of the study area includes the confluence of Grassy Creek and the Clinch River. Construction of Watts Bar Dam and Reservoir in 1942 by the Tennessee Valley Authority inundated the immediate confluence area (Fig. 2).

### Natural Resources

Although the biotic conditions at the proposed plant site will be thoroughly treated by other contributors to the



Fig. 2. Study Area Topography.

environmental impact assessment, the natural resources both present and past, important in understanding aboriginal and historic settlement in the area, will be treated here as they constitute significant anthropological data. Inventories of the present flora and fauna of the study area can be found in studies conducted on the Oak Ridge Reservation (Howell 1958; Howell and Dunaway 1959; Johnson 1964; Olson, Cristofolini, and Cristofolini 1966).

### Resources Important in Prehistoric Times

#### Faunal

The Clinch River provided a rich source of faunal food products to the Indians. Shellfish, fish, and the smaller aquatic invertebrates and vertebrates were used extensively for food by the aboriginal inhabitants of the area.

The following aquatic animals were probably available as potential food sources (adapted from McCollough and Faulkner 1973:14).

1. Mollusks are quite abundant in shallow rivers such as the Clinch; 40 species of pelecypods and 32 species of gastropods have been identified from the ponds, streams, and rivers of East Tennessee (Hickman 1937). The mussels and gastropods would have been readily accessible to the Indians; and judging from the large quantities of mussel shell frequently found in habitation site refuse, they were used extensively.
2. Although there are over 100 species of fish found in the streams of East Tennessee, probably only the larger varieties were important food sources. These would have included gar (*Lepisosteus* sp.), suckers (*Catostomidae*), catfish (*Ictalurus* sp.), bullhead (*Ameiurus* sp.), black bass (*Huro salmoides* and *Micopterus dolomieu*), sunfish (*Lepominae*), and freshwater drum (*Aplodinotus grunniens*).
3. Turtle remains occur quite frequently in archaeological deposits and probably were fairly easily obtained by aboriginal man. The common snapping turtle (*Chelydra serpentina*), spiny soft-shelled turtle (*Tryonix ferox*), musk turtle (*Sterntherus odoratus*), mud turtle (*Kinosturnum subrubrum*), painted turtle (*Chrysemys picta*), map turtle (*Graptemys geographica*), and the elegant slider (*Pseudemys scripta*) occur in the rivers and sloughs in and around the Oak Ridge area (Johnson 1964).

4. Frogs, toads, and other small amphibians and reptiles were probably collected and eaten also.

The faunal resources available on the flood plains included muskrat, beaver, mink and otter, ducks, geese, and the wading birds. The ridges and valleys of the Oak Ridge area would have contained a variety of animals such as the opossum, squirrel, fox, raccoon, rabbit, small rodents, black bear, white-tailed deer, elk, and the eastern woodland bison. Wild turkey, grouse, and other game birds that inhabit the open woodlands were available.

Henry Timberlake, an English army officer who traveled in East Tennessee in 1761-62, gave the following account of the animals available to the Cherokee:

There are likewise an incredible number of buffaloes, bears, deer, panthers, wolves, foxes, raccoons, and opossums . . . . There are a vast number of lesser sort of game such as rabbits, squirrels of several sorts, and many other animals, besides turkeys, geese, ducks of several kinds, partridges, pheasants, and an infinity of other birds, pursued only by the children . . . (Timberlake 1765:71).

In conclusion, the faunal resources available to aboriginal man in the Oak Ridge area were very numerous and available for the most part throughout the year, although there are seasons in which some species are difficult to obtain.

### Floral

Although the floral resources used by aboriginal man are more difficult to recover archaeologically than are the faunal, food remains are sometimes well enough preserved to allow the paleobotanist and archaeologist to reconstruct aboriginal dietetic habits. A recent archaeological report of investigations on the Tennessee River near Loudon, Tennessee, lists 62 species of plants that were probably used for food (McCollough and Faulkner 1973:23). All of these plants are found on the Oak Ridge Reservation (Olsen, Cristofolini, and Cristofolini 1966). The oak-hickory forests on the Reservation were probably quite important to the aboriginal inhabitants due to the nut resources they produced. Plant materials were also used for purposes other than for food; the various vines, cane, and other fibrous plants were undoubtedly utilized for basketry, weaving, cordage, and other similar functions.

### Resources Important to Euroamerican Settlers

Of prime importance to the settlers interested in agricultural pursuits was tillable land and the availability of water. As can be seen in Fig. 2, the topography of Bear Creek Valley was reasonably well suited for crops requiring small acreages.

The principal products were probably corn and vegetables grown for the table and canning. The land is reasonably well suited for growing tobacco. Surface water was available in Grassy and Bear creeks; the water table was amenable to the use of hand-dug wells.

Forest product resources at the time of early settlement consisted of mixed hardwoods; principal types were oaks, pines, and poplar. All three occur as structural members in buildings in the study.

### Settlement History

The settlement history of the project area stretches over a 10,000-year period, from the time of first exploitation by small bands of Indians hunting wild game, to historic occupation and farming, to the industrialization of the Manhattan Project. A brief synopsis of the settlement history taken from Fielder 1974 is given below.

#### Synopsis of Aboriginal Occupations in East Tennessee

The eastern section of Tennessee has seen a long sequence of human occupation; all of the major stages in the cultural evolution of the American Indian have been reported in the archaeological literature. When the first Europeans came into this section of East Tennessee, the Indians they encountered were the Cherokee, the last in a series of aboriginal inhabitants who had occupied the area for at least 10,000 years. Their predecessors do not have tribal names such as Cherokee, but are known by their archaeological culture names. The material remains of a past or present culture are the result of many different types of activities pursued by the members of the group. The tools indicate economic pursuits; e.g., stone or bone hoes are indicative of agricultural endeavors, arrowheads imply the use of the bow and arrow in hunting, etc. However, a group of people has a large number of traits other than material artifacts; their religion, language, lineage system, customs, and traditions are all part of the characteristics that make one group distinct from another. Since

the nonmaterial aspects of culture leave only the sketchiest evidence of their existence, archaeologists are confronted with the problem of identifying groups of people almost solely by their material culture, although some material remains strongly reflect shared social and ideological, rather than purely economic, behavior. The archaeologist, therefore, will identify a prehistoric society by the type of pottery they made, the styles of projectile points they used, and the types of dwellings they constructed. These archaeological cultures are given arbitrary names usually derived from a site where the particular culture is well represented.

In addition to naming archaeological cultures, the archaeologists have given names to the general time periods that are represented in the archaeological record. The archaeological periods for East Tennessee are the Paleo-Indian, Archaic, Woodland, Mississippian, and Historic Native American. Although these periods are defined by initial and terminal dates, each has general characteristic cultural manifestations associated with it; the Paleo-Indian period has a subsistence base, settlement pattern, and population density different from those of the Archaic period, for example.

#### Paleo-Indian Period

The first known period of human occupation in the East Tennessee region is the Paleo-Indian. This period is the least well defined due to a paucity of information, especially on when initial occupation occurred in the area. Current estimates place the initial known occupation about 10,000 years ago.

The presumed subsistence base was principally large-game hunting supplemented by gathering roots, berries, nuts, and probably anything else that was edible (Lewis and Kneberg 1958).

There is not a settlement pattern as such characteristic of this period since the population consisted of nomadic hunters. There are very few known habitation sites that date from the Paleo-Indian period; most of the material occurs as isolated artifacts or clusters of artifacts which indicate the Paleo-Indian sites were mainly briefly occupied campsites used for specific purposes rather than sites occupied for longer periods with multiple economic activities being pursued.

#### Archaic Period

The Archaic period lasted from the end of the Paleo-Indian period to the beginning of the Woodland period, roughly

from 8000 years ago to about the beginning of the Christian Era. The subsistence base, although similar to that of the Paleo-Indian period, put less emphasis on large game animals and more on the collection of aquatic resources, especially the mollusks. Plant foods were still procured with these probably becoming more important in the latter part of the period.

The settlement pattern in the Archaic period appears to be oriented to a riverine distribution. [ Exempted from Disclosure by Statute ]

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At the end of the Archaic period, there is evidence of intensive plant-food exploitation. Excavations at a site in Loudon County on the [ Exempted from Disclosure by Statute ] recovered the remains of acorn kernels, chenopod seeds, and sunflower seeds. The sunflower seeds were especially significant because their size indicated that they were of a domesticated variety (Brewer 1973:142). The feature containing these plant remains was radio-carbon dated at about 900 B.C. (UGa-517, McCollough and Faulkner 1973:65).

#### Woodland Period

The closer we come to the present, the more information we have concerning the lifeways of the aboriginal inhabitants of the area. The Woodland period lasted from about 500 B.C. to ca. A.D. 1000 and saw a number of important cultural changes. Plant resource domestication, which apparently began in the Archaic period, continued in conjunction with hunting and gathering activities. Ceramic technology was developed, an innovation that must have had wide repercussions in the areas of food preparation and storage. Extensive trade systems were apparently in operation as seen from the widespread dispersal of distinctive items such as sheet mica from North Carolina, shells from the Gulf Coast, and distinctive lithic materials from the Ohio area (Chapman 1973).

Distinctive customs developed in the Woodland period also; late in the period the disposal of the dead in mounds became a typical trait in East Tennessee. These burial mounds were used only for interment; they contain no other cultural debris unless it was an accidental inclusion due to the placement of the soil borrow pit in an area of previous human occupation.

The Woodland settlement patterns are better known than those of the previous periods. There appears to have been a seasonal pattern of resource exploitation in which the population

would move their camps to the area of current resource availability. This results in occupation sites occurring in different ecozones and ecotones at different times of the year. In East Tennessee, the river and stream terraces and bottomlands were apparently occupied in the summer months when, due to the low water levels, shellfish and other aquatic fauna could be easily obtained. In the fall when the rains caused frequent flooding in the rivers, and the acorns, walnuts, and hickory nuts were ready for gathering, the Indians would move camp to the uplands and occupy rockshelter sites during this phase of the economic quest.

McCollough and Faulkner (1973:127) have proposed a model of the subsistence-settlement pattern for the eastern Tennessee Valley Woodland period, which encompasses three basic types of habitation--summer-fall settlements, winter-spring base camps, and winter-spring hunting camps. The summer-fall settlements were located along the rivers, in the flood-plain zone, where incipient horticulture was probably practiced and intensive collecting of plant foods and shellfish took place. In the winter and spring, the group divided into smaller units, possibly the nuclear or extended family; lived in small base camps; and participated in hunting forays which used the rockshelters as temporary campsites.

### Mississippian Period

The Mississippian period is the time of extensive agricultural product-based aboriginal societies in eastern Tennessee. This period began around A.D. 1000 and lasted until the incursion of Europeans in the late 17th Century. The Mississippian period is characterized by large settled villages stabilized by the production of corn or maize. The relatively stable food production (as compared to the prior hunting-and-gathering economy) allowed the development of elaborate social systems which eventually involved political organization at the chiefdom level, a priesthood, grandiose ceremonialism, and the building of monumental earthworks.

The size and permanence of the Mississippian villages indicate year-round occupation, although there were probably small seasonal hunting-and-gathering camps used in addition to the main village. The villages were located on the younger river terraces and flood plain, where the soil was most suitable for agricultural purposes.

### Historic Native American Period

The Mississippian period ended with the arrival of European explorers in the East Tennessee area, and at that time technically gave into the "Protohistoric" and Historic periods.

When the first European explorers came into the eastern Tennessee area in the late 1600's, they encountered Indians living in large villages; growing corn; hunting the many varieties of game animals in the region; and in general leading a relatively rich, self-sufficient existence.

Only in the Historic period can we speak in terms of tribal affiliations, which are based on a multitude of cultural factors such as language, political affiliations, kinship, and other characteristics that leave only the barest traces in the pre-historic archaeological record. The ethnographic tribe living in the Oak Ridge area was the Overhill Cherokee. Their center of population was in the Little Tennessee River Valley in present-day Monroe County, but their activities certainly extended into the Oak Ridge area. There are probably some archaeological remains in the area that date from this ethnographic or historic period. Roberts (1969) cites one of the early settlers in the western portion of the Oak Ridge area as talking about the Indians living there in the late 1700's.

The Cherokee were strongly affected by the coming of the Euroamericans; they adopted many of the new trades, artifacts, and customs, but kept many of their own in the process. The result was a syncretic culture combining the best (as they saw it) elements of the Native American and Euroamerican cultures. In the end, however, their determination to coexist with the Euroamericans led to their demise. The outcome was that the Cherokee were evicted from their homeland under Federal orders and forcibly moved to Oklahoma in 1838 over the infamous "Trail of Tears."

#### Synopsis of Euroamerican Settlement

The first Euroamericans in eastern Tennessee arrived when the Cherokee were still in possession of these lands; they came to trap, hunt, and explore this new land that lay west of the Appalachians (Williams 1928). These early Whites included the French and English. The French were more concerned with symbiotic relationships with the Indians; they wanted the furs and goods that the Indians could provide French traders. The English were more threatening to the Indians because they sought land and allegiance from the Cherokees against the French. The establishment of Fort Loudoun on the Tellico River in 1756 was an overt attempt by the English to thwart the French incursions into East Tennessee and provide a foothold for English settlement there.

The first settlers in what is now the Oak Ridge Reservation were William Tunnell, Anne Howard, Isaac Freels, and Collins Roberts (Seeber 1928). The descendants of these families were still in the area when the Corps of Engineers acquired the land for the Manhattan Project in 1942 (U.S. War Department

1943-45). Many current place names on the Reservation, such as Freels Bend and Robertsville, were derived from these early settler families. The families living in the Exxon plant area are discussed in a later section describing the existing structures.

## RESEARCH METHODOLOGY

Two basic types of cultural remains were investigated in the proposed facility area--historic structures and prehistoric aboriginal occupation sites; each requires a different survey approach.

### Prehistoric Sites

A preliminary reconnaissance involved covering the area on foot to document obvious features such as earthen mounds, rockshelters, and caves. The field party also examined areas of exposed soil such as erosional washes, stream banks, and the wave-cut bank and beach along the Clinch River/Watts Bar Reservoir. In addition, an examination was made of the roads constructed to facilitate geological testing on the proposed plant site (Fig. 3).

Subsequent to the reconnaissance and surface-collecting phases, a number of small, 1- and 2-meter-square test pits were hand excavated to determine the nature of soil deposition and the presence or absence of buried artifactual materials. In most cases, the soil from test pits was hand or shovel sorted; however, at Site 40RE140 the test-pit soil was dry screened through 3/16-inch mesh screen.

Artifactual materials collected during the survey were processed at the University of Tennessee Department of Anthropology archaeology laboratories using standard techniques, including washing, cataloguing, and analyzing the material. All of the cultural material is in permanent storage at the Department of Anthropology and available to qualified researchers for future studies.

### Historic Structures and Sites

Historic sites and structures are cultural resources as much as prehistoric aboriginal sites and artifacts. The archaeologist investigating these sites has the advantage of access to historic documentation, albeit of highly variable quality.

Several methods were used to locate the sites of historic structures. The most informative source is an aerial photograph of the Oak Ridge area taken in 1942 prior to any Federal construction. This photomosaic is at a scale such that individual buildings can be clearly discerned. In addition to the farmsteads, the field patterns and other land use information are readily obtained from this source. The photomosaic is currently



Fig. 3. Location of Surveyed Areas.

housed at the ERDA (USAEC) Photographic Services laboratory behind the Federal Building in Oak Ridge, Tennessee.

Several maps dating from the late 1930's and early 1940's were also useful in locating structures and former building sites. The U.S. Geological Survey topographic quadrangles Elverton and Bethel Valley show historic structures in the study area on their 1941 editions. A planimetric map prepared by the Tennessee Valley Authority entitled "The Kingston Demolition Range" also shows the road distribution and several structures, as of about 1938. This map was prepared during the development of the Top Secret Manhattan Project--hence the code name Kingston Demolition Range.

The U.S. Army Corps of Engineers' final land acquisition maps for what is now the Oak Ridge Reservation give the names of the last owners of the various properties included in the present study area (U.S. War Department 1943-45).

In summation, all of these documentary sources were very helpful in locating and identifying structures and sites pertaining to the historic period. However, since a number of these structures have been either salvaged or razed, in some cases very little physical evidence remains of what was once an active farmstead.

A number of other methods besides the use of historical records were employed in locating old farmstead sites. One of these was the occurrence of large hardwood trees around the main house site. These large trees, which undoubtedly provided shade for the yard, proved to be quite indicative of former farmhouse loci. In addition to the large trees, there was a positive correlation between house or other structure sites and the presence of honeysuckle vines. Several crew members noted resignedly that the foundations seemed to be under the heaviest concentrations of vines, rosebushes, and briars. Howell has made similar observations on the characteristic vegetation found on abandoned homesites and cleared fields (1958:5).

We also used the presence of diagnostic artifacts such as glass bottles, cans, and other scattered debris, as well as structural remains and auxiliary structures such as fences and property lines, to pinpoint historic sites.

#### Documentation Procedures

All structural remains located were recorded using a combination of measured drawings, photodocumentation (color and panchromatic film), and detailed notes on construction materials and techniques. Artifacts relating to construction and habitation such as building hardware, glass, and ceramics were collected

to aid in the establishment of date of construction or first occupancy. All of the measured drawings and associated records are part of the permanent files in the Department of Anthropology, University of Tennessee, Knoxville.

## CULTURAL RESOURCES INVESTIGATED BY SURVEY

Archaeological sites in Tennessee are designated using the Smithsonian system in which Tennessee carries the prefix 40. The county in which a given site is located is designated by a two-letter abbreviation, such as RE for Roane County. Specific sites are numbered sequentially as they are recorded; thus the one hundred fortieth site recorded in Roane County, Tennessee, is designated 40RE140.

For the purposes of this survey, a prehistoric archaeological site is considered to be a specific location that shows physical evidence of use by aboriginal man. This evidence can be in several forms including discarded artifacts and other products or effects of human activity, distinctive soil strata affected by human occupation, or such evidence as the presence of burned areas referable to cooking activities. Isolated artifacts without additional evidence are not usually considered sufficient indications of occupation or use to constitute archaeological site status even though the presence of distinctive types of artifacts can be quite important in studying archaeological distribution patterns.

In a similar manner, locations of historic human habitation constitute historic archaeological sites. Historic sites can be numbered using the Smithsonian system; but because there is such a large number of historic sites, it is impractical to do so.

The historic structures and sites investigated during this survey were identified by the land acquisition tract numbers assigned by the U.S. Corps of Engineers when the property was acquired from private landowners for the Manhattan Project in 1942-45. The tract information was obtained from the final land acquisition maps (U.S. War Department 1943-45).

Prehistoric SitesSite No. 40RE125

Location: This site is located on the [

Exempted from Disclosure by Statute

](Fig. 4).

General description: The site is characterized by scattered  
artifactual remains [

Exempted from Disclosure by Statute

]

These materials were recovered approximately 6 meters inland, from a continuous 30-meter segment of the

**Exempted from Disclosure by Statute – Withheld Under 10 CFR 2.390(a)(3)**

**Figure 4. Known Prehistoric Sites in the Immediate Vicinity of [Exempted from Disclosure].**  
by Statute

[

Exempted from Disclosure by Statute

Disclosure by Statute

]The local topography in the site area is [ Exempted from  
]with the majority of the site occupying  
the first terrace and possibly extending into a slight  
swale on the inland side.

Present condition: The site is partially inundated by Watts Bar Reservoir at the normal summer pool level [ Exempted from Disclosure by Statute ] (AMSL); during the winter months the pool drops to about 735 feet, exposing stretches of mudflats and old terraces covered with lake-borne silt deposits. A small portion of the site is above summer pool level and is currently covered with light vegetation including sycamore trees and cane.

Previous investigations: This site was initially recorded during a survey of the Oak Ridge Reservation (Fielder 1974:50).

Current investigations: Surface collections were made, adding to the material inventory previously reported. In addition, a series of test pits were manually excavated to investigate subsurface soil strata and to check for undisturbed cultural data (Fig. 5).

Cultural materials recovered: Artifactual materials recovered by this survey include one steatite bowl fragment from [ Exempted from Disclosure by Statute ], chert chipping debris, several fire-cracked cobbles, and a spent .22-caliber brass cartridge with an "H" headstamp. This headstamp was used by Winchester Repeating Arms Company from 1866 to present (Logan 1959:8).

Comments: The previous survey of this site had recovered cultural material referable to a Woodland period occupation and had noted the presence of a burned area at the [ Exempted from Disclosure by Statute ] (Fielder 1974:50). Subsequent surface collections indicate a possible Archaic period occupation. Test pits did not, however, indicate the presence of concentrated cultural materials that would suggest any significant or intensive use by aboriginal peoples. The main locus of aboriginal occupation in the vicinity of [ Exempted from Disclosure by Statute ] appears to be downstream at Site 40RE138.

The burned area noted previously was investigated and determined to be of historic origin; a .22-caliber cartridge was found in the burned deposit in a context indicating that this feature is attributable to recent burning during reservoir clearing, or as a fisherman's campfire.

Possible impact: Based on survey and testing results, the archaeological potential represented by Site 40RE125

does not warrant further archaeological investigation due to the effect of previous agricultural activities, Watts Bar Reservoir inundation, and the lack of significant undisturbed cultural context.

Site No. 40RE138

Location: This site is located[

Exempted from Disclosure by Statute ]

General description: The site is situated[

Exempted from

Disclosure by Statute ]

(Fig. 5). Cultural materials associated with this site were recovered[

Exempted from Disclosure by Statute

.] Artifact distribution indicates the site[

Exempted from Disclosure by Statute

.] The inland (east-west) extent of the site has not been determined, but testing indicated that[

Exempted from Disclosure by Statute

elevations.

Present condition: The site is[

Exempted from Disclosure by Statute ]

, and substantial amounts of artifactual material are eroding from[

Exempted from Disclosure by Statute

,] the site is covered with light to moderate vegetation. There is a possibility that a portion of the site was used for [ Exempted from Disclosure by Statute ] fill, but additional information is required including test-pit data and records on the bridge construction.

Aerial photographs made in 1942 show that this area was under cultivation prior to acquisition by the Federal authorities, and as such has been disturbed by plowing and other agricultural activities.

Previous investigations: None. This site was first recorded during the current survey.

Current investigations: When Watts Bar Lake reached the normal low winter pool stage in November, the survey crew examined[

Exempted from Disclosure by Statute

] and made

a controlled surface collection. [ Exempted from Disclosure by Statute ] was collected in 10-meter units starting from [ Exempted from Disclosure by Statute ]. All cultural material visible on the surface was collected, excluding fire-cracked rock and obviously recent artifacts such as beer bottles.

In addition to the surface collections, four test pits were hand excavated on the terrace adjacent to concentrations of artifacts recovered from the beach area. These were not completed and will be finished at a later date, in conjunction with proposed backhoe trenching (see below).

**Materials recovered:** Table 1 presents a summary of the artifacts recovered including temporal and cultural affiliations where applicable. All of the artifacts in Table 1 were recovered from the eroded beach area.

**Comments:** The wide range of temporal and cultural assignments as shown in Table 1 indicates that the site area may have been occupied or used over a period of about 10,000 years, although probably intermittently since some known eastern Tennessee cultural manifestations are not represented. Specifically, there are diagnostic artifacts from the following recognized periods:

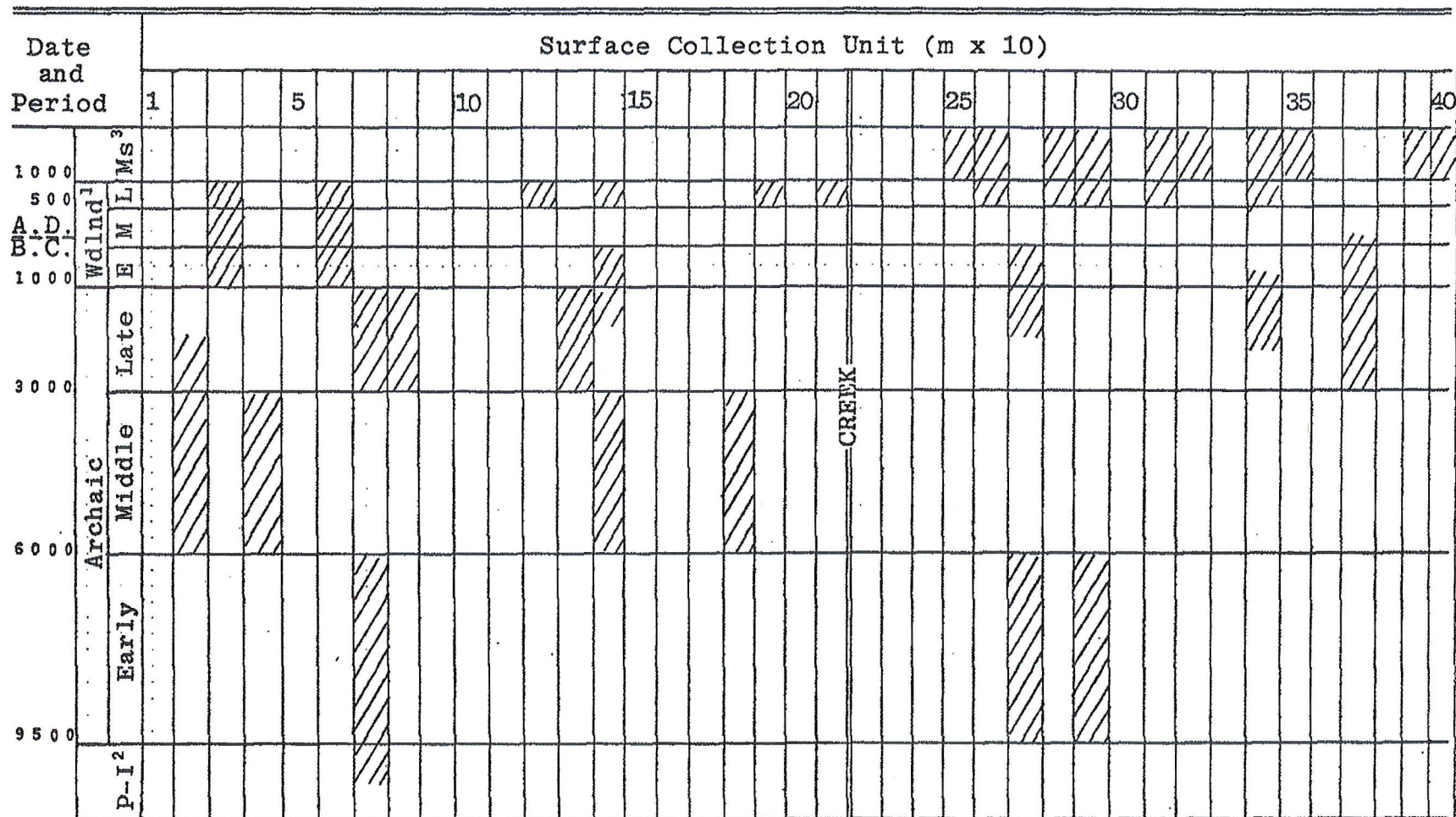
1. Paleo-Indian. One large unifacial scraper with continuous heavy marginal retouch and utilization wear on one margin (Fig. 6) has attributes usually associated with materials recovered from Paleo-Indian sites. Although affiliation with this period cannot be demonstrated conclusively, it is not unlikely that this artifact was manufactured and used prior to the Archaic period.
2. Archaic. A total of fourteen projectile points referable to the Archaic period were collected; of this number, three are considered Early Archaic, four are Middle Archaic, and seven are Late Archaic types.

The earliest diagnostic projectile point in the collection is a small corner-notched point with a serrated blade and a heavily ground, slightly incurvate base (Fig. 6k). This point fits the Palmer type description given by Coe (1967:67). The other two projectile point/knife artifacts referable to the Early Archaic period do not fit described types except in general attributes.

Middle Archaic artifact types include projectile points similar to the Normandy Archaeological Project Types 113 and 114 (Faulkner and McCollough 1973:127). These apparently Middle Archaic types could also be assigned to the Late Archaic period as the distinction between the two subperiods is frequently indistinct. Likewise the separation between the Late Archaic and the Early Woodland

TABLE 1

SITE 40RE138  
SPATIAL DISTRIBUTION OF DIAGNOSTIC ARTIFACTS BY PERIOD



<sup>1</sup>Woodland. E: Early; M: Middle; L: Late.

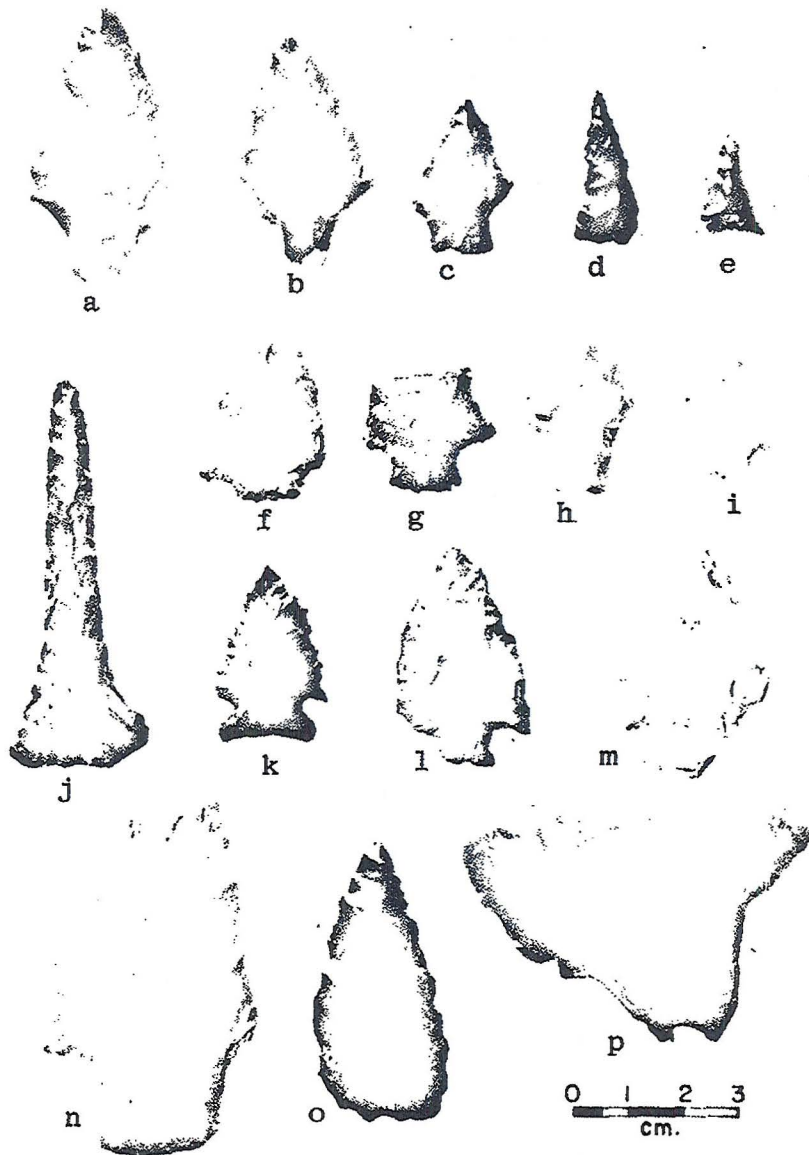
<sup>2</sup>Paleo-Indian.

<sup>3</sup>Mississippian.

40RE138

|                             |                             |                         |               |               |
|-----------------------------|-----------------------------|-------------------------|---------------|---------------|
| a.<br>Beach Unit 13         | b.<br>Unit 3                | c.<br>Unit 29           | d.<br>Unit 34 | e.<br>Unit 14 |
|                             | f.<br>Unit 4                | g.<br>Unit 14           | h.<br>Unit 2  | i.<br>Unit 6  |
| j.<br>Unit 4                | k.<br>Unit 7                | l.<br>Unit 24           | m.<br>Unit 37 |               |
| n.<br>40RE140<br>Test Pit 2 | o.<br>40RE140<br>Test Pit 2 | p.<br>40RE138<br>Unit 7 |               |               |

Fig. 6. Selected Lithic Artifacts--Sites 40RE138 and 40RE140.



periods is not always easily achieved. Some artifact types appear to occur in both periods; thus there is not a line of precise demarcation typologically. Stone bowls carved from steatite commonly occur in the late phases of the preceramic Archaic as well as the Early Woodland period. Five steatite bowl fragments were recovered from the [Exempted from Disclosure by Statute] area.

3. Woodland. The Woodland period, which saw the addition of ceramics to the prehistoric artifact inventory, is also well represented at this site. Crushed limestone and grit-tempered ceramics characteristic of the Early Woodland period and projectile point types referable to Late Archaic/Early Woodland occupations were recovered from the beach area. There is an absence of ceramics associated with Middle Woodland phases. The principal Late Woodland period focus in eastern Tennessee--Hamilton--is well manifested in the surface collections. Both ceramic types and lithic artifacts associated with the Hamilton focus were recovered.

Four Hamilton-type small triangular projectile points (Fig. 6k) were recovered from the beach area near the mouth of the small unnamed creek about 220 meters downstream from the [Exempted from Disclosure by Statute] (Fig. 5). Also this immediate area produced sherds of a limestone-tempered, cord-marked ceramic fitting the Hamilton Cord Marked type description (Lewis and Kneberg 1946:103).

The Hamilton focus is primarily known as a mortuary complex associated with the use of burial mounds. The current survey and previous surveys of the area have not reported any mounds in this immediate portion of the site (University of Tennessee n.d.). This segment of Site 40RE138 is significant in that it could contribute to a fuller understanding of the nonmortuary aspects of the culture, a current goal in eastern Tennessee archaeological research (McCollough and Faulkner 1973:128).

4. Mississippian. Ceramics tempered with crushed mussel shell are considered diagnostic of this period; 36 sherds with this type of temper were recovered. All were encountered [Exempted from Disclosure by Statute] from the [Exempted from Disclosure by Statute] (Fig. 5), and no lithic artifacts unquestionably attributable to this period were found. None of the sherds recovered is diagnostic of any particular Mississippian subperiod.

5. **Conclusions.** The distribution of artifacts along the [Exempted from Disclosure by Statute] area shows a concentration of Archaic materials from the [Exempted from Disclosure by Statute] to the mouth of [Exempted from Disclosure by Statute]; Woodland period artifacts are concentrated around the mouth of this creek; and the Mississippian component is located [Exempted from Disclosure by Statute] at least as far as the [Exempted from Disclosure by Statute] (Fig. 4). Local informants report that the construction of the loading terminal disturbed considerable archaeological remains including materials referable to the Mississippian period. The current survey corroborates this information.

The presence of Late Woodland Hamilton artifacts has considerable potential significance. Although a large number of the burial mounds have been excavated, only a few habitation sites from this period are known (McCollough and Faulkner 1973:124).

**Recommendations:** Due to the concentration and possible stratification of diverse cultural remains on the deflated [Exempted from Disclosure by Statute] Watts Bar Reservoir levels, additional testing of the natural and cultural strata should be undertaken. This would be best conducted by employing (1) initial backhoe trenching in several locations, and (2) controlled test pit excavation if the preliminary strata cuts were productive. This work was planned as part of the current survey but was postponed at Exxon's request. The possible presence of Paleo-Indian, Early Archaic, and Late Woodland period remains requires that the terrace area be further tested to evaluate possible adverse impact of plant construction.

#### Site No. 40RE139

**Location:** This site is mainly located [

Exempted from Disclosure by Statute

](Fig. 7).

**General description:** Rather than a continuous distribution of cultural debris, this site is a series of discrete concentrations of debris occurring on the [

Exempted from Disclosure by Statute

](Fig. 7). They are characterized by scattered lithic debris, a few fire-cracked cobbles (possibly the result of aboriginal activity) and several

modified cobbles. These loci would not have been located had not[ Exempted from Disclosure by Statute ]the material. The site was surveyed[ Exempted from Disclosure by Statute ]

] The loci are quite small, ranging in size from 2 x 5 meters to 15 x 20 meters.

Present condition: The site,[ Exempted from Disclosure by Statute ]  
during the summer, is[ Exempted from Disclosure by Statute ].  
There is no cultural stratigraphy present, and the artifacts are on a deflation surface[ Exempted from Disclosure by Statute ].

Previous investigation: None.

Current investigations: The site area was surface collected with[ Exempted from Disclosure by Statute ]. All cultural material present on the surface was recorded and the location mapped. No test pitting was conducted due to the low artifact concentrations and the deflated nature of the deposit. The[ Exempted from Disclosure by Statute ] showed no evidence of any culturally derived soil strata.

Cultural materials recovered: A compilation of the materials collected from each locus is shown in Table 2.

Comments: The scattered distribution, low artifact density, and small areal extent of the loci may indicate very limited use of this area, or the activities of a few individuals. These small concentrations could be related to the larger sites [ Exempted from Disclosure by Statute ], such as Sites 40RE125 and 40RE138; but without considerably more information indicating contemporaneity with either of these sites, we are left with pure speculation. No diagnostic artifacts were recovered, but the absence of ceramics could suggest Archaic period affiliations for all of the loci. This conclusion is very tentative due to the inherent limitations of using negative evidence in archaeology; differential preservation plays havoc with such exercises in logic.

Recommendations: Due to the sparse concentration of material, its secondary context[ Exempted from Disclosure by Statute ], and the absence of undisturbed parent deposits, no further investigations are warranted at the loci constituting Site 40RE139.

#### Site No. 40RE140

Location: This site is located[

Exempted from Disclosure by Statute

] (Fig. 7).

TABLE 2  
SITE 40RE139:  
ARTIFACT DISTRIBUTION BY LOCUS

| Locus | Cultural Material                    |                  |                              | Other                            |
|-------|--------------------------------------|------------------|------------------------------|----------------------------------|
|       | Cryptocrystalline<br>Chipping Debris | Pitted<br>Cobble | Fire-Cracked<br>Rock Present |                                  |
| 1     | 6                                    | -                | ✓                            | Hammerstone                      |
| 2     | 12                                   | -                | -                            | -                                |
| 3     | 2                                    | -                | ✓                            | Biface (1), core<br>fragment (1) |
| 4     | 2                                    | -                | ✓                            | Core fragment (3)                |
| 5     | 3                                    | 1                | ✓                            | Ground and bat-<br>tered cobble  |
| 6     | -                                    | -                | ✓                            | -                                |
| 7     | -                                    | 1                | ✓                            | -                                |
| 8     | -                                    | 1                | -                            | -                                |

General description: Site 40RE140 is a small limestone cave  
[

Exempted from Disclosure by Statute

] The cave entrance is about 1.4 meters (4.5 feet) high and about 2 meters (6.5 feet) wide. The first passage, oriented at a bearing of [ Exempted from Disclosure by Statute ] extends about 5 meters (16.4 feet) down a gentle slope. At this point the surface becomes level, and the passage turns due south for about 5.4 meters (18 feet); it then turns to a bearing [ Exempted from Disclosure by Statute ] for about 2.7 meters (8.8 feet). The passage begins to incline upward slightly and runs for 7.0 meters (23 feet) [ Exempted from Disclosure by Statute ] then rises sharply (approximately 30°) and [ Exempted from Disclosure by Statute ] for about 10 meters (33 feet) as measured on the incline (Fig. 8).

The surface of the cave floor is littered with rockfall, broken glass Mason jars, scattered bones, and aboriginal artifacts. The passage width varies from about 3 meters (10 feet) to 1 meter (3 feet), and the roof height varies from 1.4 meters (4.5 feet) at the entrance to an estimated 3 meters (10 feet). The only fauna observed in the cave were insects on the roof.

Present condition: The site is partially obscured by heavy vegetation [ Exempted from Disclosure by Statute ] and may be virtually hidden during the summer months. The interior of the cave as described above contains the refuse of both aboriginal and recent occupation or use.

Previous investigation: Although the site has not been recorded prior to the current survey, there is evidence that relic collectors have found the site. There is a small pothole in the rear of the cave, and our test pits encountered historic artifacts at least 40 centimeters below the surface, indicating considerable disturbance. No previous professional work has been conducted at this site.

Current investigations: The interior of the cave was tested for undisturbed aboriginal deposits by excavating three test pits (Fig. 8). Test Pit 1, 1 meter square, located at the entrance of the cave, was excavated to a depth of 1 meter (3 feet). Test Pit 2, 4.8 meters (15.7 feet) inside the chamber and in its level portion, was excavated to the limestone cave floor (1 meter at this point). Test Pit 3 was located at the base of the steep slope in the rear of the cave; this pit, 50 centimeters square, was also excavated to a depth of 1 meter below the present surface.

Each test pit was excavated in 10-centimeter arbitrary levels, and the soil from each level was dry screened through 3/16-inch mesh. Samples of surface soil and debris were also screened.

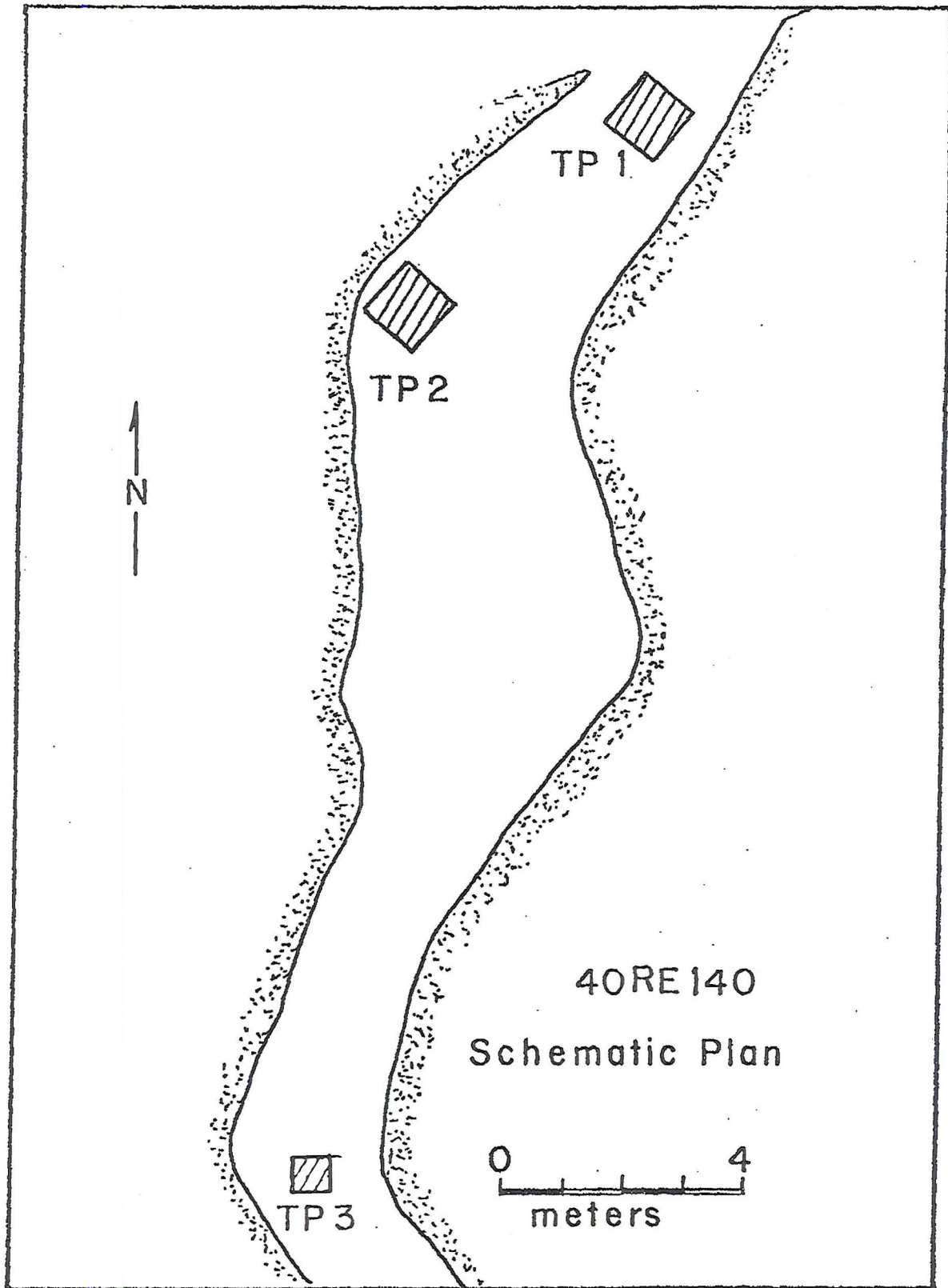


Fig. 8. Plan of Site 40RE140, [ Exempted from Disclosure by Statute ],  
Showing Test Pit Locations.

Materials recovered: The material recovered included a number of aboriginal artifacts, historic period debris, and some faunal remains transported into the cave by human agents. A summary of the aboriginal artifacts is given in Table 3.

The faunal remains, identified by Dr. Paul Parmalee, University of Tennessee Department of Anthropology, include the following mammals: deer, cow (calf), sheep or goat, striped skunk, cottontail rabbit, woodchuck, opossum, canid (dog?), and wood rat. In addition, several human bones were recovered in the screening of surface material. These include teeth, an adult patella, a phalanx, and a fragment of a sacrum.

A large number of mussel shells were also recovered and are being analyzed and identified by Dr. Parmalee; these findings will be detailed in the final report.

The faunal remains are interesting since they represent a collection probably derived from several sources. The calf, sheep/goat, and possibly deer bones probably came from the activities of recent users, i.e., farmer's or hunter's activities prior to 1942. The rabbit, woodchuck, skunk, opossum, and wood rat remains could be attributed to use of the cave by a fox or other similar carnivore. However, since the cave was obviously used by prehistoric man, the deer, rabbit, woodchuck, opossum, wood rat, and human bones could result from this phase of the cave's use. The presence of mussel shells of various species not currently available in the immediate area indicates that they are there due to use by prehistoric man (Parmalee, personal communication).

The human bones probably derive from intentional interment, although no direct evidence of human burials was found in the test pits.

Historic artifacts include numerous pieces of broken Mason-type fruit jars dating from the 1930's and early 1940's, iron barrel hoops, one barrel stave, a galvanized iron washtub, a piece of corrugated stovepipe, and numerous pieces of corroded iron sheet fragments. This assemblage suggests the production of alcoholic beverages, but other interpretations are possible.

Comments: The prehistoric artifact collection indicates that the cave was used by aboriginal Indians in at least two time periods--the Late Archaic and Early Woodland. The presence of mussel shell and some mammalian fauna suggests a possible limited habitation, but no definite evidence (e.g., fire hearths) was encountered. The significance of the site rests in the knowledge that prehistoric peoples in the area were using caves as well as stream terrace locations for habitation.

TABLE 3  
SITE 40RE140:  
SUMMARY OF ABORIGINAL ARTIFACTS RECOVERED

| Excavation Unit    | Material Recovered |       |                            |                               |         | Shell | Historic |
|--------------------|--------------------|-------|----------------------------|-------------------------------|---------|-------|----------|
|                    | Core               | Flake | Projectile Point/<br>Knife | Other                         | Ceramic |       |          |
| Surface            | -                  | 3     | -                          | 2 <sup>2</sup>                | 25      | ✓     | ✓        |
| Test Pit 1         |                    |       |                            |                               |         |       |          |
| Level <sup>1</sup> |                    |       |                            |                               |         |       |          |
| 1                  | -                  | -     | -                          | -                             | -       | ✓     | -        |
| 2                  | -                  | -     | -                          | -                             | -       | ✓     | -        |
| 3                  | 1                  | 1     | -                          | -                             | -       | ✓     | -        |
| 4                  | -                  | -     | -                          | -                             | -       | ✓     | -        |
| 5                  | -                  | 1     | -                          | -                             | -       | -     | -        |
| 6                  | -                  | 2     | -                          | -                             | -       | -     | -        |
| 7                  | -                  | 2     | -                          | -                             | -       | -     | -        |
| 8                  | -                  | -     | -                          | 2 <sup>2</sup>                | -       | -     | -        |
| Test Pit 2         |                    |       |                            |                               |         |       |          |
| Level              |                    |       |                            |                               |         |       |          |
| 1                  | -                  | 2     | -                          | 1 <sup>3</sup>                | -       | -     | ✓        |
| 2                  | -                  | 2     | -                          | -                             | -       | -     | ✓        |
| 3                  | -                  | 5     | -                          | -                             | -       | ✓     | ✓        |
| 4                  | -                  | -     | 2 <sup>5</sup>             | 5 <sup>2</sup>                | -       | ✓     | ✓        |
| 5                  | -                  | 2     | -                          | 9 <sup>2</sup> 1 <sup>4</sup> | -       | -     | -        |
| 6                  | -                  | 7     | -                          | -                             | -       | ✓     | ✓        |
| 7                  | -                  | -     | -                          | 2 <sup>2</sup>                | 1       | ✓     | -        |
| 8                  | -                  | -     | -                          | -                             | -       | ✓     | -        |
| 9                  | -                  | -     | -                          | 3 <sup>2</sup>                | -       | -     | -        |
| 10                 | -                  | -     | -                          | -                             | -       | -     | -        |

Test Pit 3

Test Pit 3 contained bone and shell material to a depth below surface of 80 cm.

<sup>1</sup>Ten-centimeter level; e.g., Level 1 0-10 cm. B.S.

<sup>2</sup>Tabular blocks of chert.

<sup>3</sup>Biface blank or roughout.

<sup>4</sup>Hematite flake.

<sup>5</sup>Cf. Fig. 6n,o.

Recommendations: Due to the location of the cave[  
Exempted from Disclosure by Statute ], no direct impact of plant construction is anticipated. However, since the cave site is known to relic collectors and construction in the area would make the site more easily accessible, there is a possibility of secondary impact. At this time no additional testing is recommended. However, if a secondary impact is anticipated, the possibility of salvage excavations should be considered.

### Historic Sites

In the previous section prehistoric sites were described; this section examines the archaeological sites resulting from historic human habitation and use. These sites are not historic in the sense that they were the habitations of historically important persons, but one must put in proper perspective the value of the houses of a few important persons as compared to those of the vast majority of persons living at any moment in time. One should not study only architect-designed structures while ignoring those designed and built by the owner using techniques and traditions handed down generation after generation. To do so grossly distorts the picture future generations will have of the majority of the population. In this perspective, the houses, outbuildings, barns, and other structures present in the area represent a way of life that has essentially disappeared from the American scene. Life in rural eastern Tennessee did not change a great deal from the early 1800's to the first quarter of the 20th Century. There were a few notable introductions into the artifact assemblage, such as the automobile, but the characteristic way of life was one of economic self-sufficiency integrated with strong family ties. The coming of the Manhattan Project catapulted this section of eastern Tennessee into the 20th Century and affected the traditional patterns in many ways.

The structures investigated during the current survey date prior to the Manhattan Project, and some may date as early as the mid-1800's. They are important due to the way of life they represent, rather than whether or not historically important persons lived there.

The following is a description of the location and current condition of all of the structures that could be relocated. A similar study has been conducted in an adjacent area currently under consideration for the Clinch River Breeder Reactor Project (Schroedl 1974b).

### Tract No. 716

Location: This 120-acre tract was located northwest of Pine Ridge along[  
Exempted from Disclosure by Statute ] east of the Wheat community (Fig. 9).



**Ownership:** The property was acquired from E. S. Hembree by condemnation on 2 February 1943 (U.S. War Department 1943-45:23). Prior ownership is currently being researched.

### Structure 716A

**General description:** A large frame double-pen house with additions and an excavated cellar and a central chimney.

**Location:** This structure was situated on a small knoll just above a dirt road that provided access to the main road  
[Exempted from Disclosure by Statute] The house is shown on the 1941 Bethel Valley quadrangle[

Exempted from Disclosure by Statute  
](Fig. 10).

**Present condition:** The house has been razed; only the foundation stones, parts of the sills, and a partially collapsed chimney and fireplace remain.

**Current investigations:** The foundation and remaining structural evidence were mapped and photographed.

**Building plan:** Essentially double pen with a central chimney and additions resulting in a "T" shape (Fig. 11).

**Structural details:** (cf. Fig. 11)

Foundation. Stone piers laid dry using natural limestone.

Construction. Frame with hewn oak sills. The sills are the only remaining structural members.

Roof. No data.

Doors. Main entrance located on west side.

Windows. No data.

Chimney and fireplaces. Brick chimney laid on dressed limestone block foundation, partially collapsed. The fireplace was made of brick and fieldstone with a concrete hearth. The chimney placement is shown in Fig. 11 along with the rubble from the collapsed portion which may obscure the remains of a second chimney foundation.

Porch. There is foundation evidence for a porch on the west side.

Steps and path. On the west side of the house, a flagstone walkway led up the hill to the porch. At the edge of the presumed porch was a step stone with the date 1901 carved on the top surface.

Cellar. An excavated cellar was located at the northwest corner of the house under an addition. A concrete set of steps form the exterior entrance.

**Exempted from Disclosure by Statute – Withheld Under 10 CFR 2.390(a)(3)**

Materials collected: One 18-inch-diameter cast-iron flowerpot/planter with a floral motif on the exterior surface was located in the yard on the southeast side.

Comments: There are four large shade trees in front of the west side of the house. This house provides a dated example of the floor plan type and construction.

### Structure 716B

Location: This structure is shown on the 1941 edition of Bethel Valley quadrangle[

Exempted from Disclosure by Statute

](Fig. 10).

Present condition: The chimney has partially collapsed, and the fieldstone foundation piers are in their original location. The site is covered with light to moderate vegetation.

Current investigations: The foundation was mapped and photographed.

Building plan: The basic configuration is a two-pen saddle-bag type with a single chimney and fireplace in the center.

Structural details: (cf. Fig. 12)

Foundation. Limestone piers laid dry.

Construction. Presumed frame; no structural members remain on the site.

Roof. No data.

Doors. Presumed on the north side.

Windows. No data.

Porch. Possibly on north side.

Cellar. An excavated cellar was under the floor of the east pen. It is unlined.

Chimney and fireplaces. The one chimney and fireplace is made from commercial brick laid on a limestone block foundation. Several bricks were marked *REYNOLDS BLOCK*.

Materials collected: Bottles:

1. Clear glass machine-made small flask.
2. Black shoe-polish bottle with brush applicator (3-1/8 oz.).
3. Fingernail-polish bottle.
4. Medicine bottle (4 fl. oz.).

Comments: This structure appears to be a small frame house occupied in the 1930's and possibly built in the first quarter of the 20th Century. The chimney construction is similar to Structure 716A, which was apparently built ca. 1901.

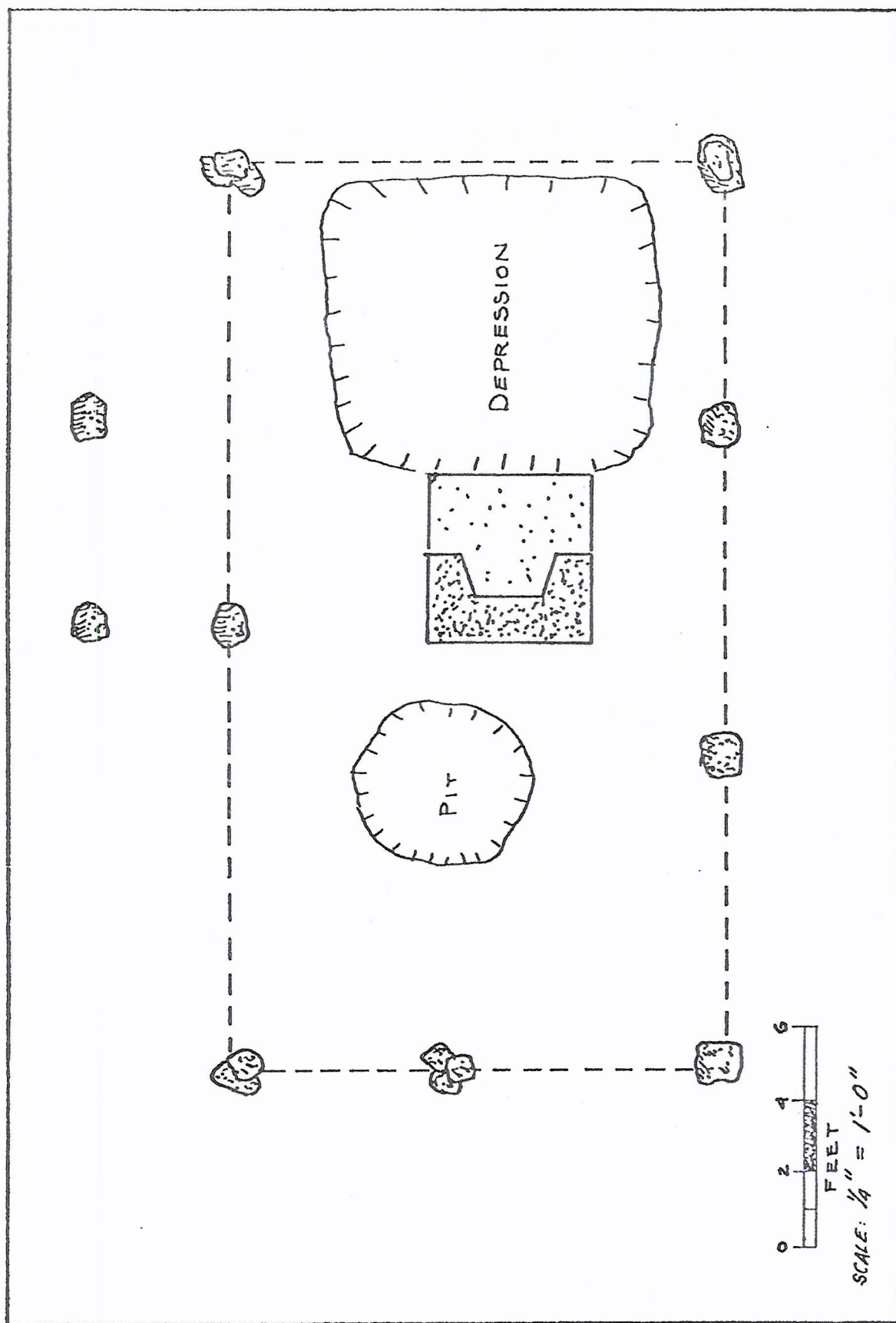


Fig. 12. Plan of Structure 716B.

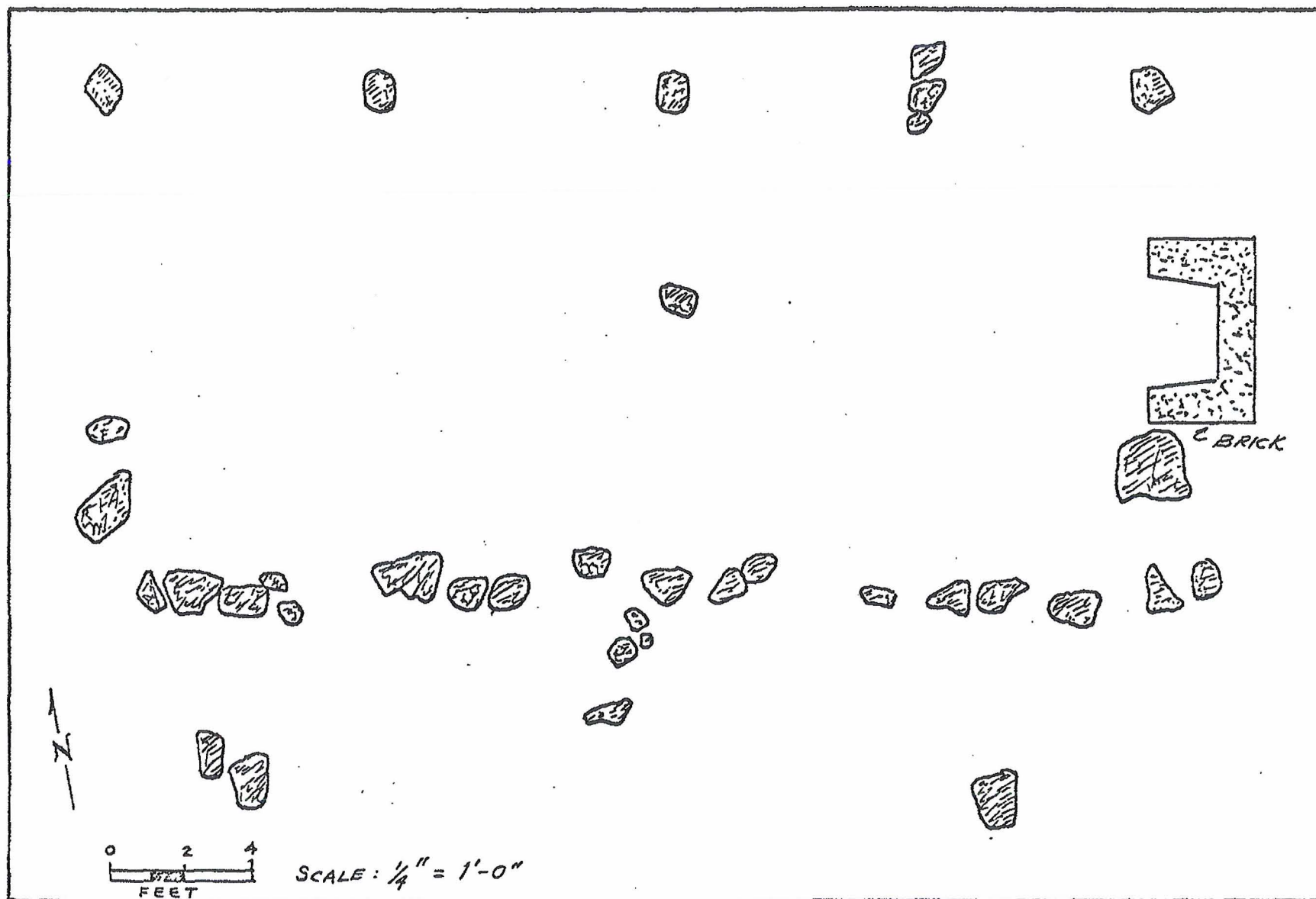


Fig. 14. Plan of Structure 733A.

There is also an enameled iron coffee or tea pot with curved spout, similar to one depicted in the 1895 Montgomery Ward catalog as Item 44671 (Montgomery Ward 1895:429).

Comments: This was apparently a fairly large two-story house located close to the road. The absence of extensive outbuildings, barns, etc., may suggest the house was not part of a small, self-contained farmstead.

### Structure 733B

Location: This structure was located[

Exempted from Disclosure by Statute

<sup>1</sup>(Fig. 10).

Present condition: The construction of the present[  
Exempted from Disclosure by Statute] apparently destroyed part of the foundation; only some of the foundation stone piers remain. The site is covered with heavy honeysuckle and briars.

Building plan: Indeterminate.

Structural details: It was presumably a frame structure on stone piers; no additional information is available at this time.

Materials collected: None.

Comments: This house appears to be an isolated structure not directly associated with a farmstead complex and as such is probably more recent than some of the other structures in the area.

### Tract No. 734

Location: This 70-acre tract was located [ Exempted from Disclosure by Statute  
] The property ran from the road  
north to the crest of [ Exempted from Disclosure by Statute ] (Fig. 9).

Ownership: It was acquired from Roscoe and Ed Roberts by condemnation on 2 February 1943.

### Structure 734A

Location: Shown on the 1941 edition of Bethel Valley quadrangle[ Exempted from Disclosure by Statute ] the

house is situated[

Exempted from Disclosure by Statute

] and access is by a wagon track (Fig. 10).

Present condition: The wall logs are partially standing, and the brick chimney has collapsed into rubble. The site is covered with medium to heavy vegetation.

Building plan: Rectangular with a single chimney/fireplace on the east wall (Fig. 15).

Structural details: (cf. Fig. 15)

Foundation. Limestone piers laid dry.

Construction. This structure was built using hewn poplar logs; the corner notching is of a type termed half dovetail. This type was commonly used in eastern Tennessee.

Chimney and fireplace. Brick chimney on east wall completely collapsed.

Materials collected: A number of glass bottles and jars were collected from the immediate area around the house. These included the following types of fruit jars:

1. Ball *PERFECT MASON*
2. Presto *SUPREME MASON*
3. Atlas *STRONG SHOULDER MASON*

Comments: This structure is in the proposed plant area and will be affected by any construction activities. The log construction used in this building indicates an early date of construction. Further historical research should pin down the construction date. Additional investigations including clearing the house floor, clearing away the brick rubble, and establishing a date of construction may be needed at this site.

### Structure 734B

General description: A small rectangular crib constructed from small partially hewn pine logs with a projecting roof on the front.

Location: This structure is located southwest of the house (Structure 734A) across a poorly drained area.

Building plan: Rectangular, 8'1" x 16'0".

Structural details:

Foundation. Fieldstone piers at each corner (Fig. 16).

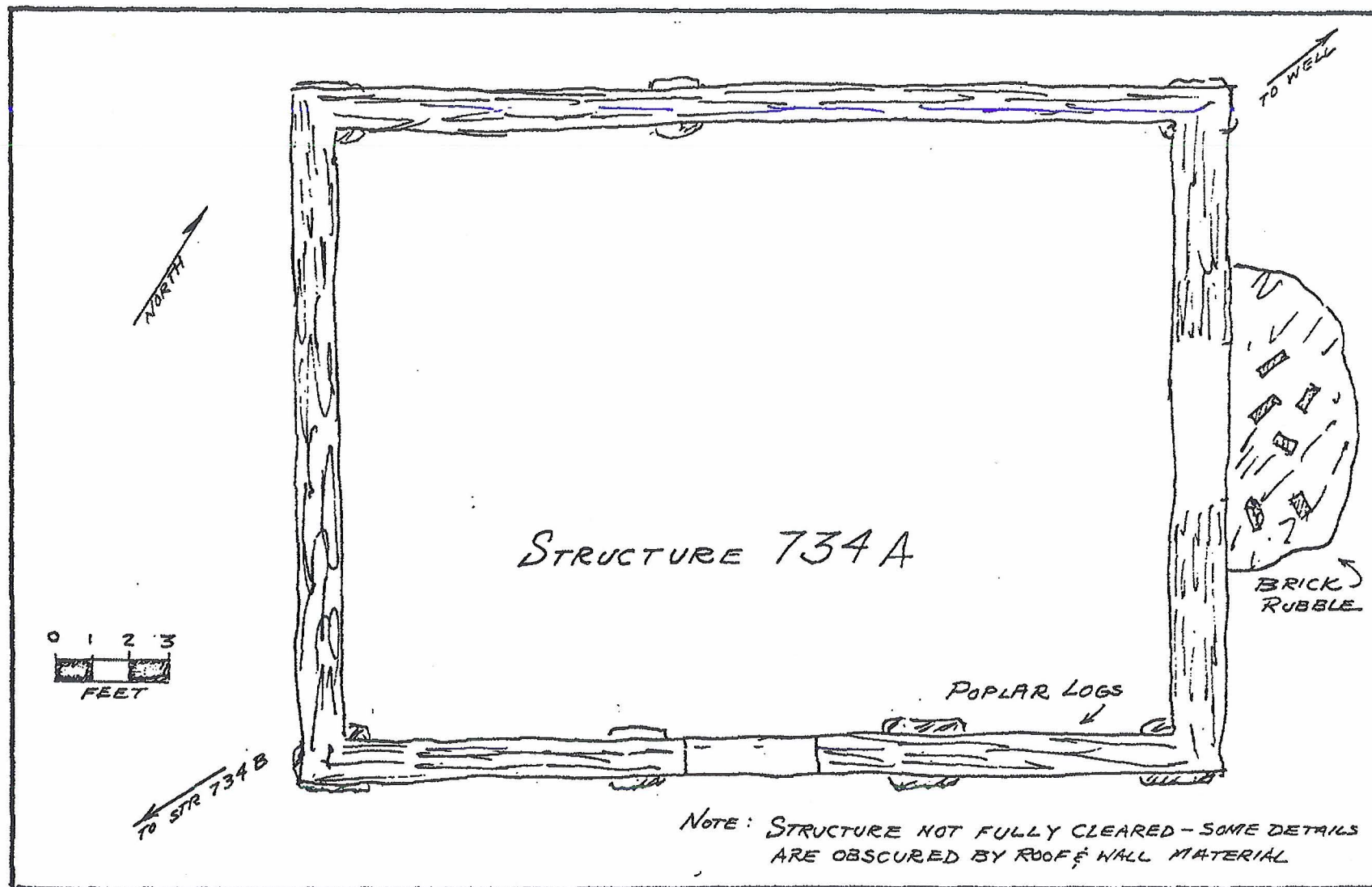


Fig. 15. Plan of Structure 734A.

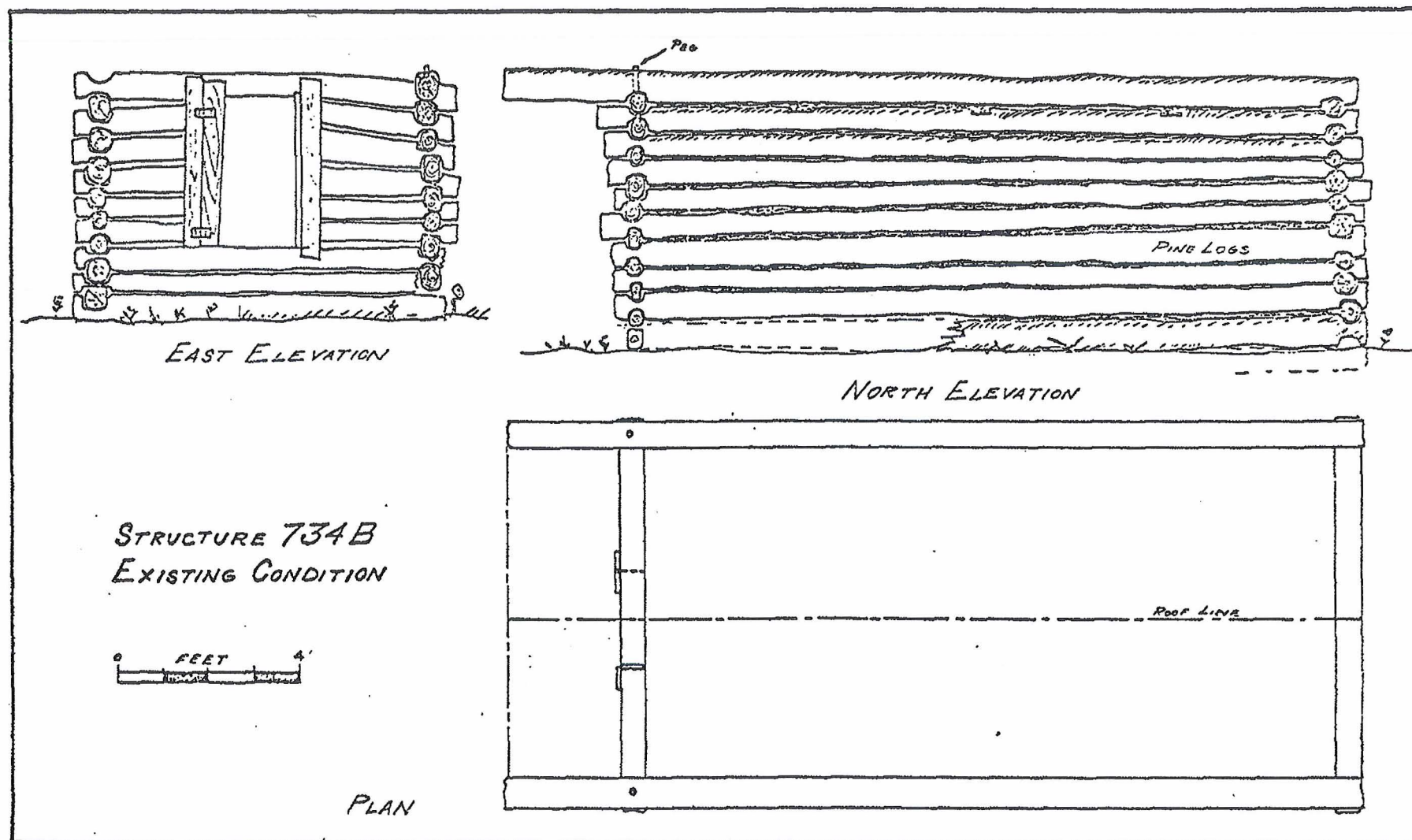


Fig. 16. Plan and Elevations of Structure 734B.

Construction. Horizontal log, saddle notched at the corners. Logs are hewn on the interior and exterior faces, but not peeled.

Roof. The rafters are 4-inch-diameter peeled pine poles fastened at the apex with wire nails. The purlins are sawn boards (1" x 2" nom.) nailed on irregularly spaced centers (7" to 10½"). The roof covering is hand-split oak shakes. The shakes measure 7 inches wide, 12 inches long, and about ¼ inch thick and were laid about 5 inches to the weather. Wire nails were used in nailing the shakes.

Walls. The side walls are ten logs high with the wall plate log 3 feet (1 meter) longer than the other wall logs. This extension provides for a projecting roof over the door (Fig. 16). The log immediately under the wall plate is notched at three places apparently to take loft joists. The plate log is pinned to the next two lower logs with a 1-inch-diameter hardwood peg (Fig. 16). The rear wall is also ten logs high; the gabled end above the logs is covered with vertical boards.

Door. The crib has one door on the east end framed with sawn boards. The opening is 3'0" high, 2'2" wide, and 1'9" above the ground surface (Fig. 16). The door is board and batten rough oak and attached with commercial iron hinges.

Comments: This style of outbuilding was very common in eastern Tennessee. It is found both in frame and log construction forms. Although the style has considerable antiquity (Glassie 1964), this particular crib does not appear very old; it was probably built in the 1930's. One result of the Great Depression in rural Tennessee was a return to log construction as an economic necessity.

Recommendations: No additional work is needed at this structure. Its recent age and construction materials do not warrant relocation or salvage.

Tract No. 737

Location: [

Exempted from Disclosure by Statute

]Fig. 9).

Ownership: It was acquired by condemnation from J. K. Rather on 18 March 1943 (U.S. War Department 1943-45:24).

#### Structure 737A

General description: A small frame house.

Location: This house was situated at the northwest corner of [

Exempted from Disclosure by Statute

] (Fig. 10).

Present condition: All that remains of this structure is a few foundation stones and assorted debris. The house site area is being cleared of beetle-infested pines.

Building plan: All of the foundation stones were not located; but from those that were, the plan appears square, 7.9 meters (26 feet) on a side. No chimney foundation is evident, although a few scattered bricks were noted. These were probably from a heating or cookstove chimney.

Structural details:

Foundation. Stone piers placed on approximate 1.5-3 meter (5-10 foot) centers.

Construction. Presumed frame construction.

Materials collected: There was an abundant amount of general trash on the surface around this house. Bottles collected include two catsup bottles, three brown glass beer bottles, rubbing alcohol bottle, and a Phillips Milk of Magnesia bottle. Also a pressed-glass, oval-shaped bowl was collected. None of these artifacts suggests an occupation much before the late 1930's.

Comments: The house was probably frame with a "tin" roof, built in the 1930's.

Recommendation: No additional research is needed; no salvage procedures are warranted.

Tract No. 742

Location: This 118-acre tract was located on the south side of [

Exempted from Disclosure by Statute

] (Fig. 9).

Ownership: C. W. and Sadie Gallaher; acquired by condemnation on 2 February 1943 (U.S. War Department 1943-45).

Structure 742A

Location: Situated [

Exempted from Disclosure by Statute

] (Fig. 10).

Present condition: The foundation, cellar depression, and cistern are covered with moderate vegetation.

Building plan: Rectangular with the long axis oriented perpendicular to the road.

Structural details: (cf. Fig. 17)

Foundation. Mortared brick, with corners expanded to form pillars. South corner has an interior single-course brick interior foundation line that enclosed a possible cistern.

Construction. Presumed frame.

Cellar. A cellar, 9'1" x 12'5" (2.8-3.8 meters) and about 6 feet (1.8 meters) deep lined with limestone block was located under the front part of the house.

Materials collected: One brick (3-3/4 x 2-3/4 x 8-1/8 inches).

Recommendations: No additional research is warranted at this site due to the absence of any extensive structural information.

#### Tract No. 743

Location: This 64-acre tract was located on the south side of [ Exempted from Disclosure by Statute ] (Fig. 9).

Ownership: The property was acquired from Dunkin Rather by condemnation on 18 March 1943 (U.S. War Department 1943-45).

#### Structure 743A

Location: Shown on the 1941 edition of Bethel Valley quadrangle [ Exempted from Disclosure by Statute

](Fig. 10).

Present condition: Site is covered with vegetation; no physical remains of the structure were located.

Recommendation: No additional work is required.

#### Tract No. 754

Location: A 68-acre tract, this property was located [ Exempted from Disclosure by Statute

] Part of this property was acquired by the Tennessee Valley Authority for Watts Bar Reservoir in 1940 (U.S.-TVA 1940) (Fig. 9).

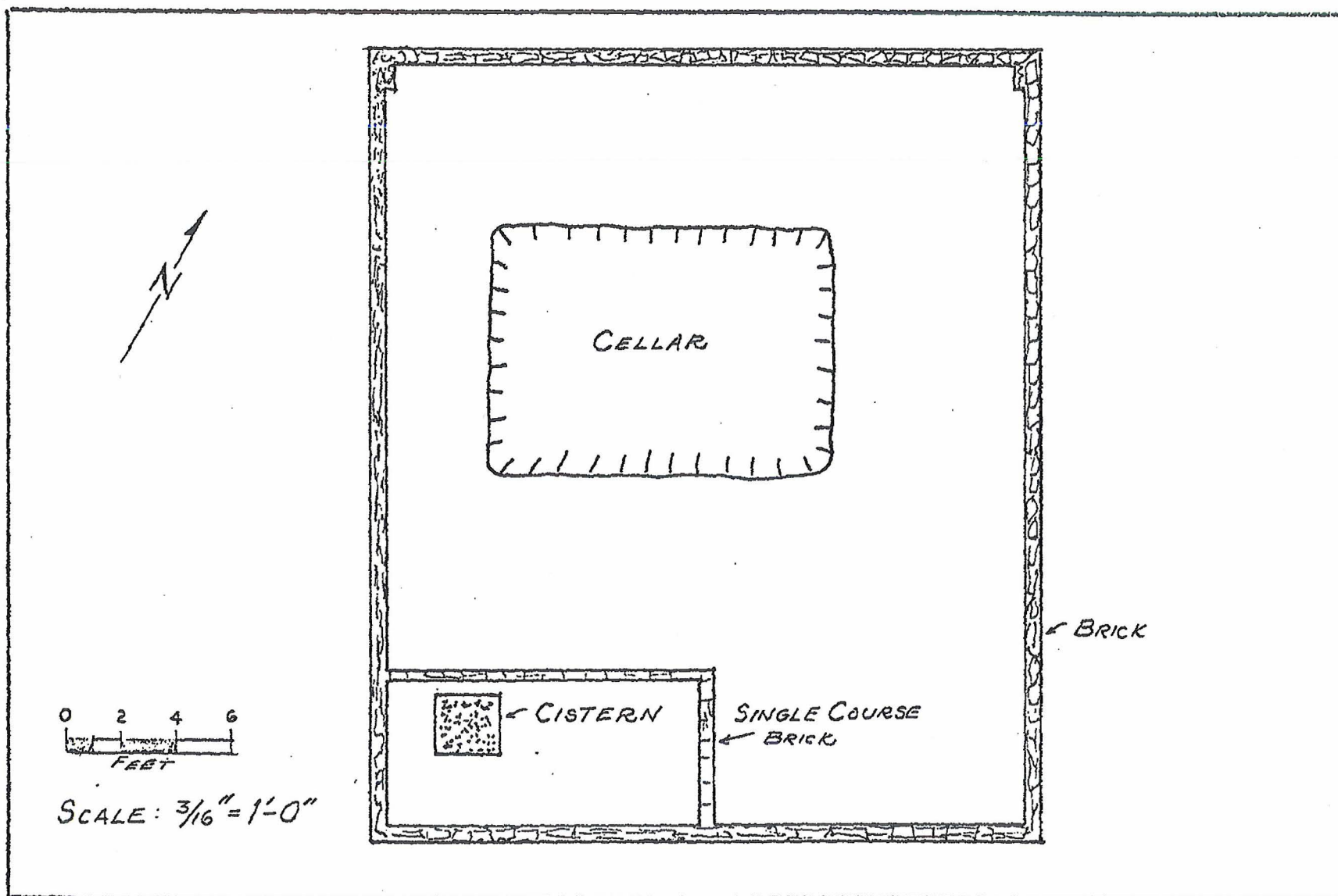


Fig. 17. Plan of Structure 742A.

**Ownership:** This tract was acquired from W. Thurman and C. T. Smith by condemnation on 3 March 1943 (U.S. War Department 1943-45). Another documentary source makes reference to the residence of a Carl Smith at this location in 1935 (U.S.-TVA 1948:21).

**Comments:** This tract is located in the possible impact area of the proposed Clinch River Breeder Reactor Project (CRBRP) and as such has been briefly described by Gerald F. Schroedl in his studies (cf. Schroedl 1972:12, 1974b:6). The additional work done in this survey consisted of preparing measured drawings of the house and root cellar plans.

#### Structure 754A

**Location:** This house, located

Exempted from Disclosure by Statute

on the Elverton quadrangle (1941 edition) (Fig. 10).

**Present condition:** The foundations, chimney fall, and a few structural timbers remain, although covered with light to heavy vegetation. A considerable amount of assorted debris such as cans, bottles, and trash is strewn about the site.

**Previous investigations:** The site was inspected by Schroedl (1974b:6), and brief comments on current condition were made. The structure is described as a two-story frame dwelling by Schroedl based on the TVA land acquisition records (U.S.-TVA 1940).

**Current investigations:** Measured drawings of the foundations and extant log sections.

**Building plan:** The structure was a two-pen saddlebag-type rectangular house with a central brick chimney. Later additions include a porch with a concrete foundation and a frame (?) addition on the rear (Fig. 18). The original structure may have been a single-pen log house with fireplace and chimney which was incorporated into the saddlebag type by the addition of the southern pen, as suggested by Schroedl (1974b:6).

**Structural details:** (cf. Fig. 18)

Foundation. The double-pen part of the structure had a continuous limestone block foundation under the northern pen and a partial stone foundation under the southern pen. A front porch on the west side of the house had a poured concrete foundation. The rear addition was supported on fieldstone piers.

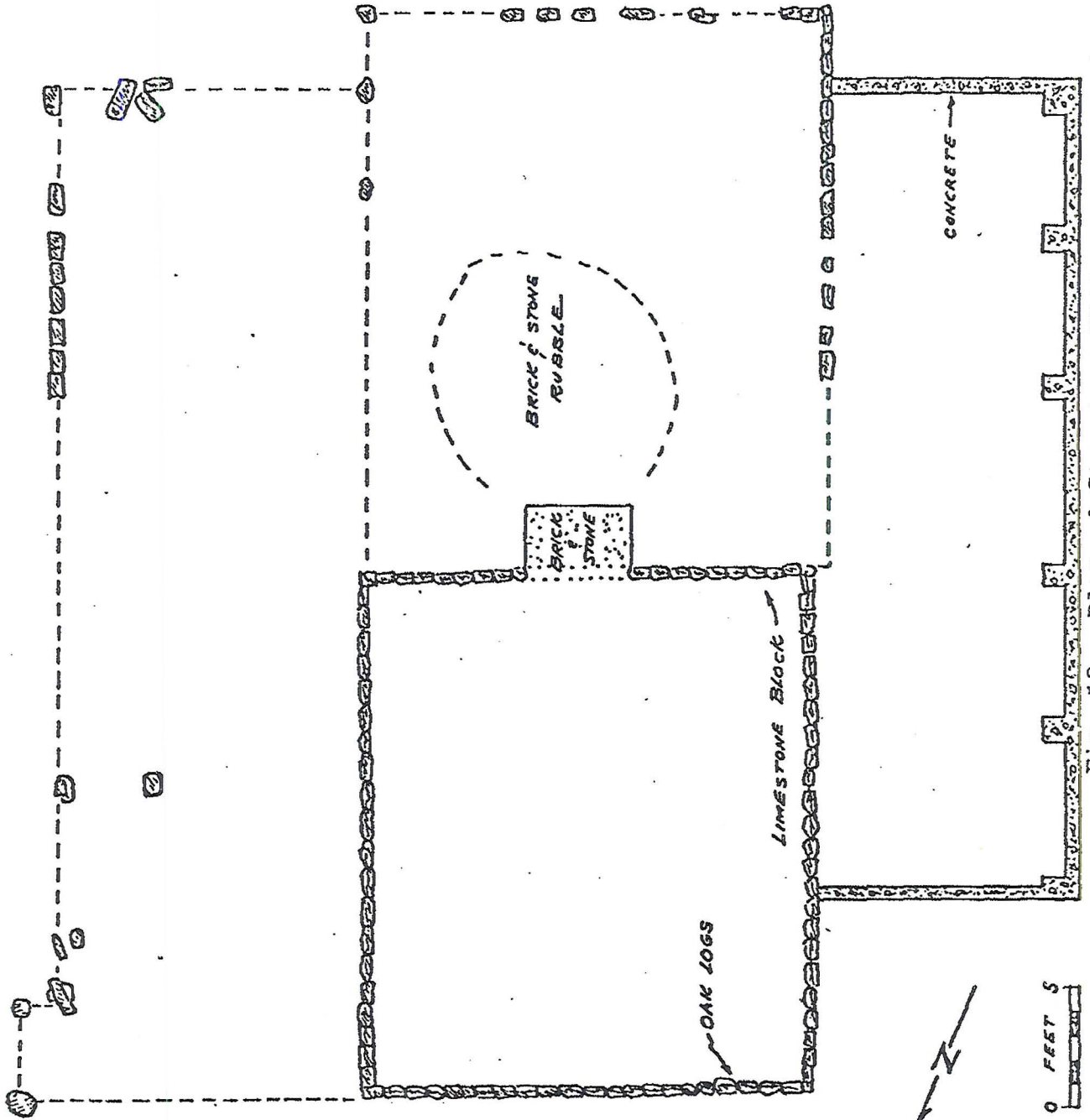


Fig. 18. Plan of Structure 754A.

Construction. The original construction was horizontal hewn log with the corners joined using the V-notch technique (Fig. 18 detail). Schroedl (1974b:6) incorrectly called this notching "half-dovetail," a distinctly different technique (cf. Glassie 1963:9). The northern pen has existing portions of the log walls; these logs are oak, hewn on the interior and exterior surfaces. Although the 1940 land acquisition records list this structure as a two-story frame house (U.S.-TVA 1940; Schroedl 1974b:6), it is probable that the building was covered with weatherboarding; and the appraiser assumed it was entirely of frame construction. The frame parts of the structure have been razed.

Chimney and fireplace. A chimney foundation is located on the south end of the northern pen of the double-pen section. It has collapsed into a pile of brick rubble; no dimensions of the fireplace are extant. There is a pile of brick and stone rubble to the south of the chimney foundation that could represent either chimney fall or the location of a second chimney and fireplace associated with the southern pen.

Porch. The west side of the house has a poured concrete foundation presumed to be from a porch. It measures 10'6" x 33'9" (3.2-10.3 meters) with integral pillars for possible joist supports on 7'9" (2.36 meter) centers. It is approximately centered between the double-pen configuration indicating that when the porch was constructed, both pens were intact.

Doors. The northern pen had an exterior door located in the center of the east wall. Other doors are not definitely indicated, but there was probably one opposite the east wall door.

Materials collected: None.

Comments: The differences between the current evaluation of this structure and that reported by Schroedl (1974b:6) result from a different level of examination. The previous study was undertaken as primarily an assessment of pre-historic cultural resources; their investigation of the historic remains was mainly a verification of the presence of structures recorded in 1940. The main differences in interpretation between the two studies are:

1. The log remains are part of a log house rather than a log outbuilding.
2. The structure is probably considerably older than the 1920-30 vintage ascribed due to the concrete porch foundation. The porch and other additions may have been added in the 1920's, but the original log house could date to the mid to late 1800's.

Further historical research could provide data on the log house construction date.

3. The notching technique used is the V-notch type, rather than "half-dovetail."

**Recommendations:** Unless historical research establishes an early date for the construction of the log portion of this structure, no additional work is required. The existing oak logs should be appraised as to their possible value for use in other historic structure restoration.

### Structure 754B

**General description:** Outbuilding with stone-lined cellar.

**Location:** Ninety feet (27.7 meters) north of the house (Structure 754A).

**Present condition:** An alignment of stones representing the foundation of a frame structure over the stone-lined cellar is all that remain of this outbuilding.

**Previous investigation:** The cellar is shown in Schroedl's report (1974b:Fig. 3). The 1940 U.S.-TVA land acquisition map lists the structure as a smokehouse.

**Current research:** The limestone cellar was photographed and the building plan drawn.

**Building plan:** The cellar hole plan measures 4'2" x 8'7" (1.27 x 2.62 meters) (inside dimensions); the frame structure over the cellar hole was 10'5" x 13'2" (3.17 x 4.1 meters), as determined from the foundation stones (Fig. 19).

#### **Structural details:**

Foundation. Natural limestone fieldstone piers and individual stones under the sills.

Construction. The cellar is lined with limestone rock laid dry in random sizes and with no apparent pattern. The building over the cellar was apparently frame; no structural evidence is present other than the foundation. The cellar opening is on the downhill side of the structure.

#### **Material collected:**

1. Milk bottle, clear or flint glass, marked with embossed letters--AVONDALE/FARMS CREAMERY INC./KNOXVILLE.

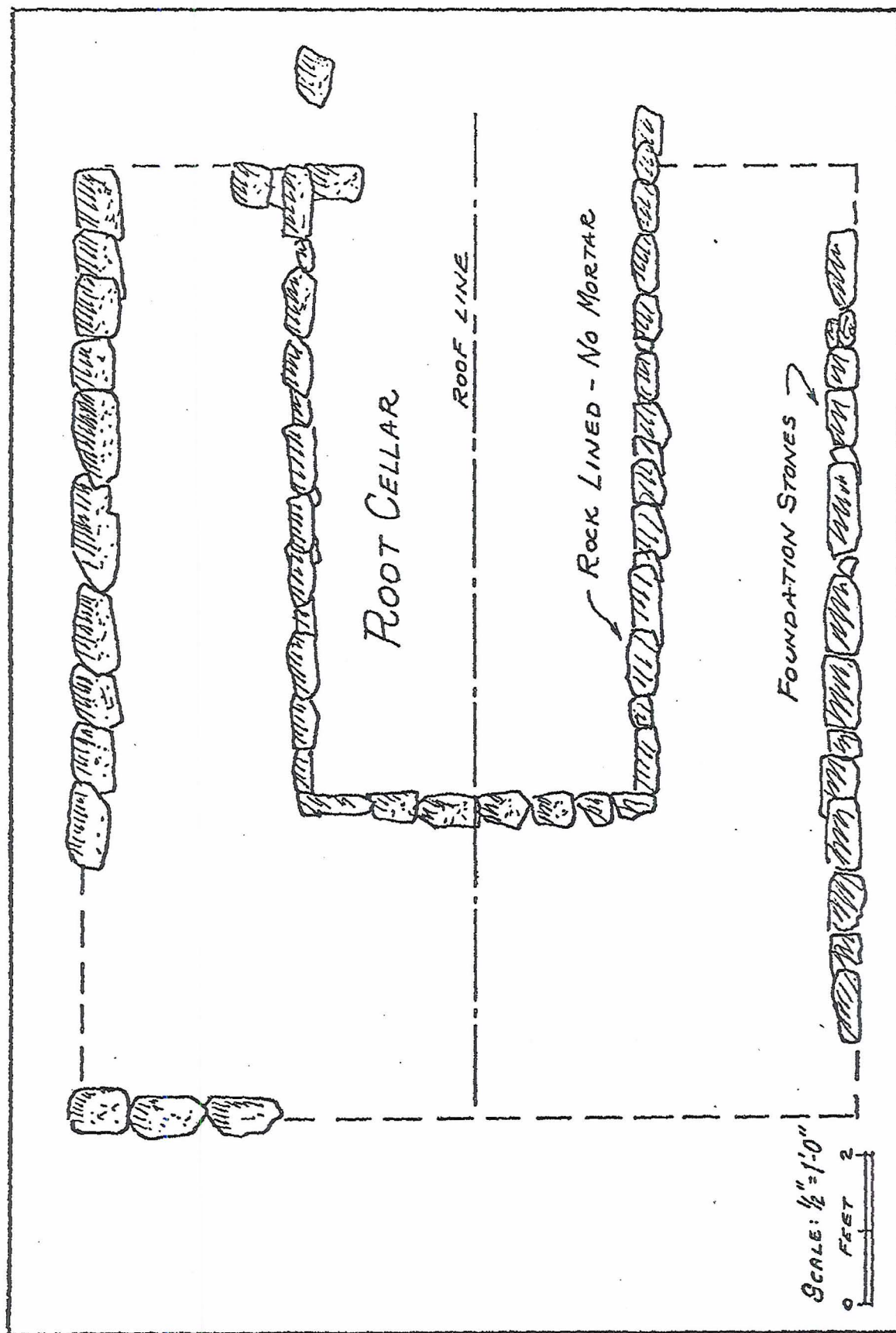


Fig. 19. Plan of Structure 754B.

2. Small pot, salt-glazed stoneware, appears to be of local manufacture, unmarked. Dimensions: maximum diameter at rim 8.5 inches (22.0 centimeters), height 6.5 inches (16.5 centimeters), base diameter 5.5 inches (14 centimeters), wall thickness about 0.5 inch. Profile: slightly curved to straight taper to a flat base.

Comments: The limestone-lined cellar was probably a root cellar with a frame structure serving as additional storage and possibly a place to hang curing meat. This latter function would account for its being listed as a "smokehouse" in 1940 (U.S.-TVA 1940). Many structures in eastern Tennessee are referred to as "smokehouses" even though meat is salt cured and hung in them.

Recommendation: No additional work is needed.

#### Tract No. 824

Location: This 48.5-acre tract was situated[

Exempted from Disclosure by Statute

](Fig. 9).

Ownership: It was acquired from the heirs of J. F. Magill by condemnation on 30 March 1943 (U.S. War Department 1943-45).

#### Structure 824A

General description: A large single-pen, 1½- or 2-story log house with a single fireplace at the east gable end.

Location: This house,[

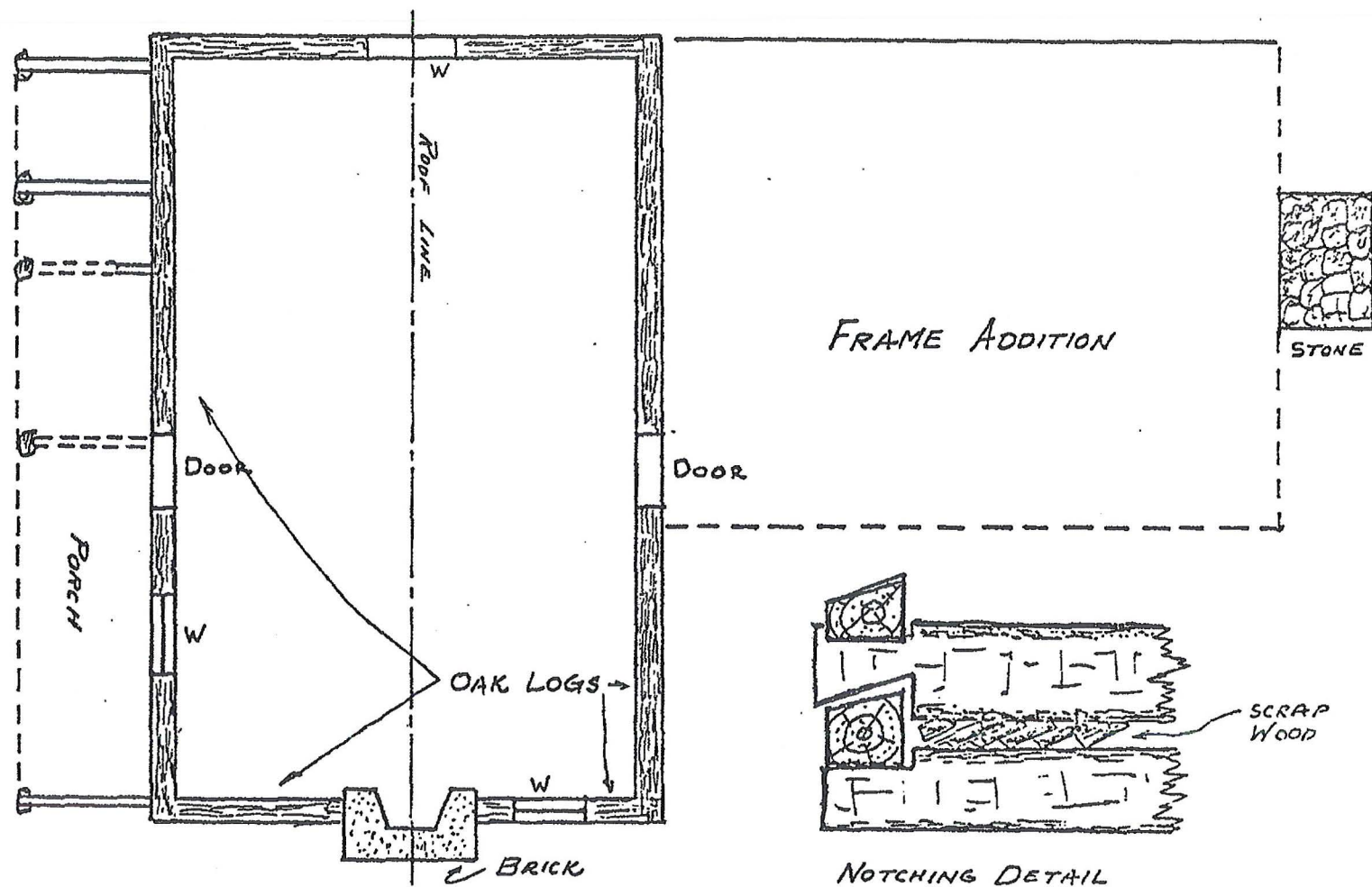
Exempted from Disclosure by Statute

](Fig. 10).

Present condition: Portions of four exterior walls of the main house are standing, the chimney has collapsed, and none of the roof remains. Frame portions of the house have been razed and presumably salvaged.

Current investigations: Measured drawings, detail structural drawings, and photographs were made. Architectural and artifactual materials were collected.

Building plan: The basic design is a single rectangular pen made with horizontal hewn logs oriented parallel to the road. A frame ell was built on the north side (Fig. 20).



SCALE:  $\frac{3}{16}" = 1'-0"$

Fig. 20, Plan of Structure 834A with Details.

There is one chimney and fireplace on the east end of the house and a chimney (fireplace?) on the north end of the ell.

Structural details: (cf. Fig. 20)

Foundation. Limestone piers.

Construction. The main house is of horizontal log construction using hand-hewn oak and pine logs. The ell was probably built with sawmill lumber using "balloon frame" construction.

Walls. Wall logs are hewn on the interior and exterior faces only; the top and bottom surfaces are not peeled. The corners are joined using the half-dovetail technique. The interstices between logs (2½-inch typ.) are filled with miscellaneous pieces of wood wedged into the space and plastered over with clay (Fig. 20). The exterior walls were covered with sawn weatherboards (5-¾ x ¾ inch typical) laid 4½ inches to the weather; these are nailed to 1 x 6 vertical battens on approximate 3'3" centers (measured on the west elevation) with round wire nails. Wall logs range in width from 9 to 13 inches and are about 6½ inches thick. Interior wall arrangement is indeterminate.

Roof. Although the roof has been removed, there is some evidence of the construction. One part of a rafter (2 x 3-5/8 inches) is notched to receive the wall plate corner. Wire nails in the rafter on 5-7 inch centers indicate purlin spacing. No roofing material was present, but the house probably had split-oak shakes or shingles originally. The roof is apparently a gable form with a pitch of 12:8, based on one board from the apex of the gable end. Rafter measurements indicate the eaves extended about one foot.

Exterior doors. Exterior doors are located on the south and north walls. The south door is board and batten with irregular-sized boards (5-1/4-12 x ¾ inches) hung with commercial iron hinges. Wire nails were used in the door, indicating that this item is not original. This door is 5'10" high and 27½" wide.

Windows. There are three window openings still discernible; the east and south windows contained double-hung windows with four panes in each half. The sashes are fastened with wooden pegs; the muntins are tenoned. The external sash measurements are 27½ x 24½ inches with four 10 x 12 inch panes. Both of these windows had board and batten shutters. The west window opening is 2'5" x 2'6"; no framing is apparent.

Chimney and fireplace. A brick fireplace is located on the east end of the house; from wall log measurements, it was 4'6" wide and approximately 4 feet high (external dimensions). A second chimney foundation

is located at the north end of the ell. This chimney has a limestone block foundation. A typical fireplace brick measures 2-7/8 x 4 x 8-3/8 inches.

Floors. There are no indications of first floor joists or flooring. One of the north wall logs is notched with 2½-inch-wide notches on 2-foot centers, possibly for second-story floor joists. No flooring from a second-story floor was noted.

Porch. A 5-foot-wide porch running the length of the house was located on the south side. Sawn 4 x 4 beams were used for porch joists placed on 4-foot centers and tied into the sill with a half-lap joint to the top of the sill. Secondary 2 x 4 joists on 4-foot centers between the other joists were supported by stone piers.

Comments: This structure is probably one of the earliest ones in the study area based on the presence of horizontal log construction. In lieu of additional historical data, the estimated date of construction is the last half of the 19th Century. The construction technique and floor plan are very common in eastern Tennessee.

Recommendations: The date of construction should be established through historical documentation. Since the structure will very likely be affected by construction activities, the usable logs and other items should be salvaged for use in other possible historic reconstruction projects.

#### Tract No. 825

Location: This 132-acre tract included portions of the north  
[Exempted from Disclosure by Statute]  
] It was adjacent to Tracts 824  
and 827 also owned by Magills (Fig. 9).

Ownership: This tract was acquired by condemnation from Ben H. Magill on 30 March 1943 (U.S. War Department 1943-45).

#### Structure 825A

General description: A rectangular frame house.

Location: Located [ Exempted from Disclosure by Statute ] (Fig. 10).

Present condition: The remaining foundation stones, brick rubble, and portions of the sills are covered with light vegetation.

Current investigations: The foundation stones were mapped and construction details noted.

Building plan: Rectangular (22'10" x 30' [6.95 x 9.1 meters]), oriented parallel to the road with a central brick chimney (Fig. 21). No fireplace could be discerned.

**Structural details:**

Foundation. Fieldstone piers placed on irregularly spaced centers.

Construction. The structure was built using oak sills (6 x 6 inches) and is assumed to be frame.

Chimney and fireplace. There is a pile of brick rubble in the center of the structure indicating the presence of a chimney. No evidence of a chimney foundation or fireplace is present. The house was probably heated with a coal or wood stove, and the brick are from that chimney. A typical brick measures 2-1/2 x 4-1/8 x 8-1/2 inches.

Comments: It was probably a very common type of house built in the 1920's or 1930's.

Recommendations: No additional work is needed.

**Structure 825B**

General description: Outbuilding, hewn log; undetermined function or use.

Location: The farmstead with which this structure was associated was located

Exempted from Disclosure by Statute

] on the 1941 Bethel Valley quadrangle  
(Fig. 10).

Present condition: Although the four walls are partially standing, several logs have been removed from each wall causing some distortion of the structure.

Current investigation: Measured drawings of the plan and walls were made.

Building plan: Square (9'10" x 10'1 1/2" [3.0 x 3.08 meters]).

**Structural details: (Fig. 22)**

Foundation. Individual fieldstones at each corner.

Construction. Horizontal hewn log with half-dovetail corner notches. Oak and pine logs were used; oak was selected for the lower sections of the wall, especially sill and first logs. The logs range in width

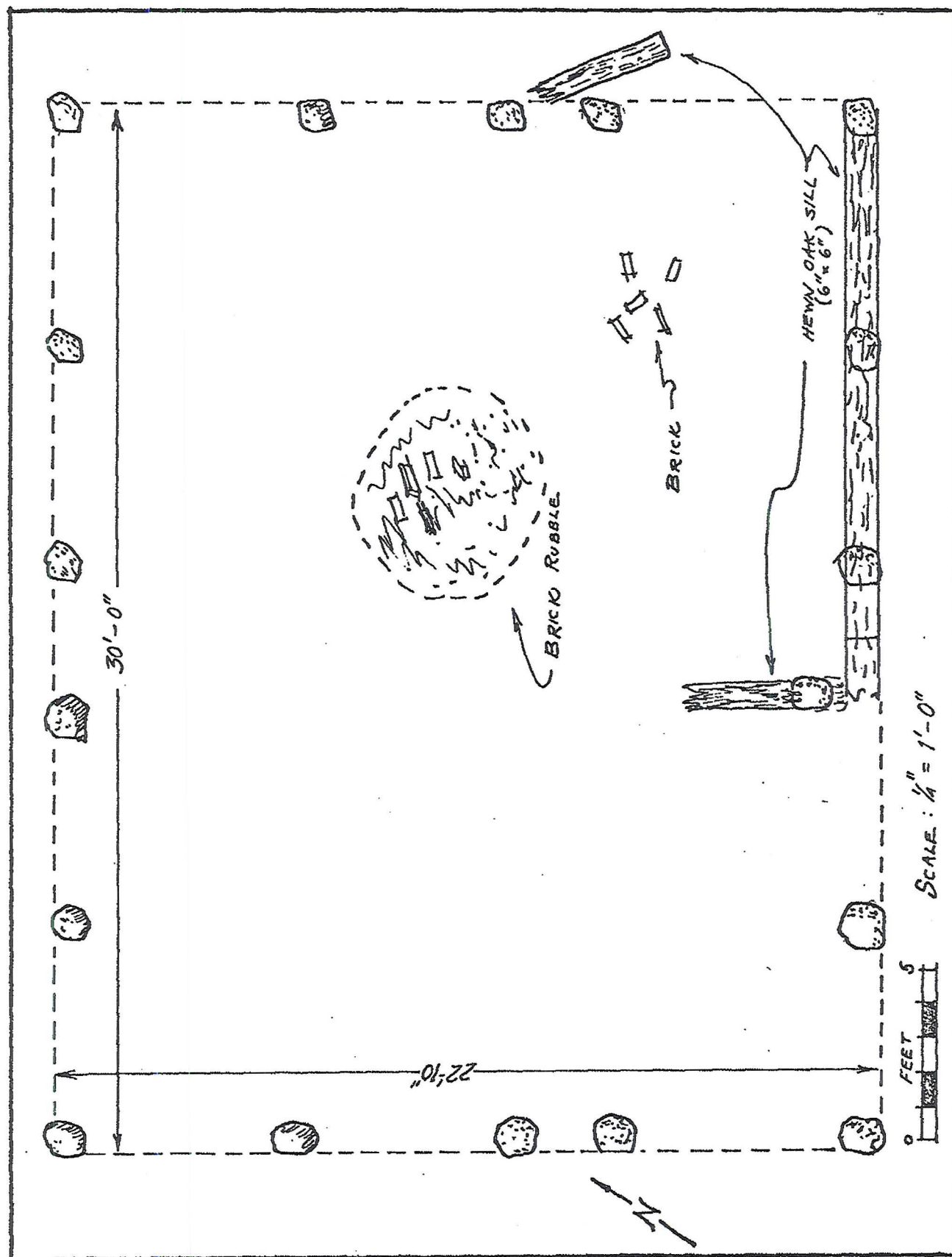
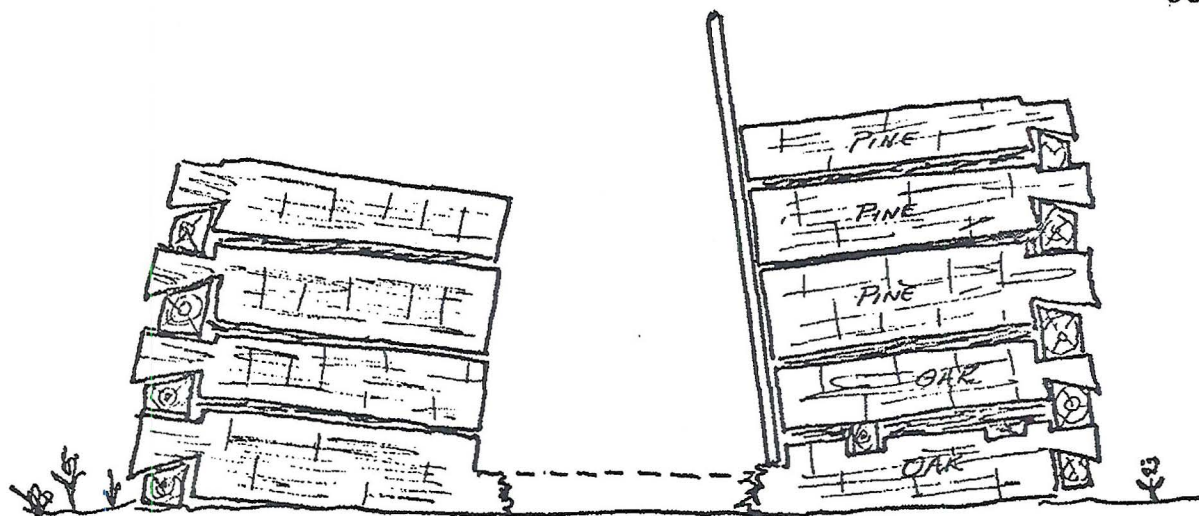
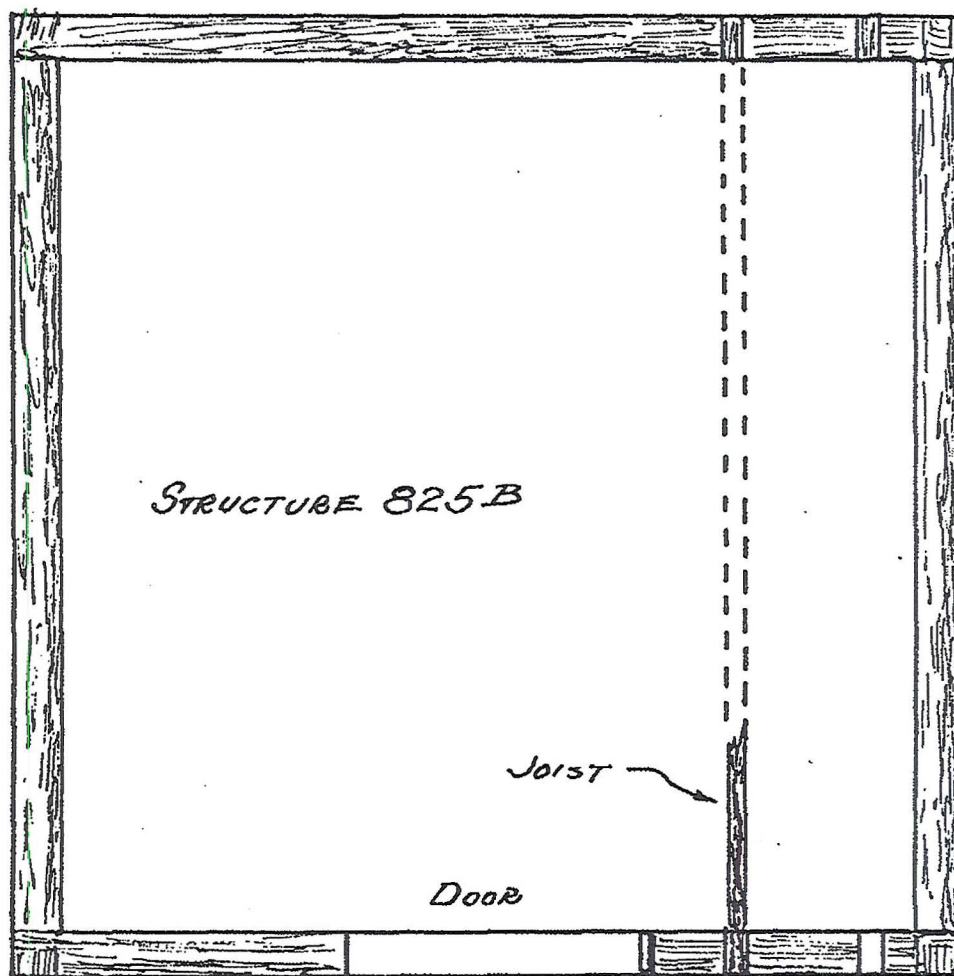


Fig. 21. Plan of Structure 825A.



*SOUTH ELEVATION*



SCALE:  $\frac{1}{2}$ " = 1'-0"



Fig. 22. Plan and South Elevation of Structure 825B.

from 8½ to 12 inches (21 to 30 centimeters), in thickness from 4½ to 5½ inches (11.4 to 14 centimeters).

Doors. A single door is located in the center of the front wall. The door opening measures 3 feet (0.9 meters) wide and was at least 4'8" (1.4 meters) high, based on a remaining part of a jamb. The original jambs were pegged to the end logs in the door opening.

Windows. None discernible.

Miscellaneous. Two joists (1½ x 3 inches) are tied into the first log in the front and back walls. No other joists are present, nor are the logs notched to receive joists. Possibly the two joists served to hold a trough or similar feature.

Comments: This structure may have been used as a "smoke-house," i.e., for curing and storing meat, if there was a trough present. This type of structure was very common on farmsteads from the early 1800's to the 1900's. Many farms still use them for curing meat and storing equipment.

Recommendations: The structure should be preserved and incorporated into the chosen plan for historic preservation of the plant site structures.

### Structure 825C

General description: Small square outbuilding made from hewn logs. Use or function undetermined.

Location: Same farmstead as Structures 825B and 825D.

Present condition: The structure is essentially intact except for the roof. There has been slight lateral displacement from the foundation stones.

Current investigations: Measured drawings and photographs of the existing structure.

Building plan: Square, 10'2" x 10'2" (3.1 x 3.1 meters).

Structural details: (cf. Fig. 23)

Foundation. Individual fieldstones at each corner.

Construction. Horizontal hewn-log construction; corners joined using half-dovetail method. The bottom log on the front is two pieces joined with a lap joint. Most of the logs are oak with some pine.

Door. A single door is located on the front wall offset to the left side. The door (now missing) was hung without the use of metal hinges; at the top and bottom of the door opening two semicircular pieces of wood with vertical axis holes were nailed to

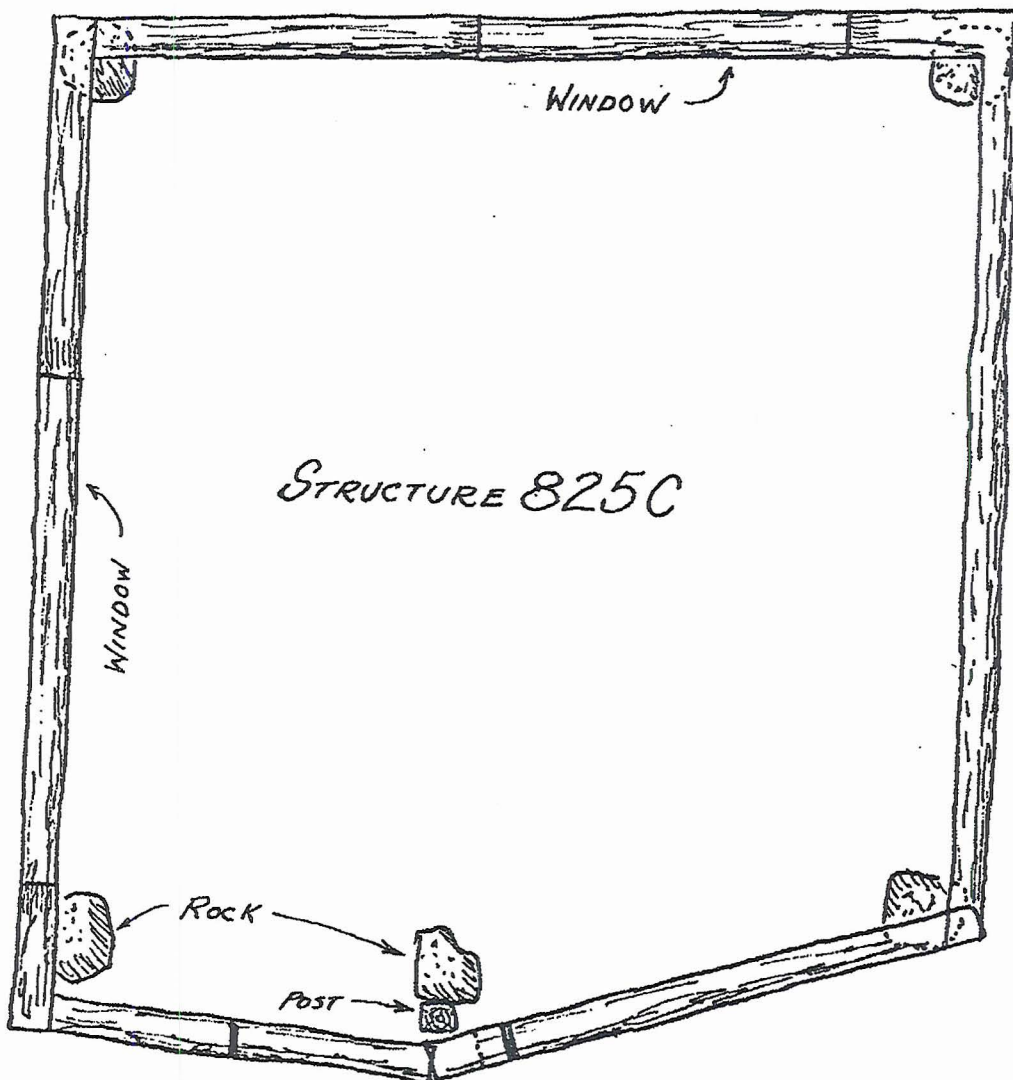
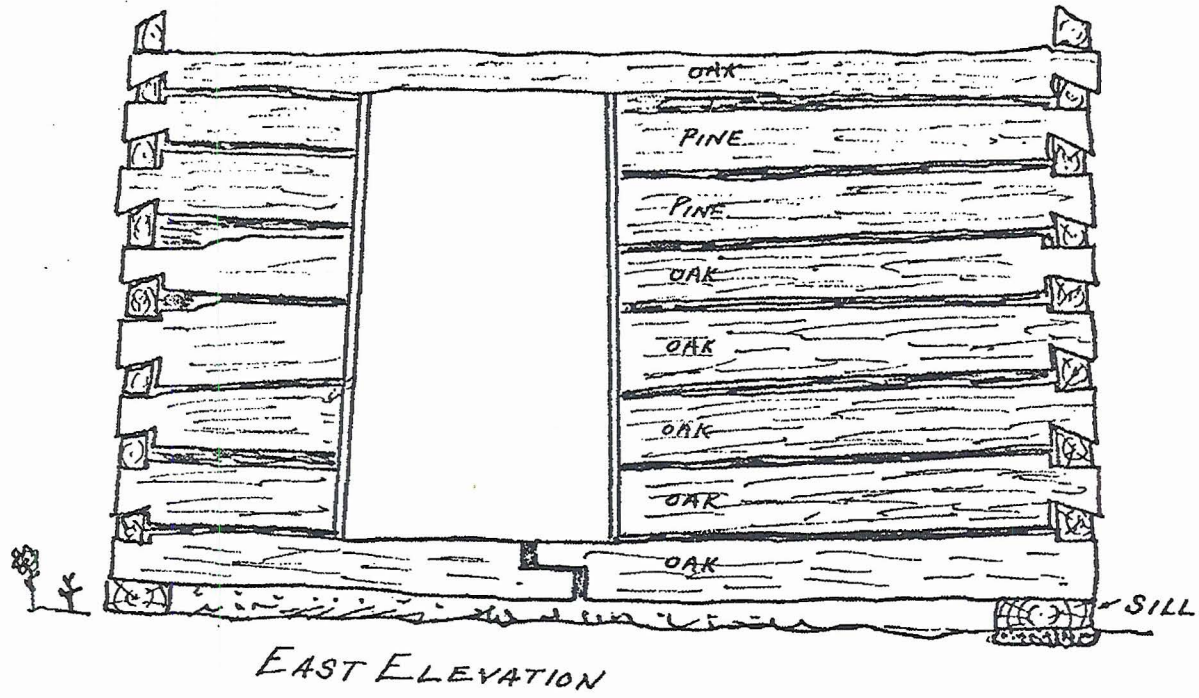


Fig. 23. Plan and East Elevation of Structure 825C.

the wall logs. The door had two corresponding pins or pintles that rotated in the holes, thus allowing the door to swing resting on the lower support. Structure 827A also has a door hung in this manner. The door was fastened with an oak peg which fitted into a hole drilled in the jamb. The door opening is 2'10" (0.86 meter) wide, 4'7" (1.4 meters) high, and the top of the first log constitutes the door-sill.

Windows. There is a 5'1"-wide window on the south wall, and a 4'1"-wide one on the west wall which appears to have been cut out using a chain saw.

Roof. No roofing material is present; it probably had a split-oak shake roof originally, based on similar structures.

Material collected: None.

Comments: Although this type of outbuilding occurs in eastern Tennessee, rectangular-plan structures appear to be more frequent than the square ones.

Recommendations: This structure should be preserved.

#### Structure 825D

General description: Large house?

Location: Part of farmstead described in Structures 825B and 825C.

Comments: Part of the stone foundation and possibly part of a chimney foundation remain of this house. No other structural remains were noted.

Recommendations: No further work required.

#### Tract No. 826

Location: This small, narrow, 12-acre tract was located on  
on [

Exempted from Disclosure by Statute

(Fig. 9).

Ownership: This property was acquired by condemnation from Clifton and Flossie Grub on 24 March 1943 (U.S. War Department 1943-45).

Structure 826A

General description: Frame house.

Location: This house is shown[  
Exempted from Disclosure by Statute

](Fig. 10).

Present condition: Only the foundation stones, brick rubble, and a filled cistern remain at the site.

Current investigations: Mapped foundation stones.

Building plan: Square, 24'6" x 24'10" (7.4 x 7.5 meters). There is a possibility of an addition on the east side that would add another 24 feet, thus making the house rectangular 24 x 48 feet. However, the original portion of the house appears to have been square (Fig. 24).

Structural details: (cf. Fig. 24)

Foundation. Stone piers laid dry on the front; continuous limestone and shale rock foundation laid dry on the west side and rear. The exterior surface is plastered with cement. The front stone piers are about 1'4" high, placed on 6 ± foot centers.

Construction. Assumed to be frame; all structural members have been razed and salvaged.

Cistern. At the corner of the foundation is a concrete-lined cistern (?) (3'5" diameter) filled with soil and rubble.

Chimney and fireplace. There is brick rubble in the center of the structure, but no evidence of a fireplace. The rubble is presumably from chimney fall.

Material collected: None.

Comments: There is insufficient evidence to make definitive comments on this structure. It does not appear to be very old, i.e., probably built in the 1920's to 1930's.

Recommendations: No additional work is required.

Tract No. 827

Location: This irregularly shaped 116-acre tract included property on both[  
Exempted from Disclosure by Statute

](Fig. 9).

Ownership: It was acquired from C. R. Magill by condemnation on 24 March 1943 (U.S. War Department 1943-45).

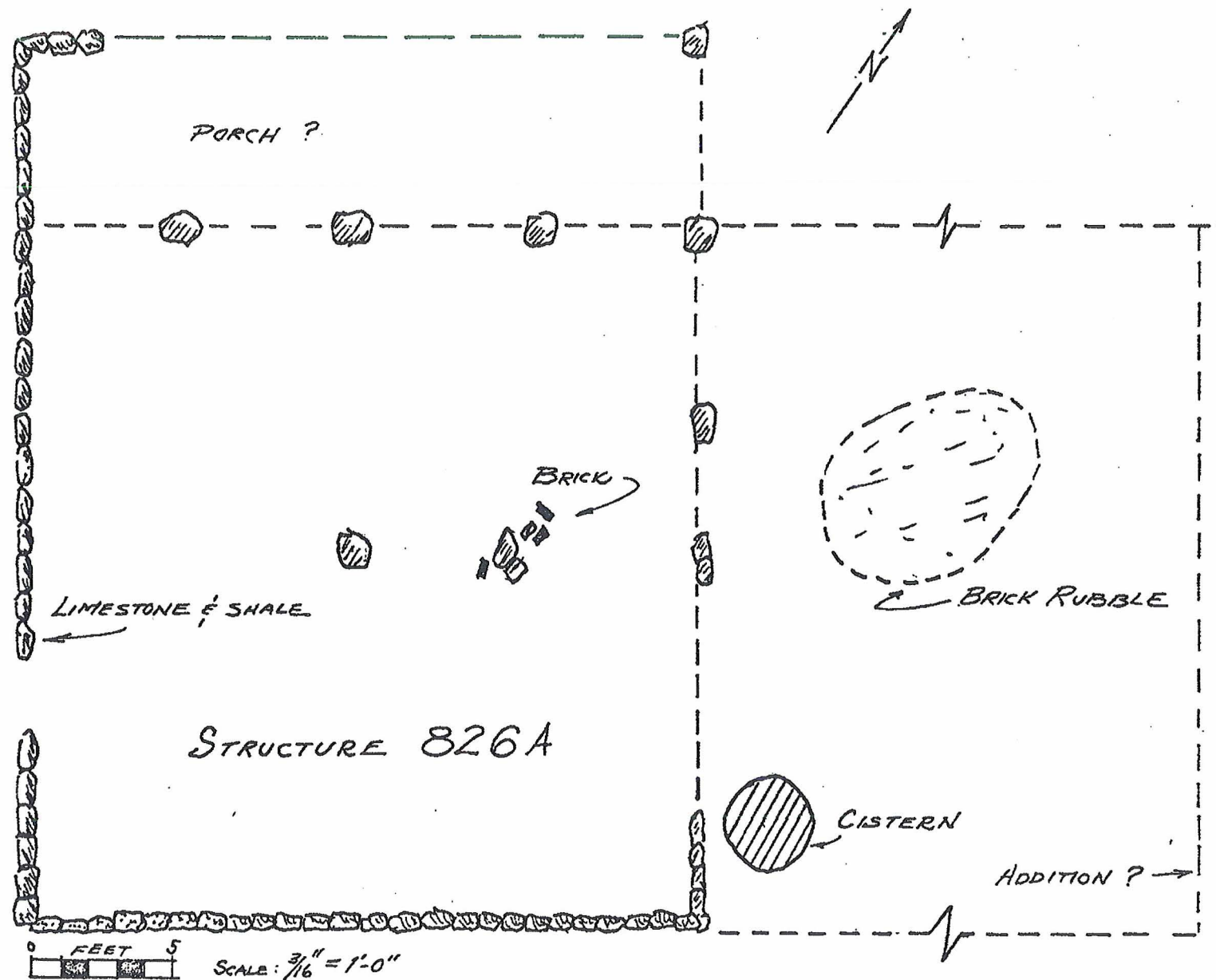


Fig. 24. Plan of Structure 826A.

Comment: At one time there was a house and barn associated with the two outbuildings described below. The house and barn remains were destroyed by the construction of the [ Exempted from Disclosure by Statute ]

### Structure 827A

General description: Hewn log outbuilding.

Location: The house with which this outbuilding is associated is shown [ Exempted from Disclosure by Statute ] W. Long. on the 1941 Bethel Valley quadrangle (Fig. 10).

Present condition: This structure is in very good condition; all of the logs are still in place, and only the roof is missing. The original door is lying beside the building.

Current investigations: Measured drawings, photographs, and detailed drawings of selected features.

Building plan: Rectangular, 10'1" x 14'1" (3.1 x 4.3 meters). The gable roof projection makes the total length of the roof 16'6" (5.0 meters).

Structural details: (Fig. 25)

Foundation. Stone piers and individual stones at each corner. No mortar was used.

Construction. Horizontal hewn log construction with half-dovetail corner notching. The logs selected are mostly pine with oak logs used on the lower courses.

Roof. A gable roof with 4-inch-diameter peeled pine pole rafters nailed on 4½-foot centers. No evidence of the roofing material or purlins is present. The gable end was covered with vertical tongue-and-groove boards. One of these boards from the apex of the gable end was cut at the roof slope (10:12 pitch).

Door. A single board and batten door is located in the center of the front of the structure. It is made with oak boards fastened with machine-made cut nails. Wooden hinges used on this door are similar to those described for Structure 825C (Fig. 25 detail).

Material collected: None.

Comments: This is a very fine example of a log outbuilding that was probably used as a storage crib or as a smoke-house for preserving meat. The projecting gable roof is a very common feature on small rectangular outbuildings (cf. Glassie 1964:22).

Recommendations: This structure should be preserved.

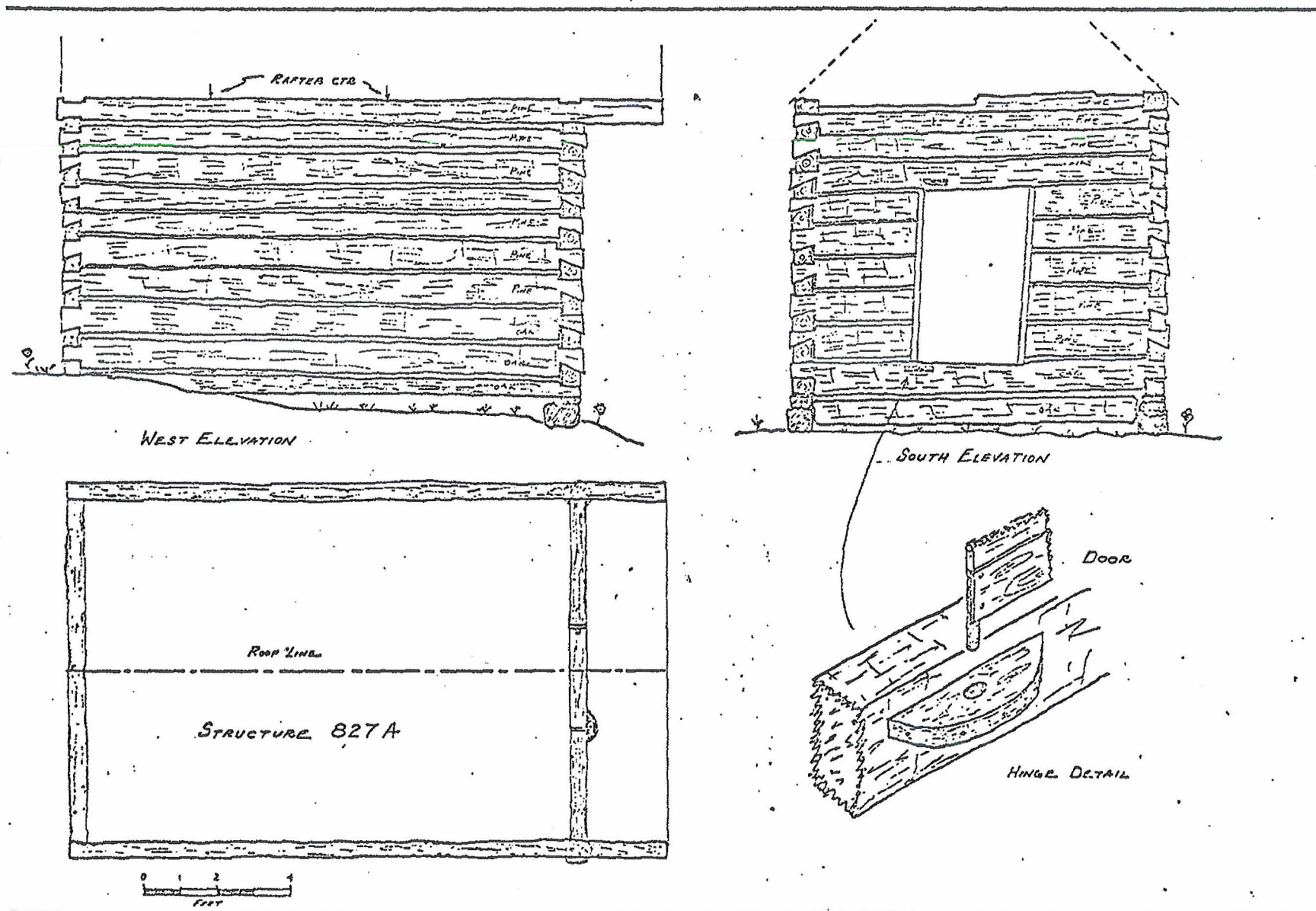


Fig. 25. Plan, South and West Elevations, and Detail, Structure 827A.

Structure 827B

General description: Small rectangular hewn-log outbuilding.

Location: About 100 feet (30 meters) north of Structure 827A.

Present condition: The sills, foundation stones, and several decayed wall logs are in their original location. The area is covered with honeysuckle vines and was planted in pines in the late 1940's or early 1950's.

Current research: Vegetation was cleared from the remaining parts of the structure, and measured drawings were made.

Building plan: Rectangular, 8 x 16 feet.

Structural details:

Foundation. Fieldstones at each corner.

Construction. Horizontal hewn log; corners joined using the half-dovetail technique. Both oak and pine logs were used.

Roof. No evidence for the roof type is extant.

Materials collected: None.

Comments: This structure probably served as a storage crib.

Recommendations: No additional work is required.

### Tract No. 828

Location: This tract was located on the [ Exempted from Disclosure by Statute ] (Fig. 9).  
The location, small size (21 acres), and relative isolation may indicate that this tract is not one of the older holdings in the area.

Ownership: It was acquired from Leonard E. Ladd by condemnation on 30 March 1943 (U.S. War Department 1943-45).

Structure 828A

General description: This structure was probably a small frame house.

Location: It is shown on the 1941 Bethel Valley quadrangle [ Exempted from Disclosure by Statute ] Situated on the south exposure [ Exempted from Disclosure by Statute ] in mixed hardwoods, the house faced [ Exempted from Disclosure by Statute ] was reached by a dirt road or wagon track [ Exempted from Disclosure by Statute ] that passed by the

Structure 827 farmstead. The house is[  
Exempted from Disclosure by Statute ] (Fig. 10).

Present condition: The frame portion of the house has been razed and salvaged; only the oak sills, brick rubble, and some structural members are still extant.

Current investigations: The existing features were recorded, and artifacts were collected.

Building plan: Rectangular, 16 x 30 feet (4.9 x 9.1 meters), with a brick chimney in the center.

Structural details:

Foundation. Fieldstone piers laid dry.

Construction. Assumed to be frame. The sills are hewn oak timbers with half-lap joints at the corners.

Chimney and fireplace. Based on the location of brick rubble, there was a chimney in the center of the house; there is no evidence for a fireplace. Cast iron stove parts in the house debris indicate that the structure may have been heated with a coal or wood stove.

Materials collected: A number of artifacts were collected from the house ruins. They include:

1. One brown glass, square cross-section, medicine bottle embossed with an inverted triangle enclosing a *W* on the bottom. This mark is probably attributable to the Whitall-Tatum Company, ca. 1935 (Toulouse 1971:544). This bottle was machine made and probably had a cork or rubber stopper. Measurements: 5.2 centimeters square; 16.0 centimeters high.
2. One glass bottle, circular cross-section, originally clear glass but now violet colored due to ultra-violet radiation acting on glass constituents. The base is embossed with a circle enclosing a *B* with extended serifs. This mark is attributed to the Brockway Machine Bottle Company of Brockway, Pennsylvania. According to Toulouse (1971:61), they first used this mark in 1925, but prior marks are unknown. The company formed in 1907 (Toulouse 1971:59). Measurements: 8.5 centimeters diameter.
3. One broken 8-inch dinner plate, ironstone, marked with a trademark attributed to John Goodwin of Liverpool, Ohio. This mark is an eagle with spread wings encircled with a double-lined circle and a series of connected maltese crosses. Over this design is the word *PEAR ?* (broken); under the design is *GOODWIN BRO ?* (broken). The company was established in 1844 (Kovel and Kovel 1953:175).
4. One broken 2-gallon stoneware crock; interior glaze is a dark reddish brown (Munsell 5YR2.5/2); the

exterior glaze grades from a brown (7.5YR4/2) to a grey (5Y5/1).

5. One iron single-bitted axe head which has been reused as a splitting wedge. The poll is heavily battered and "mushroomed" from being struck with a heavy hammer.

Comments: This structure, although frame, has some interesting aspects. The glassware and ceramics are typical for an earlier period than some of the other structures in the area, even though many of the others were constructed earlier. This observation may be explained by an "heirloom effect," i.e., the disposal of old artifacts substantially later than when they were acquired.

Recommendations: No additional work is required.

## SUMMARY OF RESULTS

Prehistoric Cultural Resources

The present survey investigated the proposed plant area and located four sites of prehistoric occupation. These sites were tested and evaluated as to potential impact of plant construction. A summary of the archaeological assessment of these four sites is given in Table 4.

TABLE 4

## SUMMARY OF PREHISTORIC SITES EVALUATION

| Site No. | Archaeological Period Represented <sup>1</sup>   | Potential Impact <sup>2</sup> | Possible Mitigation Required |
|----------|--|-------------------------------|------------------------------|
| 40RE125  | Late Archaic/<br>Early Woodland  | Primary                       | No                           |
| 40RE138  | Paleo-Indian (?)<br>Early, Middle,<br>Late Archaic<br>Early, Late<br>Woodland<br>Mississippian | Primary                       | Yes                          |
| 40RE139  | Insufficient<br>Data   | Primary                       | No                           |
| 40RE140  | Late Archaic<br>Early Woodland   | Secondary                     | Yes                          |

<sup>1</sup>See Table 1 for time ranges for each period.

<sup>2</sup>See p. 81 for definition of primary and secondary impacts.

As shown above, there is evidence of perhaps 10,000 years of prehistory represented in the archaeological materials in the plant area. Of the four sites investigated, Sites 40RE138 and 40RE140 are the most important from the standpoint of intensive occupation and greatest relevance to current problems of eastern Tennessee prehistory.

### Historic Cultural Resources

Historic resources in the study area are represented by the remains of various 19th and 20th Century farmsteads that were in operation prior to Federal acquisition of the land in 1941-1942. Although abandoned at that time, some apparently were originally constructed in the mid to late 1800's. The architectural characteristics of the extant structures were recorded in the field and are presented in Table 5. As can be seen, a number of different building techniques and materials were employed in the construction of farm buildings.

The primary result of this study is the documentation of the materials and techniques used in various farm structures--data that can be incorporated in regional folk architectural patterns as they are further studied. Thus although limited within themselves, the data are more important as elements of larger integrative studies.

TABLE 5

SUMMARY OF ARCHITECTURAL CHARACTERISTICS OF  
EXTANT HISTORIC STRUCTURES AND REMAINS

| Struc.<br>No. | House | Out-<br>bldg. | Primary<br>Construction |       | Logs         |       | Notching<br>Type |                 |                | Chimney | Fireplace | Date     |
|---------------|-------|---------------|-------------------------|-------|--------------|-------|------------------|-----------------|----------------|---------|-----------|----------|
|               |       |               | Log                     | Frame | Hewn         | Round | "V"              | HD <sup>1</sup> | S <sup>2</sup> |         |           |          |
| 716A          | ✓     |               |                         | ✓     |              |       |                  |                 |                | ✓       | ✓         | 1901     |
| 716B          | ✓     |               |                         | ✓     |              |       |                  |                 |                | ✓       | ✓         | 20th C.  |
| 733A          | ✓     |               |                         | ✓     |              |       |                  |                 |                | ✓       | ✓         | 20th C.? |
| 733B          | ✓     |               |                         | ✓     |              |       |                  |                 |                | -       | -         | 20th C.? |
| 734A          | ✓     |               | ✓                       |       | ✓            |       |                  | ✓               |                | ✓       | ✓         | 19th C.  |
| 734B          |       | ✓             | ✓                       |       | ✓(partially) |       |                  |                 | ✓              |         |           | 20th C.  |
| 737A          | ✓     |               |                         | ✓     |              |       |                  |                 |                | ✓?      | -         | 1930?    |
| 742A          | ✓     |               |                         | ✓     |              |       |                  |                 |                | -       | -         | 20th C.  |
| 743A          | ✓     |               |                         | ✓?    |              |       |                  |                 |                | ?       | ?         | ?        |
| 754A          | ✓     |               | ✓                       |       | ✓            |       | ✓                |                 |                | ✓       | ✓         | 19th C.? |
| 754B          |       | ✓             |                         | ✓     |              |       |                  |                 |                |         |           | 20th C.? |
| 824A          | ✓     |               | ✓                       |       | ✓            |       |                  | ✓               |                | ✓       | ✓         | 19th C.  |
| 825A          | ✓     |               |                         | ✓     |              |       |                  |                 |                | ✓       | -         | 20th C.  |
| 825B          |       | ✓             | ✓                       |       | ✓            |       |                  | ✓               |                |         |           | 19th C.? |
| 825C          |       | ✓             | ✓                       |       | ✓            |       |                  | ✓               |                |         |           | 19th C.  |
| 825D          | ✓     |               |                         | ✓     |              |       |                  |                 |                | ✓       |           | ?        |
| 826A          | ✓     |               |                         | ✓     |              |       |                  |                 |                | ✓       |           | 20th C.  |
| 827A          |       | ✓             | ✓                       |       | ✓            |       |                  | ✓               |                |         |           | 19th C.? |
| 827B          |       | ✓             | ✓                       |       | ✓            |       |                  | ✓               |                |         |           | ?        |
| 828A          | ✓     |               |                         | ✓     |              |       |                  |                 |                | ✓       |           | 20th C.  |

<sup>1</sup>Half-dovetail.<sup>2</sup>Saddle.

## CONCLUSIONS

The conclusions from this study are presented in two groups: (1) those that relate to current archaeological and folk culture research, and (2) those relating to possible construction impact.

### Current Research

#### Prehistoric Archaeology

The occurrence of archaeological sites [Exempted from Disclosure by Statute] is a pattern well documented in Tennessee, so that from a site-distribution standpoint Sites 40RE125, 40RE138, 40RE139, and 40RE140 add nothing unexpected to current knowledge.

Due to the small amount of cultural debris and the disturbed nature of the deposits at Sites 40RE125 and 40RE139, relatively little information on aboriginal lifeways or other archaeological information is represented in these two sites. Site 40RE139 is unusual in that it comprises a series of small, nearly contiguous activity areas, but the lack of temporally or culturally diagnostic artifacts limits the usefulness of this data. The two other sites investigated, 40RE138 and 40RE140, have greater potential.

#### Site No. 40RE138

The importance of this site lies in the recovery of artifacts associated with a wide temporal range, and the occurrence of a possible Late Woodland period Hamilton focus habitation (cf. p. 28). Should the [Exempted from Disclosure by Statute] portion of the site reveal undisturbed stratified deposits of any or all of the cultures or periods represented by the materials [Exempted from Disclosure by Statute], the site could contain important information on questions of aboriginal subsistence patterns, cultural sequences, and other data currently obtainable by means of scientific archaeological excavation. As recommended in the following section, this site should be thoroughly tested for the presence of any undisturbed archaeological remains.

#### Site No. 40RE140

The significance of the site lies in its location and physical characteristics. The knowledge of aboriginal use and/or

habitation of cave sites is important since it helps balance the large corpus of data available on the [Exempted from Disclosure by Statute] occupations. Particularly in the Tennessee Valley Region, where most of the archaeological data has been generated from research associated with river basin development, our understanding of prehistoric life has been distorted by biased sampling. This site, a small narrow cave, shows evidence of use and/or habitation during the Late Archaic and Woodland periods. The occurrence of creek-habitat mussel shells in the archaeological deposits indicates that this source of food could have been obtained in nearby [Exempted from Disclosure by Statute] While tentative (pending final identification of all of the shells), these results provide valuable information on dietary habits and resource utilization.

In conclusion, two of the four aboriginal sites investigated have the potential of providing important information relevant to current problems in Tennessee prehistory.

#### Historical Archaeology and Material Folk Culture

Investigation of the historic sites in the proposed plant area prompts the following conclusions:

1. Both horizontal log and frame construction methods were used, with log construction preceding frame.
2. The structures were generally in close proximity to the main transportation artery [Exempted from Disclosure by Statute 1).
3. It was not uncommon for a log house to be modified into a larger structure by the addition of frame portions.
4. The most common corner-notching technique used was half-dovetail, but V-notch and saddle-notch were also used.
5. Log structures, including houses and outbuildings, continued to be used as integral parts of the farmsteads well into the 20th Century.
6. The artifacts collected are known to date from the late 1930's and early 1940's and provide examples that can be used for comparative studies on historic sites.

In conclusion, the historic sites represent a type of cultural resource relating to the last inhabitants of an area that has seen the comings and going of various groups from small bands of Indians [Exempted from Disclosure by Statute] to the culture-bearers of a quantum jump in technology--the nuclear age.

### Proposed Plant Impact

Since the specific plant site and supporting facility locations have not been finalized, the following statements on the impact of construction are tentative pending final construction plans.

Adverse impact on cultural resources can be considered as either primary or secondary. Primary impact results from actual construction activities such as grading, excavation, clearing vegetation, cutting access roads, and the like. These are the processes that alter the land surface and can destroy existing buildings or disturb subsurface archaeological deposits. Secondary impact, less direct but equally deleterious, results from an increased accessibility of the cultural resources. For example, an Indian burial mound can remain untouched for years if its location is unknown or otherwise off-limits to relic collectors; however, once construction crews begin working in an area, the site becomes known and accessible, and frequently it is severely damaged by vandals. Likewise, a log cabin can stand abandoned for years without serious harm, but can be destroyed in a matter of hours if someone thinks it is all right to "salvage" the logs since construction is underway nearby. These are possible secondary impacts of large construction projects, as is development, private and public, which takes place in the vicinity and under the stimulus of a major new facility. In some ways the preparation of an environmental impact report constitutes a secondary impact since it locates and makes public data on resources that otherwise would have remained unknown. In general this kind of impact is considered less detrimental than having a valuable cultural resource destroyed inadvertently.

### Primary Impacts

The main plant site area is located in an interior valley region (Fig. 2). This area was surveyed and tested, and no evidence was found that indicates aboriginal occupation or use. There may be diffuse archaeological remains in the plant construction zone; but these, if present, will not be discernible until the extensive vegetation cover has been cleared and initial ground-surface alteration has begun. Exxon officials have agreed to provide for additional survey and salvage at this stage.

Significant primary impact on prehistoric archaeological resources could occur in the area [

Exempted from Disclosure by Statute

]The archaeological sites in this area have been described above. Any proposed construction that would involve alteration of the land surface at or near Site 40RE138 would have an adverse impact on the cultural resources represented by this multicomponent site. Whether or not this impact should be mitigated by excavation has not yet been determined (see pp. 83-85). Additional testing is recommended, as

described in an earlier report section and approved by Exxon officials for execution as soon as this program is feasible.

From the standpoint of destruction of archaeological resources, the present plant site under consideration is preferable to other alternative locations. For example, compared to any given bend of the [ Exempted from Disclosure by Statute ] facility area has a relatively light concentration of prehistoric archaeological remains.

Historic structures located in the [ Exempted from Disclosure by Statute ] that would receive primary construction impact include Structures 734A, 734B, 824A, 825A, 825B, 825C, and possibly 733A. Of these, only Structures 824A, 825B, 825C, and 734B need additional research to mitigate the impact (see recommendations). In the [ Exempted from Disclosure by Statute ] area, Structure 754A would be affected and would require additional work (see recommendations).

### Secondary Impacts

As noted above, secondary impacts result from increased traffic and access in the construction zone which increase the potential for vandalism and unauthorized "salvaging" of cultural resources that would not otherwise be adversely affected. The cave [ Exempted from Disclosure by Statute ], Site 40RE140, is a prime example of a site that may be vandalized by relic collectors as a result of this report and increased accessibility of the area.

In a similar manner, the extant historic structures described herein could become the target of persons who desire to have "a little piece of Americana" on their bookshelf or in their backyard. Log structures are rapidly becoming a status symbol in contemporary society, and as a consequence they are being torn down and sold at an alarming rate.

Structure 827A, a log crib, is in the best condition of all of the structures in the area and as such is probably the one that is in the most jeopardy from the type of secondary impact described above. Most of the structures investigated in this study are disintegrated beyond being of interest to the layman or relic collector. The existing information has been gathered during the course of the current research; only a few scattered foundation stones remain.

## RECOMMENDATIONS

Prehistoric Sites

1. Site No. 40RE138, a large multicomponent site along the [ Exempted from Disclosure by Statute ], should be further tested in the following manner:
  - a. Conduct deep stratigraphic testing using power equipment (such as a backhoe) to investigate the buried soil strata and possible undisturbed archaeological remains. The purpose of the deep tests is to determine whether the site warrants excavation to mitigate the adverse effect of possible primary impact, or preservation effected by assuring that plant construction will not intrude upon this area.
  - b. In conjunction with the backhoe testing, and if the stratigraphic test results warrant it, hand excavate test pits adjacent to the backhoe trenches to recover artifacts and other cultural data, under controlled conditions, and provide correlation of stratigraphic levels with cultural and temporal affiliations. A final determination of full potential impact, and detailed recommendations for salvage or avoidance of the site, can be made only on the basis of the proposed additional testing.
2. The other prehistoric sites (40RE125, 40RE139, and 40RE140) do not require any additional investigation at this time, although Site 40RE140, [ Exempted from Disclosure by Statute ] site, may need additional consideration if secondary impact appears likely.
3. When vegetation clearing and initial construction begin in the main plant site area, additional archaeological reconnaissance, including controlled use of earth-moving equipment, is desired to record any archaeological data that may be exposed. Exxon officials have agreed to provide for such investigations. At that stage of construction it would be very unlikely that any archaeological material significant enough to alter construction plans or schedules would be encountered. However, this recommendation, if implemented, would insure that maximum data on archaeological site distribution would be recovered. In this case the archaeological data bank would benefit from the large-scale clearing operations involved in plant construction.

### Historic Sites

The historic sites and structures investigated are not considered as eligible for inclusion in the National Register of Historic Places, but they do represent a valuable cultural resource from the standpoint of adding to our knowledge of our cultural heritage.

4. The existing structures and structural remains should be preserved in their original locations, if possible. If this is unfeasible due to primary impact, then provisions should be made for salvaging the materials and the information they contain. These provisions can be carried out in several ways:
  - a. The structures located in construction zones (Structures 734A, 754A, 824A, 825B, 825C, and possibly others) should be moved to a different location, or, where only a few usable logs remain, should be salvaged and made available for use in historic building restoration projects. The complete or nearly complete structures that require moving should be relocated where they will benefit the public. Possible sites are (1) the University of Tennessee Arboretum on the eastern end of the Oak Ridge Reservation, which is open to the public; (2) the Children's Museum of Oak Ridge, which already has a reconstructed log cabin and may have use for an outbuilding; or (3) the ERDA Museum of Atomic Energy in Oak Ridge, which might display selected artifacts and small structural members such as examples of log notching.
  - b. A second alternative for preservation of the structures within and outside the immediate construction zone would be to incorporate them in an exhibit available to the public within the Exxon Nuclear Facility reservation, such as part of a nature trail, picnic area, or similar facility if this concept is compatible with plans for public access to the structures, since they represent a way of life that is rapidly disappearing in contemporary America. In some small way, the preservation of these log buildings may help future generations know and appreciate their cultural heritage.
5. When finalized plans are prepared for the plant site and auxiliary facilities, coordination with the archaeologists should be undertaken to investigate areas which may be different from those specified in the early stages of project planning as the limits and content of this survey and interim report.

6. A final report should be published, incorporating the data and results of this interim report and the results of implementing our recommendations for larger-scale testing on the plant site and 40RE138 site area. Various publication avenues should be considered, including making the report available in microform (e.g., microfilm, microcard, or microfiche) to insure wide distribution of the results at minimal cost.

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