

K-25 Site

Oak Ridge Reservation Oak Ridge, Tennessee

Contract No. DE-AC05-93OR22028
K-25 Cultural Resources Survey

May 1995



Jacobs Environmental Restoration Team
Oak Ridge Operations

PUBLICLY AVAILABLE VERSION

**Archaeological Reconnaissance
K-25 Site
Oak Ridge Reservation
Oak Ridge, Tennessee**

Date Issued—May 1995

**Prepared by
Jacobs ER Team
125 Broadway Avenue
Oak Ridge, Tennessee
under contract DE-AC05-93OR22028**

**Prepared for
U.S. Department of Energy
Office of Environmental Restoration and Waste Management**

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ACRONYMS AND ABBREVIATIONS

AEC	Atomic Energy Commission
A.D.	anno Domini
B.C.	before Christ
°C	degrees Celsius
cm	centimeter
DOE	U.S. Department of Energy
Energy Systems	Martin Marietta Energy Systems, Inc.
ER	environmental restoration
ERDA	U.S. Energy Research and Development Administration
Ext.	Extension Service
°F	degrees Fahrenheit
ft	foot
ha	hectare
in.	inch
km	kilometer
m	meter
msl	mean sea level
mya	million years ago
NHPA	National Historic Preservation Act
No.	number
ORR	Oak Ridge Reservation
sp.	species
TVA	Tennessee Valley Authority
U	uranium
UT	University of Tennessee
WWII	World War II
years B.P.	years Before Present (Present = 1950)
yr	year

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EXECUTIVE SUMMARY

Members of the Jacobs Environmental Restoration Team conducted a cultural resource survey for the Oak Ridge K-25 Site in Roane County, Tennessee, from February through June 1994. This survey included an architectural survey in the plant area proper and an archaeological survey of the adjacent areas outside the plant boundaries. The purpose of the architectural survey was to inventory and evaluate the properties in the project to determine those that might be eligible for inclusion in the National Register. The archaeological survey evaluated the condition of previously renewed sites and made recommendations for those sites that may require further investigation. Recommendations for implementing the National Historic Preservation Act Section 106 compliance process will be provided for use in the U.S. Department of Energy Cultural Resource Management Plan.

The archaeological survey covered the K-25 Site and surrounding areas, locating and noting the condition of archaeological sites identified in previous reconnaissance surveys. A majority of the archaeological sites in the survey area was recorded by George Fielder in 1974 and in a survey of the former Wheat community in 1977. The 1994 survey by the Jacobs Environmental Restoration Team relocated these sites and identified additional structures in the Wheat Community and recorded the condition of a number of cemeteries in the project area.

Presently, no management plans have been developed which would adversely affect the condition of known archaeological sites in the project area. In the case of adverse impact, further testing is recommended for archaeological sites 40RE109 a and b, 40RE111, and 40RE126. Archaeological sites 40RE109 and 40RE111, through deep testing, exhibit potential intact stratified archaeological deposits, and 40RE126, which exhibits redoxymorphic features which could be related to human activity. It is recommended that the area around the George Jones Memorial Baptist Church, formerly known as the Wheat community, be tested further before any surface disturbance. Some intact wells and cisterns could provide a wealth of historic information on the lifeways immediately before the arrival of the Manhattan Project in 1943 because of the potential for recovering historic materials. The current logging activity in the Wheat community area, an attempt to control the pine bark beetle, is having an adverse impact on these cultural resources. The movement of heavy machinery across the surface has resulted in the disturbance of cultural material in the area. It is also recommended that the cemeteries identified in the project area be protected from any adverse impact.

Because of the massive cut and fill operations causing extensive disturbance during construction of the K-25 Site, there are likely no intact archaeological sites to be found within

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

the security fences except for the known sites identified[

Exempted from Disclosure by Statute

]

These sites must be considered if construction is planned which might affect them. Areas outside the fences not evaluated as a part of the identified archaeological sites, structures, and cemeteries will require a Phase I survey if management plans call for any surface disturbance.

1. INTRODUCTION

The K-25 Site was a gaseous diffusion process facility constructed as part of the Manhattan Project in 1944 for the enrichment of weapons grade uranium. Martin Marietta Energy Systems, Inc. (Energy Systems) manages the site for the U.S. Department of Energy (DOE). DOE is required by the National Historic Preservation Act (NHPA) of 1966, as amended, to identify any properties under its jurisdiction that are included in or eligible for inclusion in the National Register of Historic Places. This report presents the results of an archaeological survey of the K-25 Site and surrounding areas, conducted by members of the Jacobs Environmental Restoration (ER) Team. The purpose of the archaeological survey was to inventory and evaluate the archaeological properties in the project areas. Recommendations for implementing the NHPA Section 106 compliance process will be provided for use in the DOE Cultural Resource Management Plan.

The K-25 Site is located in Roane County, Tennessee, west of the city center of Oak Ridge near the confluence of Clinch River and Poplar Creek (Plate 1). The K-25 Site, a production facility, is part of the Oak Ridge Reservation (ORR). Kellogg Corporation of New York, a unit of the M. W. Kellogg Corp., designed the original building complex. J. A. Jones Construction of Charlotte, North Carolina, began building the K-25 Site in 1943. The K-25 Site was operational 17 months after construction began. The original buildings were typically steel-frame structures with cement siding set on reinforced concrete foundations and slabs. The plant area contained some 70 buildings.

The original mission of the Oak Ridge K-25 Site was the separation of ^{235}U from ^{238}U , using the gaseous diffusion process. Uranium-235 was produced expressly to develop a nuclear weapon to aid in the war effort. The main gaseous diffusion building was U-shaped and covered more than 18 ha (44 acres). It was, at the time, the largest single building under one roof in the world.

A survey of the archaeological resources in the areas outside the fences of the K-25 Site was initiated February 11, 1994, by the Jacobs ER Team. The areas covered in the survey, shown in Figure 1.1, included the following:

- K-700 Power Plant Complex area between Clinch River, Poplar Creek, and Highway 58;

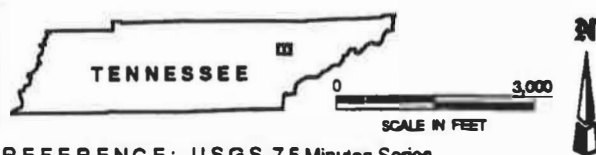
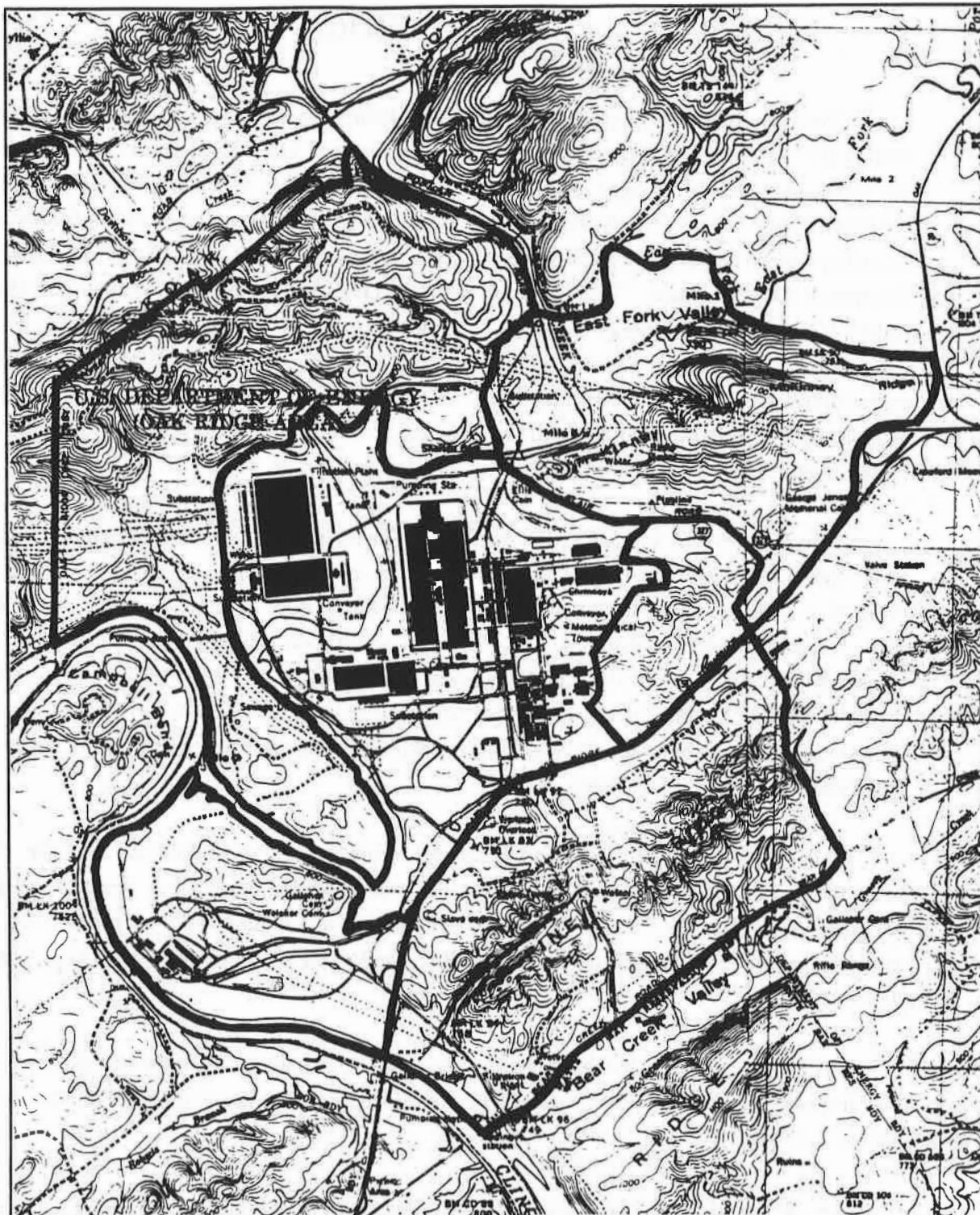
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Fig. 1.1

Five areas covered by archaeological survey at the K-25 Site

DOE — K-25 Site, NHPA — Oak Ridge, Tennessee

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- Northwest sector from the intersection of Blair Road and Highway 58 to the K-25 security fence;
- Flatlands between Bear Creek Road and Highway 58 from Blair Road west to the Clinch River;
- East of Blair Road and north of Highway 58 East to the eastern side of McKinney Ridge and north to East Fork Poplar Creek; and
- North bank of Poplar Creek and west of Blair Road north to the boundary of ORR and west to Clinch River.

These areas were investigated to determine the condition of previously recorded cultural resources within these designated areas. Presently, there are no specified management plans that would impact any of the identified cultural resources in these areas. All field notes, photographs, and other materials are on file in the Jacobs Technical Center, Oak Ridge, Tennessee, and also on file with DOE.

2. ENVIRONMENTAL SETTING

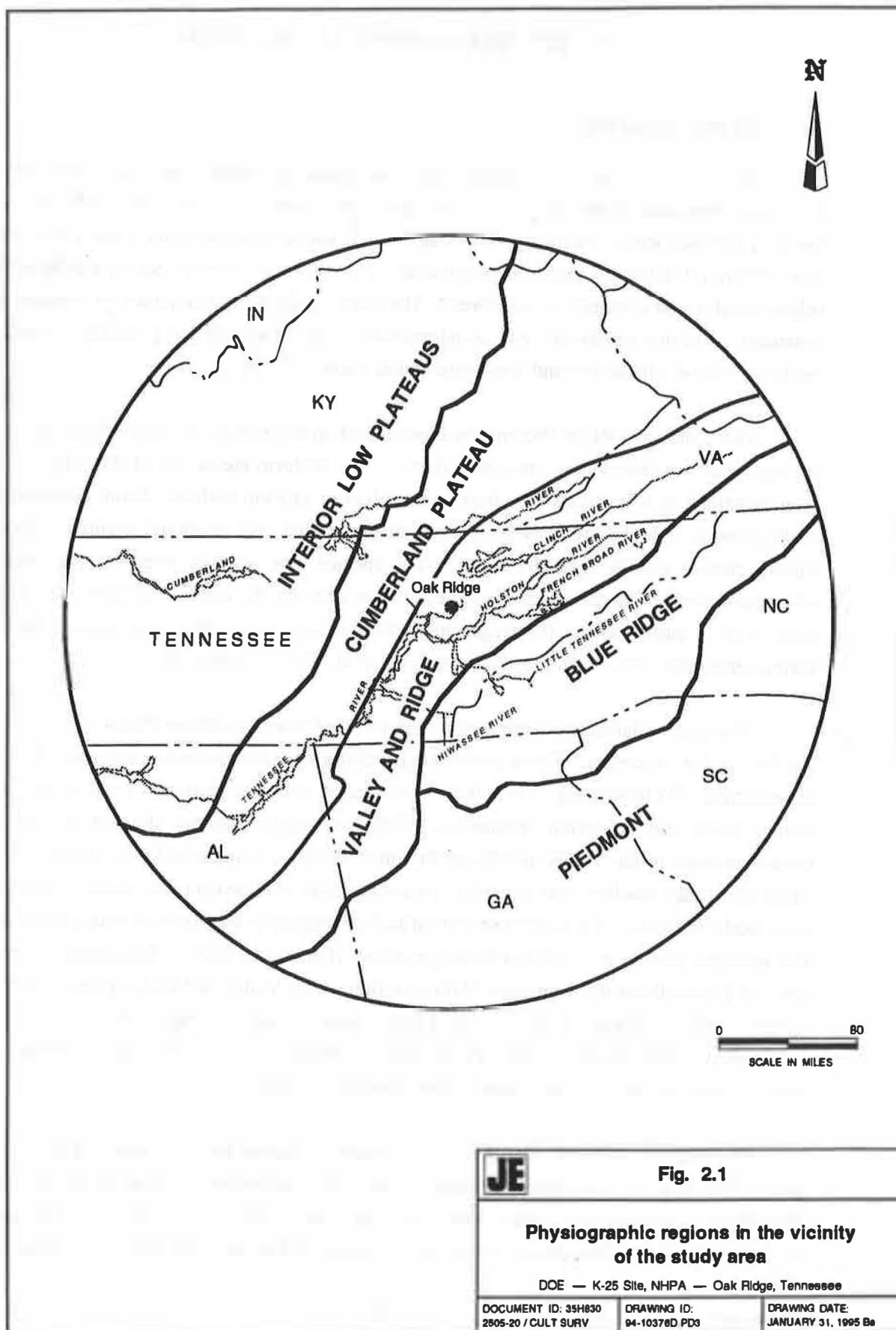
2.1 PHYSIOGRAPHY

The K-25 Site and surroundings areas lie within the Valley and Ridge Physiographic Province (Fenneman 1938) (Fig. 2.1). This province extends for 1,900 km (1,200 miles) from the St. Lawrence River southward into Alabama. It varies in width from a few miles to more than 129 km (80 miles) in central Pennsylvania. The region is characterized by a series of linear ridges which trend northeast to southwest. The ridges consist predominantly of resistant, well-cemented, siliceous sandstones and conglomerates. The lowlands are generally underlain by easily weathered limestones and less weatherable shales.

The Valley and Ridge Province is a lowland or an assemblage of valley floors surmounted by long, narrow, even-topped mountain ridges. The uniform elevations of the ridge tops have been explained as being parts of a former peneplain or erosion surface. From Paleozoic times to the present, the land area has been continuously eroded with erosional events accelerated at various phases due to renewed uplift. The surface was uplifted over several events and subsequent erosion cut the extensive valley system between the ridges. Several wind gaps that were used as passes across the ridges mark former water gaps that were present before the various erosional cycles (Fenneman 1938, King et al. 1968, Shimer 1972).

The general landscape formation model for the Valley and Ridge Physiographic Province has four major processes. These processes are defined by the following sequence; (1) general peneplaning, (2) upwarping, (3) reduction of weaker rocks to plains at lower levels, and (4) further uplift and dissection (Fenneman 1938). Drainage patterns affected by the general geomorphology in the Valley and Ridge Province exhibit a longitudinal pattern up to the point where the stream reaches a more resistant parent material and downcutting ceases. These streams were likely reflective of a transverse pattern and subsequently longitudinal with stream capture. The resultant pattern is a trellised drainage system (Fenneman 1938). This pattern is observed north of Knoxville in the Tennessee Valley section of the Valley and Ridge Province where the northern areas are drained by the Powell, Clinch, Holston, and Nolichucky-French Broad rivers, four parallel longitudinal streams. As the ridges terminate, these rivers unite to form a single stream at the foot of the Cumberland Front (Fenneman 1938).

The Valley and Ridge Province in Tennessee is, on the average, about 72 km (45 miles) wide. This is a relatively low lying area between the Cumberland Plateau to the west and the Blue Ridge Mountains to the east. Elevation ranges from 795 m (2,620 ft) on Clinch Mountain to 205 m (640 ft) at Chattanooga where the Tennessee River exits the Province. This province



covers approximately 23,400 km² (6,830 miles²) or about one-fifth the land area of Tennessee (Luther 1977).

2.2 CLIMATE

The climate of the Valley and Ridge Province of Tennessee is classified as humid mesothermal under Koppens' scheme. This is defined as warm, temperate and rainy. The average temperature of the coldest month ranges from -3°C (26.6°F) to 18°C (64.6°F) and the average temperature of the warmest month is over 10°C (50°F). There is no distinct dry season and the driest month of the summer receives more than 3 cm (1.2 in.) of rain. There is a hot summer with an average temperature of the warmest month of over 22°C (71.6°F). Under Thorwaite's classification system, the area is defined as a humid-forest, mesothermal with rainfall abundant during all seasons (Trewartha 1943).

The Valley and Ridge Province has a growing season that lasts from 180–220 days. There is an average decrease in temperature of 5°C (3°F) per 303 m (1,000 ft), and in the Valley temperatures increase from north to south. Precipitation decreases from south to north due to moist air from the Gulf of Mexico. An increase in effective precipitation with elevation is observed as air is forced to ascend, cools and condenses out a portion of its moisture charge. Precipitation in the Valley and Ridge Province averages 102 cm/year (40 in./year) in the northern parts to 127 cm/year (50 in./year) in the south. Precipitation in portions of the Great Smoky Mountains exceeds 203 cm/year (80 in. year). Most of the precipitation occurs during the winter and early spring seasons. A secondary pulse of precipitation occurs in mid-summer due to shower and thunderstorm activity. Fall is the driest season of the year. December through March is considered flood season, and average snowfall in the Valley and Ridge Province ranges from 10.1–15.2 cm/year (4–6 in. year) (Dickson 1978).

2.3 GEOLOGY

The general geologic structure of the Valley and Ridge Province was the result of a compressive force caused by sea floor spreading and collision between North America and Africa about 250 million years ago (mya) (Permian). This may be the best explanation for the evidence of folding, thrusting, and the subsequent development of the linear ridges. Sediment accumulated in a long, relatively narrow trough occupied by an arm of the sea. Sediment was derived from nearby land masses and organic remains. As the sediment accumulated, filling the trough, there was subsidence in the basement material. This led to major thicknesses of shallow-water deposits. This sagging depositional trough, or geosyncline, has been filled and refilled with sediments. This process continued when the sea retreated and mountain building episodes, caused

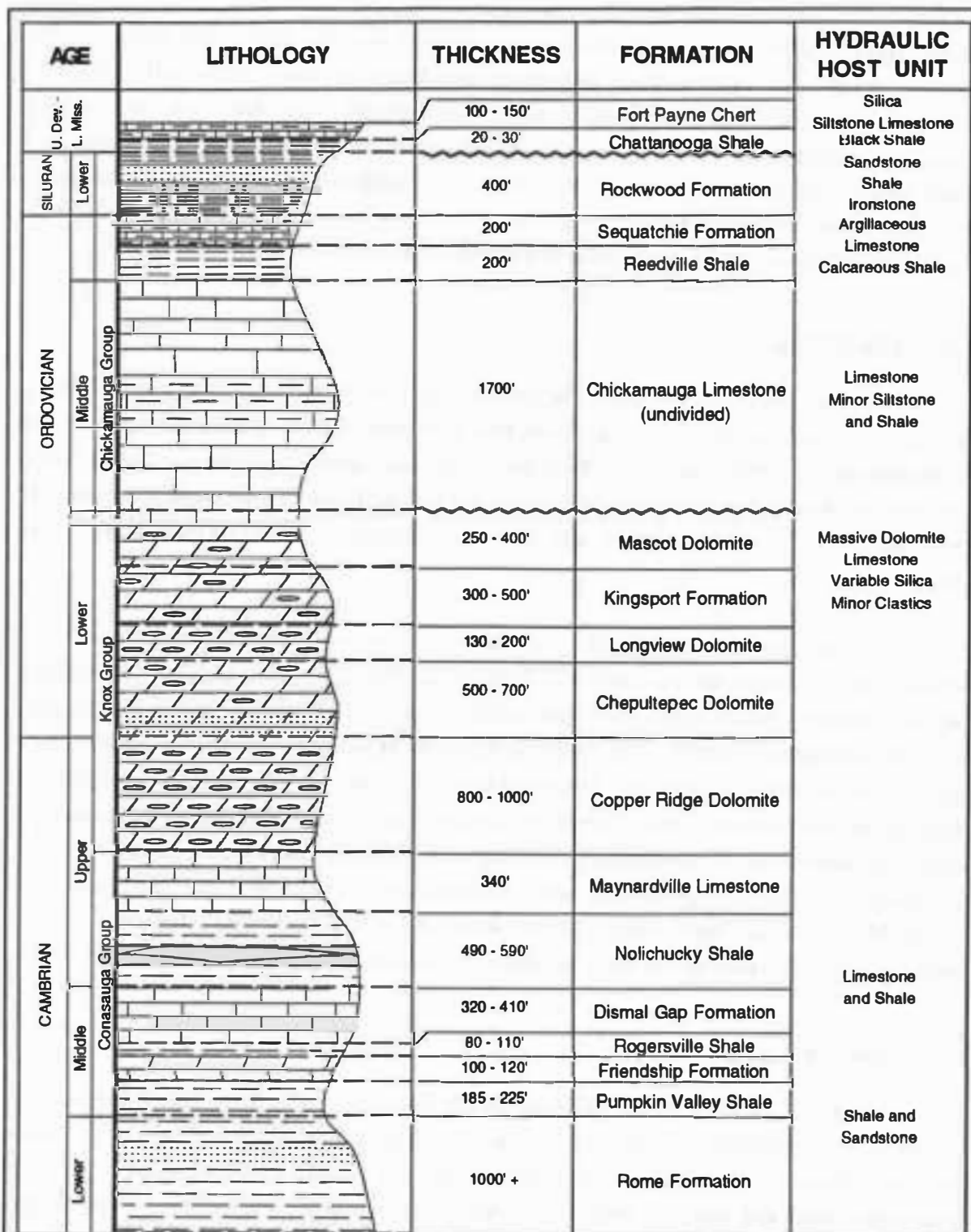
by the collision between North America and Africa, folded, faulted, and altered the rocks, pressing them northwest along a series of thrust faults that stacked up the rock units. Around 150 mya (Jurassic) the continents began to pull apart, releasing the compressional stress and allowing erosion to cut away at the uplands. Since then there have been two cycles of erosion and uplift (Luther 1977).

The geology in and around the K-25 Site consists primarily of Ordovician and Cambrian bedrock geology. The general idealized geologic section for the Valley and Ridge Province of Tennessee is shown in Figure 2.2. Blackoak Ridge, on the northern portion of the plant, consists of the Ordovician Knox Group, a siliceous dolomite and magnesian limestone sequence. The Poplar Creek and main plant areas are underlain by the Chickamauga Group limestone sequence. The Happy Valley area, on the south side of the plant, is underlain by the Rome Formation which is a variegated (red, green, yellow) shale and siltstone with beds of grey, fine-grained sandstone. The Conasauga Group, which is primarily shale, dominates in the Wheat community area and along Pine Ridge (Hardeman 1966).

2.4 SOILS

There are two major soil associations in the area of the K-25 Site. The Fullerton-Bodine association is represented in the lowlands such as the main plant area and Happy Valley. This association typically consists of hilly and steep, deep, well-drained, cherty and clayey soils from dolomitic limestone. The landscape is highly dissected with rounded hills which rise some 61–91 m (200–300 ft) above the drainageways. About two-thirds of this landscape is on moderately steep to steep slopes and elevation generally ranges between 273–364 m (900 and 1,200 ft). The residual soils are primarily formed from cherty dolomite, are well drained, cherty and have thick, reddish and yellowish, permeable subsoils. They are highly leached, strongly acidic or very strongly acidic and low in natural fertility. The soils are predominantly clayey, kaolinitic, and loamy-skeletal, siliceous Paleudults (Springer and Elder 1980).

The remaining area consists of uplands along Pine Ridge and Blackoak Ridge which are dominated by the Wallen-Talbott-Montevallo soil association. This association is usually found on steep ridges and rolling valleys with shallow to moderately deep excessively drained and well-drained, stony and clayey soils derived from sandstone, shale, and limestone. The soil association is typically composed of a series of long parallel ridges and valleys where narrow valleys are sandwiched between linear ridges that rise as much as 303 m (1,000 ft) above the drainageways. The ridges are supported by tilted sandstone, shale, and sometimes cherty dolomitic limestone which are commonly interbedded. The valleys are commonly underlain by clayey limestone or acid shale. There is a mosaic of soil types within this association. Limestone



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Fig. 2.2

Generalized geologic section for the ridge and valley physiographic province

DOE — K-25 Site, NHPA — Oak Ridge, Tennessee

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SOURCE: Hatcher et al. 1992.

valleys sport reddish, slowly permeable, clayey soils of variable depth over bedrock with common limestone outcrops on slopes and around deep limestone sinks. Shale soils of 0.3–1.2 m (1–4 ft) in thickness are found on the rolling to hilly uplands. They have thin, silty surface layers over reddish, clayey, slowly permeable subsoils with variable amounts of shale fragments. Small benches and upland flats commonly have a weak fragipan or a slowly permeable clayey or shaly layer at a depth of 0.61–1.0 m (2–3 ft). The main soils in this association are primarily loamy-skeletal Dystrochrepts; fine mixed Hapludalfs; and clayey and loamy Hapludults.

2.5 VEGETATION

The area of the K-25 Site lies within the Carolinian Biotic Province. Most of the area in this biotic province incorporates a significant area of the eastern portion of North America and is characterized by hardwood forest. Four forest types are recognized in the Carolinian Biotic Province: (1) Beech-Maple in the northern portion, (2) Oak-Hickory in the western portion, (3) Oak-Chestnut in the eastern portion, and (4) Mixed Mesophytic in the central portion (Dice 1943).

The Oak-Chestnut Forest Region includes the Valley and Ridge Province. In southern Virginia and Tennessee the transition belt between the Oak-Chestnut and Mixed Mesophytic region is narrow. Mixed Mesophytic communities occur more frequently in ravines and gaps near the Cumberland Plateau. The American Chestnut (*Castanea dentata*) was the dominant species prior to the Chestnut Blight. Red oak (*Quercus borealis maxima*) and white oak (*Quercus alba*) are the subdominants. Red maple (*Acer rubrum*), sweet birch (*Betula lenta*), cucumber tree (*Magnolia acuminata*), service berry, striped maple (*Acer pennsylvanicum*), mountain holly (*Ilex montana*) and witch hazel (*Hamamelis virginiana*) are species of the small tree shrub layer. On Clinch Mountain and Copper Ridge, a beech-white oak or white oak-beech community can be found in scattered stands on the lower mountain slopes with southerly exposures (Braun 1950).

2.6 FAUNA

The faunal resources of the Valley and Ridge Province and the Tennessee Valley are rich and diverse. Exploitation of faunal resources by aboriginal peoples was largely seasonal. Fauna such as mollusks, turtles, water birds, aquatic mammals, and white-tailed deer were collected during the spring and summer. White-tailed deer, bear, and wild turkey were collected during the fall and winter months (McCollough and Faulkner 1973). The former richness of these faunal resources was catalogued by Lt. Henry Timberlake who lived with the Overhill Cherokee in the Little Tennessee Valley in 1761–1762 who related this account:

"...brooks were well stored with fish, otters, and beavers...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, beside turkeys, geese, ducks of several kinds, partridges, pheasants, and an infinity of other birds" (McCollough and Faulkner 1973).

Mammalian fauna which are or were common in the Valley and Ridge Province of Tennessee and were used in the prehistoric diet, include opossum (*Didelphis virginiana virginiana*), black bear (*Ursus americanus americanus*), raccoon (*Procyon lotor varius*), red fox (*Vulpes fulva fulva*), panther (*Felis concolor concolor*), groundhog (*Marmota monax monax*), gray squirrel (*Scurus carolinensis carolinensis*), Carolina beaver (*Castor canadensis carolinensis*), eastern cottontail (*Sylvilagus floridanus mallurus*), and white tailed deer (*Odocoileus virginianus virginianus*). Mammals recorded as common in this area of Tennessee include gray wolf (*Canis lupus lycaon*), eastern elk (*Cervus canadensis canadensis*), and eastern woodland bison (*Bison bison pennsylvanicus*) (Kellogg 1939).

A number of avian fauna have been recorded in East Tennessee. Birds common to this area include the water birds like the pied-billed grebe (*Podilymbus podiceps podiceps*), little blue heron (*Florida caerulea caerulea*), and the eastern green heron (*Butorides virescens virescens*). Migratory water fowl in this area include the common Canada goose (*Branta canadensis canadensis*), common mallard (*Anas platyrhynchos platyrhynchos*), green-winged teal (*Nettion carolinense*), blue-winged teal (*Querquedula discors*), ring-necked duck (*Nyroca affinis*), and the lesser scarp duck (*Nyroca affinis*). Common raptors include the northern harrier (*Circus hudsonius*), eastern sparrow hawk (*Falco sparverius sparverius*), red-tailed hawk (*Buteo borealis*), Cooper's hawk (*Accipiter cooperi*), osprey (*Pandion haliaeetus*), bald eagle (*Haliaeetus leucocephalis*), eastern screech owl (*Otis asio naevius*), great horned owl (*Bubo virginianus*), and northern barred owl (*Strix varia varia*). Some common game birds include the eastern ruffed grouse (*Bonasa umbellus umbellus*), eastern bob white (*Colinus virginianus virginianus*), and eastern mourning dove (*Zenaidura macroura carolinensis*) (Gainer 1933, Hon 1963). The wild turkey (*Meleagris gallopavo*) is commonly found in the context of archaeological sites in this area (Parmalee 1973).

The rivers and streams of the Valley and Ridge Province of Tennessee provided a number of exploitable resources for the aboriginal occupants of this area. Common fish species which often occur in the archaeological record include gar (*Lepisosteus* sp.), suckers (family *Catostomidae*), catfish (*Ictalurus* sp.), bullhead (*Ameiurus* sp.), black bass (*Huro salmoides* and *Micropertus dolomieu*), sunfish (family *Lepominae*), and fresh water drum (*Aplodinotus grunniens*) (Kuhne 1939, Parmalee 1973). Turtle species which were exploited by prehistoric peoples

include the snapping turtle (*Chelydra serpentina*), musk turtle (*Sternotherus odoratus*), mud turtle (*Kinosternum subrubrum*) and the spiny soft-shelled turtle (*Tryonix ferox*). The eastern box turtle (*Terrapene carolina*) was also an important food resource (Parmalee 1973). Aquatic shellfish were exploited by the early peoples of the Tennessee Valley. A study conducted in the area of the Clinch River near Norris Dam identified 23 genera and 40 species of pelecypods (both nodulate and smooth-shelled) and 23 genera and 50 species of gastropods (Hickman 1937).

2.7 PALEOENVIRONMENT

Through time the Valley and Ridge Province has been affected by many major changes in climate, biota, and landform. Several studies document changes in North American climates as functions of air mass and prevailing air stream patterns across North America (Bryson 1966, Bryson and Hare 1974, Bryson and Wendland 1967). During most of the Late Pleistocene Period, the midsouth area was dominated by an Arctic air stream system which kept the area in a state of homeostasis due to cold, boreal climate with little seasonal fluctuation (Bryson and Wendland 1967, Delcourt and Delcourt 1981). The Early Holocene Period [12,000 to 10,000 years before the present (B.P.)] was distinguished by a southward penetration of the Arctic air stream and a northern influence of the Caribbean air mass, creating a significant fluctuation in moisture and temperature gradients (Bryson and Wendland 1967; Delcourt 1979). Warm, dry westerly winds blocked the Canadian and Gulf air masses between 8,000–4,000 years B.P. creating a climatic optimum distinguished by warmer temperatures and drier conditions (Bryson and Wendland 1967, Delcourt 1979). Around 4,000 years B.P., the climate returned to a more mesic condition which characterizes this area of Tennessee today (Delcourt and Delcourt 1981).

The Late Pleistocene/Early Holocene transition, which occurred around 10,000 years B.P., experienced many dynamic environmental changes. During the Early Holocene transitional period a northern mixed coniferous northern hardwood forest existed. Taxa within this early transitional period included pine, spruce, hemlock, oak and birch. In the later portion of this transitional period taxa gradually changed from a northern forest type to a closed canopy mast forest of oak, maple, beech, basswood, elm, walnut, hemlock, and gum (Delcourt and Delcourt 1981). During this time boreal mammal species could be found in this area (Klippel and Parmalee 1982).

The Hypsithermal Interval, a Mid-Holocene climatic optimum from 8,000–4,000 years B.P., witnessed a change from the cool, moist Early Holocene conditions to a warmer, drier environment. Prevailing dry westerly winds provided a blocking mechanism deleting the effects of the northerly Canadian and southerly Gulf winds. This blocking action created a drop in mean annual precipitation of around 35 cm (13.6 in.) (Solomon et al. 1980). The vegetational

transition from a closed canopy forest to a mixed mesophytic forest was completed during this period (Delcourt 1979). This period saw the expansion of the cedar glades in the Inner Nashville Basin and a decrease in mesophytic taxa in the Outer Nashville Basin. The Mid-Holocene levels in Cheek Bend Cave document the occurrence of the grassland sorcid, *Cryptotis parva*. A collection of unionid assemblages in these levels infer that the Duck River was shallow and swift during this period (Klippel and Parmalee 1982).

The Late Holocene Period experienced a return to a cool, moist climate. From 5,000–200 years B.P. precipitation levels increased (Solomon et al. 1980). Upland vegetation readjusted to the same areal distribution as it has today (Delcourt 1979).

3. PREVIOUS INVESTIGATIONS

There have been a number of archaeological reconnaissance surveys within ORR. The first survey was performed by Cyrus Thomas for the Bureau of American Ethnology (Thomas 1894). The survey concentrated on locating burial mounds throughout the southeastern United States. Two prehistoric mounds were located on the Clinch River. These were the Lee Farm Site (40RE27) and the Jones Island Site (40RE28).

William S. Webb conducted field investigations in concert with the Works Progress Administration in the 1930s for the Tennessee Valley Authority (TVA). The field investigations took place[Exempted from Disclosure by Statute]before the closing of Norris Dam (Webb 1938). Two Woodland period burial mounds were located on ORR. These sites were the [Exempted from Disclosure by Statute]Mounds Site (40AN21) and[Exempted from Disclosure by Statute]Mounds Site.

Charles Nash, from the University of Tennessee (UT), conducted an archaeological survey on the lower Clinch River after the construction of Norris Dam (Nash 1941). Nash located many archaeological sites in the plowed fields,[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute .]

A survey by UT was conducted for TVA in the Melton Hill Dam area (McNutt and Fisher 1960; McNutt and Graham 1961). Several archaeological sites were located, including[Exempted from Disclosure by Statute](40AN2),[Exempted from Disclosure by Statute](40AN8), and[Exempted from Disclosure by Statute](40AN20). [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] was a multicomponent site which contained Woodland, Mississippian, and Euro-American period artifacts.

In the 1970s, George Fielder led a UT investigation team. They inventoried several sites reported by the Cyrus Thomas and Melton Hill Projects (Fielder 1974).[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] Forty-five prehistoric archaeological sites were identified in the 1974 field season alone. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] These new sites included five burial mound clusters and one quarry site.

George Fielder conducted an historic inventory of pre-World War II (WWII) buildings and farmsteads in ORR (Fielder et al. 1977). Over 400 structures, identified on pre-WWII topographic maps, were examined. Of these, 215 exhibited no remaining physical evidence, 115 had been scavenged, 46 were partly standing, and 38 were standing. Fielder's investigation resulted in one of four major recommendations for each of the structures:

- No further work required;
- Salvage materials present;
- Salvage structure; or
- Preserve structure in original location.

[Exempted from Disclosure by Statute] an early 18th century double pen house located in [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] was nominated to the National Register of Historic Places.

Gerald Schroedl conducted investigations in the lower Clinch River area as a part of the Clinch River Breeder Reactor Project (Schroedl 1972). The pedestrian and windshield survey recorded the condition of sites reported in an archaeological survey conducted by Nash and the condition of buildings located on pre-WWII quadrangle maps of the Elverton and Bethel Valley. Archaeological investigators studied a Late Woodland burial mound and relocated archaeological sites 40RE104 and 40RE108, which were originally identified during Nash's survey. Schroedl also located four Euro-American settlements and a Euro-American cemetery.

In a follow-up study to the Clinch River Breeder Reactor project, Schroedl was able to locate additional sites following the acquisition of a 1940 era survey map from TVA (Schroedl 1974). He located 14 historic Euro-American buildings and clusters of buildings on 12 land tracts. Most of the structures were represented only by limestone or brick foundations and collapsed chimneys, particularly for house and barn structures. Light sheds located on the 1940 maps were usually not found. The chronology developed from the survey indicated that cribs built from hand hewn logs fitted in half-dovetail fashion could date from the second half of the 19th century, possibly as early as 1870. Houses set on limestone foundations and having fitted limestone chimneys probably were built in the late 19th and early 20th century. Houses with brick chimneys and concrete foundations likely were constructed in the early 20th century.

In 1975, Fielder conducted an historic reconnaissance survey in the area of the proposed Gaseous Centrifuge Plant near the K-25 facility (Fielder 1975). The survey relocated 19 buildings in the former Wheat community. Most of the structures had been razed and little evidence of these buildings remained. This survey recommended that preservation measures be taken to save the George Jones Memorial Baptist Church and associated cemetery.

A survey was conducted on 560 ha (1,400 acres) for the proposed Tennessee Synfuels Associated Site by GAI Consultants (1981). [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] Prehistoric site 40RE86 contained undisturbed cultural features and was recommended for inclusion in the National Register of Historic Places. Two historic sites,

[Exempted from Disclosure by Statute] were recommended for inclusion in the National Register due to the presence of early home power plants. Two additional sites, the McKinney Plantation and cemetery and the Hacker Plantation, were not considered eligible for inclusion in the National Register, but were considered worthy of preservation.

A second survey of the Clinch River Breeder Reactor Project covered areas not previously covered by Schroedl (Jolley 1982). Using a shoreline survey, a deep test procedure, and shovel tests, 17 additional archaeological sites were located.

A Phase II investigation of two historic house sites on the north side of Copper Ridge, approximately one mile south of the Oak Ridge National Laboratory was conducted by James Myster (1988). The study recommended that [Exempted from Disclosure by Statute] (40RE189), a log house dating as early as 1820, be nominated for National Register listing. The Jenkins House (40RE188), a log house and smokehouse complex, was considered to be irreversibly and adversely affected by modern activity and was not considered eligible for listing on the National Register although preservation measures were recommended.

At least two additional reconnaissance surveys were conducted in the K-25 area. A Phase I survey was conducted of [Exempted from Disclosure by Statute] by Bentz (1993). One site (40RE202), consisting of two pieces of debitage, was located within the surveyed area. Another survey was conducted in the area of [Exempted from Disclosure by Statute] (K-1065-1066) and the Production Waste Storage Facilities in the K-25 area by DuVall (1992). The reconnaissance survey concluded that no cultural resources would be affected by the proposed construction plans.

4. PREHISTORIC AND HISTORIC SETTING

4.1 PALEO-INDIAN STAGE [10000-8000 before Christ (B.C.)]

The Paleo-Indian stage represents the Pleistocene adaptation of peoples on the North American continent. Continental glaciation affected the northern portion of North America; however, the Valley and Ridge Province of Tennessee remained unglaciated throughout the Pleistocene Period (2.5 mya to 10,000 years B.P.). The southeastern United States experienced some fundamental differences in climate, biota, and landscape development. Loess deposits have been documented from the Mississippi River to the Cumberland Plateau, a direct result of continental deglaciation. Block fields and boulder streams in the Appalachian and Cumberland mountains are evidence of periglacial activity in higher elevations. The karst development in the Interior Low Plateaus may be related to periglacial freeze-thaw activity.

Faunal and floral diversity during the Pleistocene Period showed that environmental conditions and the subsistence base for human exploitation was different than the present. For example, deposits dating around 16,000 years B.P. in Saltville, Virginia show the presence of musk ox, giant ground sloth, beaver, and caribou in the Pleistocene faunal assemblage. One of the more provocative questions that remain is whether the Paleo-Indian inhabitants took advantage of these Pleistocene assemblages.

One primary characteristic of the earlier Paleo-Indian Period is the presence of the fluted projectile point or Clovis, also known as the Eastern Woodland Clovis tradition. The Clovis point is a lanceolate point with a flute on either side which provided greater strength to the shaft. The point was attached to the foreshaft of wood or bone and inserted into longer spear shafts (Chapman 1985). It is believed that the Paleo-Indians may have been mobile, nomadic big game hunters. Material evidence includes unifacial tools and the lack of permanent structures. These peoples entered the New World across the Bering Strait during peak glacial times and migrated through an ice-free corridor that existed between the Laurentide and Cordilleran ice sheets into the heart of North America. The evidence for the Clovis tradition is far greater in the southwestern United States, but a considerable amount of Clovis material has been found in the Interior Low Plateaus Province of Middle Tennessee and Kentucky (Lewis and Kneberg 1958, Dragoo 1973). There is evidence that the development of grassland habitat suitable for range animals of the Pleistocene Period may have existed in the area of Middle Tennessee (Klippel and Parmalee 1982).

One of the more famous Paleo-Indian archaeological sites in the Valley and Ridge Physiographic Province is in [Exempted from Disclosure by Statute] in the Shenandoah River Valley of northern

Virginia. The site had a stratified series of alluvial sediments that included the early Paleo-Indian Clovis and Late Paleo-Indian Dalton materials to the Early Archaic Period materials. The site was located near a source of red jasper near a gap that could have been connected with a Pleistocene mammal migration route. Pollen evidence indicated a boreal forest grading into a deciduous forest environment in the vicinity during this period, with open grassland gaps in the uplands (Gardner 1974).

The transition from the Paleo-Indian Period to Early Archaic Period may be represented by the Dalton Tradition. Evidence points to a rather steady transition from the earlier Paleo-Indian traditions of the Clovis (and perhaps Cumberland) through the Dalton to the Early Archaic (Gardner 1974). Evidence points to a time of transition between the Pleistocene to the fully modern Holocene flora and fauna. There is also a change from a broad-based cultural tradition to one of more regional specialization.

The Dalton tradition in the Valley and Ridge Province is represented by the Nuckolls/Greenbrier Phase. This phase is found mostly in the main river valleys. The name is derived from the Nuckolls and Greenbrier sites in the western Tennessee Valley (Lewis and Kneberg 1958). The Dalton material culture is a blade industry of Dalton projectile point types, usually resharpened and reworked points and blades. The first datable Dalton site in the southeastern United States was the Stanfield-Worley Bluff shelter in Alabama. Radiocarbon analysis of the Dalton Zone in the rockshelter dated between 7500–8000 B.C. Artifacts included Dalton and Big Sandy type points. The faunal evidence at Stanfield Worley, [Exempted from Disclosure by Statute] in Alabama, and [Exempted from Disclosure by Statute] in Missouri shows that principal game animals included white-tailed deer, turkey, raccoon, and gray squirrel (DeJarnette et al. 1962).

4.2 ARCHAIC STAGE (8000–900 B.C.)

The Archaic Stage in the Valley and Ridge Province of Tennessee represents a moderately mobile hunting and gathering economy. Food sources were based on the ability to use the flora and fauna native to the eastern woodlands of North America. Technological developments included the use of the atlatl, the development of ground stone tools, and the beginnings of early horticulture. The appearance of ceramics in the archaeological record demarcates the general terminus of the Archaic Stage.

4.2.1 Early Archaic (8000–6000 B.C.)

The transition from the Dalton tradition to the Early Archaic tradition is represented by several developments. There was an intensive use of caves and rockshelters during the Early Archaic tradition. There is evidence of intensive occupation of riverine sites. There was also

intensive use of arboreal seed crops such as hickory nuts and acorns. The lithic technology changed from a fluted, lanceolate point to notched, hafted, resharpened bifaces.

Some of the major Early Archaic sites in the Valley and Ridge Province of Tennessee are in the Tellico reservoir of the Little Tennessee River Valley. Two very important sites are [Exempted from Disclosure by Statute] and [Exempted from Disclosure by Statute] representing two major traditions, the Kirk and the Bifurcate (Chapman 1975, 1977).

The Kirk tradition (7500–6900 B.C.) was fully adapted to full, broad leafed deciduous forest. Lithic technology included the Kirk Corner Notched and the Palmer Point. There was evidence of frequent use of locally available chert materials, bipolar flaking, and the appearance of metates and anvil stones. Hickory nuts and acorns are found extensively in the floral remains. Rock hearths, fire-cracked rock and deep globular pits are common. Pressed clay hearths made of red clay packed in woolen bags are evidence of early forms of weaving and the earliest evidence of textiles in the southeastern United States. Evidence also revealed green-bone cremation at Icehouse Bottom (Chapman 1977).

The Bifurcate tradition is represented by three phases; (1) St. Albans, (2) LeCroy, and (3) Kanawha. The St. Albans phase (around 6770 B.C.) exhibits an increase in bipolar flaking using mostly local cherts. There is a greater exploitation of acorn and hickory seed crops. The LeCroy phase (around 6300 B.C.) is represented by the LeCroy bifurcated projectile point. The Kanawha phase is not well represented in the Little Tennessee Valley, but is characterized by stemmed projectile points (Chapman 1985).

4.2.2 Middle Archaic (6000–3000 B.C.)

The Middle Archaic Period in the southeastern United States is characterized by:

- greater regional stylistic diversity. Broad stemmed and round-stemmed (Morrow Mountain) projectile points developed into a short-stemmed or corner-removed point (Stanly). There are no serrated blade edges, some evidence of resharpening, but not as extensive as in the Early Archaic period.
- use of nonchert lithic materials. There is evidence of an increased use of quartz, quartzite, and slate materials.
- first evidence of the atlatl or spear thrower.
- increases in ground stone tools.

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

- appearance of shellfish use and first shell middens associated with an archaeological context.
- increases in the number of preserved burials.
- first evidence of the domestication of the dog.
- domestication of cucurbits or squash.

The Middle Archaic Period in the Valley and Ridge Province of Tennessee is represented in the Little Tennessee River Valley particularly at [Exempted from Disclosure by Statute] and the [Exempted from Disclosure by Statute]. The general community and settlement pattern is on river terraces. There is no evidence of population increase during this period. There is a decrease in the use of blade tools from the Early Archaic Period and an increase in the number of bifaces. There is the appearance of a stemmed projectile point (Stanly) which differs from the bifurcated Early Archaic points (e.g., LeCroy). There is the first appearance of the notched "net sinker" and semilunar banner stones. Subsurface features consist of small globular pits, basins, and hearths. Walnut remains appear more frequently in the paleobotanical material. The subsequent phase (Morrow Mountain) exhibits little change in site size or location. The major difference lies in the change to a Morrow Mountain projectile point which can be formed from poor grade chert or nonchert material. The Middle Archaic peoples of the Little Tennessee Valley may be directly related to cultures from the North Carolina Piedmont (Chapman 1977, Lewis and Lewis 1961, Chapman 1985).

4.2.3 Late Archaic (3000-900 B.C.)

The Late Archaic Period in the Valley and Ridge Province is characterized by an increased use of riverine systems for settlement. A survey in the Great Smoky Mountains showed a concentration of people in narrow river valleys and the appearance of Appalachian stemmed projectile points (Bass 1977). The [Exempted from Disclosure by Statute] Site (2400-2000 B.C.) in the Little Tennessee River Valley was a deeply buried site which produced Appalachian stemmed projectile points of quartzite along with winged atlatl weights and grooved axes (Chapman 1981). Evidence of cultivation of squash at [Exempted from Disclosure by Statute] post dates evidence of squash at [Exempted from Disclosure by Statute] and the Columbia Reservoir (Cowan et al. 1981).

The later Late Archaic Period can be represented by the [Exempted from Disclosure by Statute] (1700-1500 B.C.). This site characterized a change in occupation which may have indications of a population increase or technology change. The site had a number of rock-filled earth ovens and a few cremation burials. There was no evidence of storage pits or postholes, which represent house structures. Plant remains included squash and gourd; however, there were a large number of

herbaceous plants including goosefoot, lamb's quarter, wild rice, and wild sunflower. These plants indicated an open, disturbed environment in which people were collecting but not actually domesticating (Chapman 1981).

The [Exempted from Disclosure by Statute] on the Tennessee River in Loudon County represents a Late Archaic occupation which post-dates the Iddins Site (around 900 B.C.). This site produced evidence of a crude shelter, or windbreak, with an interior earth oven feature, a single occupation dwelling which may have been used for a single season. The presence of domestic sunflower in the botanical remains shows deliberate domestication of plants (McCollough and Faulkner 1973).

The transition of the Late Archaic–Early Woodland Periods (around 2000–1000 B.C.) is represented by a number of cultural developments. One is the development of the Eastern Agricultural Complex, or the domestication of a number of herbaceous plants, including *Chenopodium* sp. (chenopod, goosefoot, lamb's quarter), sumpweed (*Iva Annua*), maygrass (*Phalaris caroliniana*), knotweed (*Polygonum* sp.), purslane (*Portulaca*), and sunflower (*Helianthus*) (Chapman 1985). Another development is the introduction of fiber tempered pottery in the Atlantic coastal areas of Georgia and Florida, and the gulf coastal areas of Florida (Ford 1969). Also during this period is the development of ceremonialism reflected in [Exempted from Disclosure by Statute]

Exempted from
Disclosure by Statute

], Louisiana (around 1000–500 B.C.) (Ford and Webb 1956).

4.3 WOODLAND STAGE [900 B.C.–anno Domini (A.D.) 900]

The Woodland Stage represented the period between the hunting and gathering strategies of the Archaic Period people and the intensive agricultural focus of the Mississippian Period people. The first appearance of ceramics in the archaeological record was during the Woodland Stage. A change in projectile point form from a stemmed-point to a small stemless triangular point may indicate a use of the bow and arrow. There is a more intensive harvesting strategy in the procurement of herbaceous annuals and evidence of plant domestication. There is also a marked increase in the advent of ceremonialism associated with a burgeoning trade network, particularly with the Gulf Coast and the Midwest.

4.3.1 Early Woodland (900 B.C.–A.D. 200)

The Early Woodland Period marks the first appearance of ceramics in the Southeastern United States around 500 B.C. The pottery traditions developed from the fiber tempered pottery traditions of the Gulf and Atlantic coasts as well as some diffusion from the Middle Eastern tradition from areas to the north.

One of the phases typical of the Middle Eastern Tradition is the Swannanoa Phase found mainly in the Appalachian summit areas. Sites of the Swannanoa Phase are more intensively occupied than those in preceding periods. Rock-filled earth ovens are a common feature. Swannanoa ceramics are characterized by fabric and cord markings with the cord markings horizontal to the rim. This culture may be related to cultures from the Piedmont. Projectile points of the Swannanoa Phase consist of small-stemmed varieties (Keel 1976, Salo 1969).

In the Valley and Ridge Province there are two distinct phases in the Early Woodland Period. The Watts Bar Phase includes early Swannanoa ceramics with cord-marked and fabric varieties and tempered with crushed quartz. The Longbranch Phase exhibits limestone tempering which was a major technological breakthrough. The limestone tempering allowed less heat and a more controlled heat. This made the ceramics less breakable along the coil lines. The pottery made with limestone temper was more flexible and less breakable than the quartz tempered varieties. In projectile point technology, there was a change from a stemmed to a stemless triangular point in the Longbranch Phase (Salo 1969, McCollough and Faulkner 1973).

The Watts Bar and Longbranch Phases have large, intensively occupied sites. The Upper Tennessee River drainages have a high concentration of Early Woodland Sites. These sites exhibit a large number of storage pits, earth ovens, and burials (Davis 1990, Chapman 1985).

4.3.2 Middle Woodland (A.D. 200-600)

The Middle Woodland Period in the southeast is primarily characterized by the evidence of contact with the Middle to Upper Ohio Valley known as Scioto Hopewell, and the Illinois Valley known as the Hopewell. The Hopewell Culture was characterized by elaborate earthworks and high status tombs and mounds. These burial practices included the interment of the individual with a number of exotic grave goods. The Hopewell Interaction Sphere was an extensive trade network from Florida to New York and west to Kansas City. There is evidence of the accumulation of wealth in the form of exotic goods of southern derivation. Conch shells, sheet mica, alligator teeth, and shark's teeth can be found in the Midwest and Great Lakes area in sites dating to this period. In the southeast, prismatic blades of Flint Ridge chert, and copper from the Great Lakes area can be found along with pan pipes and effigy pipes (Chapman 1985).

The Middle Woodland Period in the Valley and Ridge Province of Tennessee is represented by the Candy Creek Phase. The Candy Creek Phase developed out of the Longbranch Phase of the Early Woodland Period and is characterized by limestone-tempered, check-stamped pottery (McCollough and Faulkner 1973). The [Exempted from Disclosure by Statute] Site in the Little Tennessee River Valley contained a significant Candy Creek Component. Both Candy Creek and sand tempered, simple-stamped Connestee ceramics from the Blue Ridge of North Carolina were

found along with some Hopewellian trade pottery. There were no storage pits or earth ovens and the post-holes exhibited no particular pattern. There were no burial mounds within the site area but cut sheet mica and prismatic blades of Flint Ridge chert were found. The site may have served as a trading center between the Ohio Valley and the Blue Ridge (Chapman 1977, 1985).

4.3.3 Late Woodland (A.D. 600–900)

The Late Woodland Period is distinguished by the disappearance of the Hopewell Interaction Sphere. In the Valley and Ridge Province of Tennessee the Late Woodland Period is characterized by the Hamilton Culture, first described by Lewis and Kneberg at Hiwassee Island (Lewis and Kneberg 1946). The Hamilton Culture is associated with the construction of burial mounds in the Valley and Ridge Province of Tennessee. There are a number of superimposed burials in the Hamilton Culture burial mounds. The habitation sites are removed from the burial sites. The habitation sites have shell middens which are mostly derived from river mussels. This pattern was also described at ^[Exempted from Disclosure by Statute] (McCollough and Faulkner 1973). Another Hamilton trait is the predominance of cord-marked ceramics in comparison to the Candy Creek–Connestee stamped ceramics (Salo 1969, Lewis and Kneberg 1941).

4.4 MISSISSIPPIAN STAGE (A.D. 900–1600)

The Mississippian Stage is characterized in the southeastern United States and the Valley and Ridge Province of Tennessee by a number of developments:

- The construction of earthen platform mounds on which temples, council buildings, and residences for the elite were built.
- The arrangement of mounds and individual household structures around open plazas.
- Increased population and more stable settlements than in the preceding Woodland Period.
- The emergence of organized chiefdoms.
- Increased territoriality and warfare.
- Elaborate and well-developed ceremonialism.
- A dependence upon new and improved strains of corn and the introduction of beans.

- Morphological changes in ceramics and a florescence in ceramic styles (Chapman 1985).

The evidence for the ranked societies is first seen in the community patterns. Residential areas were ranked as to the size and positioning of structures in relation to the plaza complex. The massive constructions were more intensively and occupied for a shorter duration in time than Hopewellian sites. The ranked position of an individual in a Mississippian society was a matter of ascription and kinship. The location of residences, ornamentation, and other properties document the position of a person or family in the society. The burial of the dead was important in documenting rank by observing the position of the burial and the location of the buried (e.g., inside or outside the plaza complex). Important people were buried with status artifacts within or near the plaza complex (Chapman 1985).

There was a change in house type from the Woodland period. The wall-trenched house was popular during the Mississippian Period. These houses consisted of cut saplings placed in foundation trenches and pulled over at the top to form a roof superstructure. Walls were woven with cut branches, covered with clay (wattle and daub), and the roof covered with grass or bark. In contrast, Middle and Late Woodland houses were temporary structures without wall trenches. The Mississippian houses were generally more permanent, had a central hearth, sleeping benches, and a gable pitched roof. In this period there was also a diversification of structures with summer houses, winter houses, storage houses and ceremonial houses (Lewis and Kneberg 1946, Polhemus 1985).

The art style of the Mississippian stage functioned in a ceremonial context and may have been derived from Mesoamerica. Serpents, dancing warriors, maices, feathered serpents (Quetzalcoatl), hand and eye, and skull and cross-bones were popular motifs, particularly on the numerous shell gorgets found in Mississippian burials. The ceremonial context in the Mississippian period is believed to be a part of rites of intensification, calendrical rituals with specific time iconography. For example, the Green Corn Ceremony, or Busk celebration of life (new corn), during the summer months was an important event that was practiced well into the Historic Period (Lewis and Kneberg 1958, Chapman 1985).

There was an intensification of agriculture during the Mississippian Period. Maize (*Zea mays*) is found extensively in Mississippian sites. A variety of corn known as northern flint is found. This corn type is drought and frost resistant. Griffin (1967) suggested that agriculture was practiced with hoes used to break up the ground. There was continuous cultivation of plots. Small hills were made by hoes for cone mounds or corn rows. Floodplains in the Mississippi and Tennessee River Valleys were intensively exploited for corn production (Smith 1978). Beans

were also added to the diet. This advent added balance to the Mississippian diet, combining complementary carbohydrates (corn) and protein (beans). The agricultural diet may have been detrimental to many Mississippian societies as suggested by a high incidence of osteoporosis, dental caries, and other bone pathologies (Larsen 1982, Chapman 1985).

The pottery and ceramic types are also a distinct marker for the Mississippian period. The Mississippian Period witnessed the development of shell-tempered wares. This innovation helped the prehistoric potter manufacture vessels of thinner construction than the preceding grit, crushed-quartz, or limestone-tempered wares because shell could be crushed into a finer form. Handles appear on the vessels and become highly decorated. Pottery became thin-walled and assumed new and unique shapes. Also, a slab technique of construction rather than the traditional coil technique was used to form the pottery. Effigy vessels appear more frequently and negative painting, slip formations, and red dye are more common (Lewis and Kneberg 1941, 1946, Chapman 1985).

4.4.1 Martin Farm Phase (A.D. 900–1000)

The Martin Farm Phase represents the emergent Mississippian Culture in the Valley and Ridge Province. The [Exempted from Disclosure by Statute] is one of 42 Early Mississippian Sites in the Tellico reservoir. Most of these sites were located on the first alluvial terrace and consisted of small settlements of limited extent. Plant remains were dominated by hickory, small amounts of acorn and walnut shells, and maize of the 8 and 10 row varieties. Seeds or fruits are represented by smartweed and chenopodium. The ceramic assemblages were dominated by limestone-tempered plain, limestone tempered cord-marked and shell-tempered plain ceramics. Limestone-tempered loop handles are located exclusively with this component. Lithic assemblages consist of Knox black and black-banded chert and small triangular Hamilton, Madison, and incurvate base/straight blade types. Maize is comparatively abundant. Most other known cultigens such as squash, gourd, chenopod, sunflower, smartweed, and sumpweed are associated with the Martin Farm Phase. Neither amaranth or domestic bean was identified. Faunal remains included deer, raccoon, squirrel, beaver, turkey, mollusk, turtle, and suckers. Bear and passenger pigeon were rare. Structures consisted of wall trench and single post wall construction (Schroedl et al. 1985). The earliest Mississippian Platform Mound was found at [Exempted from Disclosure by Statute] and measured only 16 m (50 ft) in diameter (Schroedl et al. 1985).

4.4.2 Hiwassee Island Phase (A.D. 1000–1300)

The Hiwassee Island Phase represents a mixed economy of agriculture plus hunting and collecting. Settlements were planned in relation to the community center. Dwellings were closely spaced around an open court. There was some attempt to elevate the more important community structures. Some settlements were encircled by a stockade. Houses were constructed

of small saplings set in narrow trenches. Projectile points were small to medium in size and triangular with stems. Ceramics were manufactured with a crushed limestone temper. Most vessels were plain with few cord-marked and fabric-impressed wares (Lewis and Kneberg 1941).

4.4.3 Dallas Phase (A.D. 1300–1600)

The Dallas Phase is represented in the Valley and Ridge Province by the archaeological sites of Citico, Toqua, and Bussell Island in the Little Tennessee River Valley and on Hiwassee Island in the Hiwassee River Valley. This Phase of the Mississippian Stage represents the zenith of the Mississippian culture in this region. The community plan was a stockaded village type with dwellings adjacent to a prominently located community center which was raised on a platform mound. The dead were buried around the houses or in the sides or summits of the substructure mounds. The bodies were generally laid in a flexed position on the side. Large quantities of grave goods were usually found including ceramics, shell, and copper artifacts. The ceramics were manufactured with a crushed mussel shell temper with cord marking and fabric impressions dominant. Objects made of shell were of the highest caliber. Conch shells were believed to be used for the black drink ceremony and shell disks made from *Busycon perversum* were intricately engraved and worn around the neck. Projectile points were small and triangular. The burials showed that cranial deformation was present and that males were a bit under 1.8 m (6 ft) tall (Lewis and Kneberg 1941).

One of the prototypical Dallas Phase archaeological sites was the [Exempted from Disclosure by Statute] in the Little Tennessee River Valley. Toqua covered about 1.9 ha (4.8 acres) and had an estimated population of 250 to 300 persons. The site was surrounded by a clay covered palisade of single, set post construction. The skeletal analyses of the burials at [Exempted from Disclosure by Statute] revealed that the mean height for males was 1.7 m (5 ft 6 in.) and for females 1.6 m (5 ft 2 in.). There was a high infant mortality rate. The population was under nutritional stress and suffered particularly from iron deficiency anemia. *Cribra orbitalia* and *porotia hyperostosis* (bone diseases related to malnutrition) have been linked to intense maize consumption and insufficient access to protein-rich foodstuffs. Evidence of cranial deformation by flattening of the forehead and occipital areas of the skull were found [Exempted from Disclosure by Statute] (Chapman 1985).

[Exempted from Disclosure by Statute] between Mound A and Mound B, had a central plaza surfaced with pebbles. The individual residences of the Dallas peoples were located elsewhere. Each house had 36 m² (400 ft²) of living space. The interior was composed of a public area around a central clay hearth, four main roof supports, and a series of beds or benches between the supports and the wall. The deceased household members were buried within or close to their residence, frequently beneath their sleeping bench (Chapman 1985).

Historically, the Dallas people may have had contact with early Spanish explorers in the 16th century. Hernando DeSoto arrived at Bussell Island in 1540 prior to his visit to the chief political center of the Dallas peoples at Coosa (Georgia). Between 1566-1568, Captain Juan Pardo led two expeditions into East Tennessee. These expeditions came within a day's travel of Bussell Island and there is evidence that he stayed at Citico. The result of these expeditions may have introduced diseases into the southeast which diminished the Dallas society population (Chapman 1985).

4.5 OVERHILL CHEROKEE STAGE (A.D. 1600-1819)

At their peak, the Cherokee covered some 104,000 km² (40,000 mile²) in parts of West Virginia, Virginia, North Carolina, South Carolina, Georgia, Alabama, Tennessee, and Kentucky. The Cherokee of the Valley and Ridge Province were known as the Overhill Cherokee because of their location west of the Blue Ridge or over the hills (Chapman 1985).

It is possible that the Overhill Cherokee were recent arrivals in the Valley and Ridge Province and were not the descendants of the preceding Dallas peoples. The evidence for this discontinuity is reflected in the change in place names and leaders from Cherokee to Muskhogean as Juan Pardo entered the Great Valley. Discrepancies between Dallas peoples and Cherokee peoples dental patterns from the skeletal record show the two populations were significantly different. The Cherokee may have moved westward following the decline of the Dallas people caused by disease. According to maps, by 1730 only the villages of Tanasee, Citico, Talassee, and Coosaw were present. A map, drafted in 1762 by Henry Timberlake, shows the number of villages grew with the towns of Chota, Toqua, Tomotley, Tuskegee, and Mialoquo represented (Chapman 1985).

Trade with the South Carolina colony for deerskins, which were used in military uniforms, was lucrative. Export figures for 1707 show 50,000 hides exported annually. In return, the Cherokee received firearms, ammunition, iron axes, knives, hoes, and an assortment of glass beads, mirrors, clothing, and rum (Chapman 1985). These items tend to show up in the archaeological record for excavated towns of Overhill Cherokee origin with lithic projectile points replaced by iron and glass beads commonly occurring in burials (Baden 1983, Schroedl 1986). Their diet was supplemented by the introduction of cattle, swine, and chicken to the traditional meat sources of deer and bear. Peaches became a part of the diet according to botanical remains as a supplement to maize, squash, beans, hickory nuts, acorns, walnuts, and hazelnuts (Schroedl 1986).

Schroedl summarizes the Overhill Cherokee sites in the Little Tennessee River Valley:

"The Overhill Cherokee villages of Citico, Chota-Tanasee, Toqua, Tomotley, and Mialoquo were[
Exempted from Disclosure by Statute], where the river valley is comparatively broad and the topography consists of gently rolling alluvial sediments with broad, level terrace surfaces. The villages were 1–2 miles apart and each included a townhouse (the Mialoquo townhouse is not recorded in historic documents) and up to 60 houses. The council house and most dwellings occupied the second river terrace, with a few houses, particularly at larger villages like Chota and Citico, located on the first river terrace. Houses were widely dispersed so that each was surrounded by land sufficient for agricultural activities. Outlying village households may have been 1,000–2,000 ft from the village council house and plaza area" (Schroedl 1986).

Townhouse structures were an important part of the Cherokee village. These buildings were circular or octangular and contained four or eight roof supports. Most of the surrounding dwellings were found in summer/winter pairs. Winter houses were circular with four roof supports and a central hearth while summer houses were square or rectangular and often had associated burials (Baden 1983, Schroedl 1986). The burials were single primary inhumations, partially flexed, and located near or within dwellings (Schroedl 1986).

4.6 HISTORIC EURO-AMERICAN STAGE (A.D. 1600–1942)

The beginnings of the Euro-American Stage were represented by the explorations of DeSoto and Pardo in the 16th century. One of the first recorded trips by a European through what is now Roane County was by Christopher Fisher in 1760 who came in contact with the Cherokee. Colonel John Donelson passed through Roane County on his voyage down the Tennessee River in the ship *Adventure* on his way to settle present-day Nashville. On March 5, 1780, his flotilla reached the mouth of the Clinch River near present-day Kingston. Captain Blackmore had also traveled from Fort Blackmore in Virginia down the Clinch River to its mouth (Roberts 1968).

The settlement by Europeans followed the establishment of Campbell's Station in 1787 and the building of a road that extended from Campbell's Station through Roane County to the Cumberland settlement. The majority of the first European inhabitants were English, Scotch, and Irish settlers with a few Dutch and Swedish settlers who had pushed south from Pennsylvania through the Cumberland Gap. Land grants were given to many Revolutionary War soldiers, some of whom had fought at the Battle of King's Mountain in South Carolina. Fort Southwest Point was established by General John Sevier at the confluence of the Tennessee and Clinch

rivers November 30, 1792 to offset the Cherokee resistance. In 1798 a treaty with the Cherokees opened up new territories for settlement. In 1799 the state legislature passed an act establishing the town of Kingston near Southwest Point. Roane County was established in 1801 and was named in honor of Governor Archibald Roane. At the turn of the century a Revolutionary War soldier, Nicholas Nail, settled on the East Fork of Poplar Creek. In 1805 the Treaty of Tellico, made with the Cherokee, ceded lands around Southwest Point. In 1807 William Gardenshire, the son-in-law of Nicholas Nail, purchased 1,200 ha (3,000 acres) in the area of the present day Wheat community (Roberts 1968, Robinson 1950, Hope 1987).

A number of developments affected Roane County in the 19th century. In 1796, a grist mill was built on the East Fork of Poplar Creek. An intensive period of lumbering continued for many years. The area known as Bald Hill, so named because all of the timber had been removed, would later become the Wheat Community (Hope 1987). On May 6, 1861 Roane County officials voted decidedly against seceding from the United States. Colonel Robert King Byrd of Roane County commanded the first Union Regiment of Tennessee at Camp Dick Robinson, Kentucky in August 1861. The 5th U.S. Regiment, Tennessee Infantry originally led by James T. Shelley contained many representatives from Roane County. Confederate representatives from Roane County included the 43rd Tennessee Regiment under Colonel J. W. Gillispie, the 36th Tennessee Regiment under Colonel R. G. Fain, and the 26th Tennessee Regiment under Colonel John M. Lillard (Roberts 1968).

The renowned Roane College was established at Bald Hill, which became part of the Wheat community in 1876. The Wheat community was named for its first postmaster, Frank Wheat. The "loud" school (so named because lessons were recited orally in unison by the students) was established in the community by Reverend John P. Dickey, a Methodist minister. Poplar Creek Seminary was founded in 1877 by Reverend W. H. Crawford of the Cumberland Presbyterian Church. Dr. C. W. Butler later followed Reverend Crawford as a teacher in the seminary. Dr. Butler was a Presbyterian minister as well as a physician and a Princeton graduate. In 1879, George Jones, a Baptist minister of the Mt. Zion Baptist Church, later renamed George Jones Memorial Baptist Church, gave the seminary 80 ha (200 acres) which surrounded the 1.6-ha (4-acre) plot owned by the Baptist Church. The deed contained the stipulation that any person who housed a student from the school could build and enjoy full use of 0.4-ha (1-acre) lots. In 1886 Poplar Creek Seminary was chartered by the state of Tennessee as Roane College. Roane College ended with the development of Wheat High School in 1908. The Board of Trustees continued to control the property until 1916 when it was transferred to the Roane County Board of Education. Wheat High School was demolished in 1950 (Robinson 1950; Roberts 1968; Moneymaker 1979).

The area that now comprises the K-25 Gaseous Diffusion Plant in Roane County was owned by Elias Roberts. It is believed that Elias and his wife Rebecca arrived from South Carolina in 1794. He purchased 200 ha (500 acres), divided by the waters of Big Poplar Creek, from Stockly Donelson who happened to be Andrew Jackson's brother-in-law. The land deed was filed June 4, 1799 (Roberts 1968, Hope 1987). In the fall of 1942, the United States Government purchased around 22,400 ha (56,000 acres) of land in East Tennessee in Anderson and Roane Counties (Plate 2). The Wheat community became the easternmost part of the K-25 Site area.

5. FIELD AND LABORATORY PROCEDURES

5.1 FIELD METHODS

5.1.1 Field Survey

The archaeological field survey was conducted in the areas shown in Figure 1.1, outside the K-25 Site fenced area. These included:

- the K-700 Power Plant Complex area between Clinch River, Poplar Creek, and Highway 58;
- the northwest sector from the intersection of Blair Road and Highway 58 to the K-25 security fence;
- the flatlands between Bear Creek Road and Highway 58 from Blair Road west to the Clinch River;
- the area east of Blair Road and north of Highway 58 east to the east side of McKinney Ridge and north to East Fork Poplar Creek; and
- the North bank of Poplar Creek and west of Blair Road north to the boundary of the DOE ORR and west to the Clinch River.

The state archaeological site records were searched at the Division of Archaeology, Department of Environment and Conservation in Nashville, Tennessee and at the archives of the McClung Museum at UT, Knoxville. All archaeological sites that had been previously recorded by other reconnaissance surveys were visited on foot by the author and members of the Energy Systems staff. Notes and photographs were taken to assess the present condition of these cultural resources. A number of archaeological sites could only be reached by a boat navigated along Poplar Creek and the Clinch River.

A survey of the former Wheat community was conducted to assess the condition of the remains of structures recorded by a previous survey performed by George Fielder (1975). The structures were located and their condition was noted. A number of different resources were used to locate the structures.

- Pre-WWII U.S. Geological Survey 7.5' (1:24,000) quadrangle maps of the Elverton (1941) and Bethel Valley (1941) quadrangle maps which show extant structures.
- U.S. War Department Final Land Acquisition Maps (1943) showing properties and landowners for ORR
- a 1942 aerial photo mosaic of the K-25 area.
- a soil survey for Roane County (Swann et al. 1942) which shows a number of pre-WWII buildings.

The survey also incorporated all known cemeteries in the area. These were visited on foot and their condition was noted.

5.1.2 Deep Testing

Two of the archaeological sites were subjected to deep testing using a 8.9-cm (3.5-in.) bucket mud auger to a maximum depth of 2 m (6.6 ft). Soil and sediment samples were described and soil horizons were determined according to procedures outlined in the *U.S. Department of Agriculture Soil Survey Manual* (Soil Survey Staff 1984).

5.2 LABORATORY METHODS

No artifactual material was collected and no soil samples were analyzed from the field.

6. RESULTS

6.1 PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

The archaeological sites which have been recorded within the study area are presented in Figure 6.1.

6.1.1 40RE109, [Exempted from Disclosure by Statute]

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] (Fielder 1974).

Previous Investigations. The site had been under cultivation when recorded by Nash in 1941. His survey revealed a flat topped mound $37 \times 30 \times 2$ m ($120 \times 100 \times 6$ ft). Fielder's 1974 survey showed that the area had been cleared, graded, plowed, and planted with pine seedlings. The site was subjected to surface collection and a series of test pits were excavated to determine any stratigraphy. Artifacts were recovered to the depth of the water table [about 1.5 m (5 ft)]. Artifacts recovered from Area A included a number of diagnostic projectile points that revealed a multicomponent site with Early and Late Archaic and Late Woodland Period components. Area B contained Middle Archaic, Early and Late Woodland period artifacts; however, no cultural material was recovered below the plowzone. Fielder's survey recommended further excavation if any construction activities were proposed for this area (Fielder 1974).

Current Investigations. The site was visited by the Jacobs ER Team March 23, 1994. The site [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] Concentrations of fire-cracked rock and chert flakes were noted on the beach area of the site. The lithic materials were primarily a translucent gray material similar to chert associated with the St. Louis Formation from the Highland Rim west of the area. One Early Archaic Period Kirk side-notched projectile point was observed from the beach near Area A. The projectile point was photographed, but was not located during the return trip. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] The area is now well-wooded with secondary growth vegetation. Signs of a nearby beaver colony are apparent in the gnawed trunks and branches that cover the area.

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

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

Soil Profile Descriptions. On April 13, 1994 two deep soil tests were performed, one in Area A and one in Area B.

Site: 40RE109b

Date: 4/13/94

Native Vegetation: Sweet gum, red maple, and other riparian species.

Parent Material: Alluvium

Physiography: Levee or bench east of slough of 40RE109a levee

Elevation: [Exempted from Disclosure by Statute]

Slope: Nearly level

Drainage Class (est): Well Drained

Groundwater: 65 cm (26 in)

Horizon	Description
Ap	0-27 cm; 10YR 3/3 moist, common medium distinct mottles 10YR 5/6; silt loam texture; moderate medium granular structure; clear smooth boundary; friable moist consistence; very few rounded chert gravels; common medium and fine roots.
BA	27-47 cm; 10YR 4/3 moist; silt loam texture; weak medium subangular blocky structure; clear smooth boundary; friable moist consistence; very few rounded chert gravels; common medium and fine roots.
Bw	47-65 cm; 10YR 5/4 moist; very fine sandy loam texture; weak medium subangular blocky structure; clear smooth boundary; friable moist consistence; common fine roots.
2Bt1b	65-92 cm; 7.5YR 5/6 moist; clay loam texture; moderate medium subangular blocky structure; clear smooth boundary; firm moist consistence; thin continuous clay coatings; few fine roots; common fine manganese nodules.
2Bt2b	92-110 cm; 7.5YR 5/6 moist; clay texture; weak coarse subangular blocky structure; firm moist consistence; thin discontinuous clay skins; no roots; common fine manganese nodules.

Additional Notes: The site seems to be on a Pleistocene Age terrace with about 65 cm (26 in) of Holocene material based on the development of the soil morphology. There were no buried A horizons encountered. It would seem that artifacts are restricted to the surface; not much chance of any buried archaeological sites here.

Ap = A horizon, plowed

Ba = mixture of B and A horizons, with the B horizon dominating

Bw = B horizon with a developed color or structure

2Bt1b = B horizon with an accumulation of silicate clay and with buried genetic horizons and pedological discontinuity

2Bt2b = B horizon with an accumulation of silicate clay and with buried genetic horizons and pedological discontinuity

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

Site: 40RE109a

Date 4/13/94

Native Vegetation: Sweetgum, red maple, brambles

Parent Material: Alluvium

Physiography: Levee (T1 or T2)

Elevation: [Exempted from
Disclosure by
Statute]

Slope: Nearly level

Drainage Class (est.): Well-drained

Groundwater: 65 cm (26 in.) below surface

Horizon	Description
Ap	0-10 cm; 10YR 3/3 moist; silt loam texture; moderate medium granular structure; abrupt smooth boundary; friable moist consistence; common coarse, medium, fine and very fine roots.
Bw	10-19 cm; 10YR 4/4 moist; fine sandy loam texture; weak medium subangular blocky structure; abrupt smooth boundary; friable moist consistence; common medium and fine roots.
2Ab	19-36 cm; 10YR 3/2 moist; silty clay loam texture; weak medium subangular blocky structure; clear smooth boundary; friable moist consistence; common medium and fine roots.
2BAb	36-54 cm; 10YR 4/3 moist silty clay loam texture; weak medium subangular blocky structure; clear smooth boundary; friable moist consistence; common fine roots.
2Btb	54-82 cm; 10YR 4/4; clay loam texture; moderate medium subangular blocky structure; clear smooth boundary; friable moist consistence; few thin discontinuous clay skins; few fine roots.
3Ab	82-134 cm; 10YR 4/3; clay loam texture; weak medium subangular blocky structure; clear smooth boundary; friable moist consistence; few medium manganese nodules; clay skins are likely present but are obscured by the extreme wetness.
3Btb	134-170+ cm; 7.5YR 4/6 moist; fine sandy clay loam texture; weak medium subangular blocky to structureless massive structure; firm moist consistence; common fine manganese nodules; no clay skins noted.

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

Horizon	Description
Additional Notes:	The site is located[Exempted from Disclosure by Statute] Some overburden exists over a buried soil at around 19 cm (7.4 in.) below the surface. The water table is high because the area is about 43 cm (17 in.) above normal in rainfall. A huge storm occurred last night. There is free water at 65 cm (25 in.) and no sign of low chroma mottles. There seems to be two buried soils here, one at 19 cm (7.4 in.) and one at 82 cm (32 in.). The lower portion of the unit is similar to the Cannon Bend Early Holocene material from Middle Tennessee. A Kirk point was found on the last visit.

Ap = A horizon, plowed

Bw = B horizon with a developed color or structure

2Ab = Buried A horizon, pedologic discontinuity

2BAb = Buried transitional horizon

2Btb = Buried Argillic horizon

3Ab = Buried A horizon, pedologic discontinuity

3Btb = Buried Argillic horizon

Recommendations. [Exempted from Disclosure by Statute] (40RE109) has the potential to produce a deeply stratified archaeological context. The presence of buried soils and the possibility of cultural materials that could date from the Early Archaic Period make this an important archaeological site. It is recommended that further excavations be performed before any construction is planned for the area.

6.1.2 40RE110,[Exempted from Disclosure by Statute]

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Previous Investigations. The site was originally recorded by Nash in 1941. He reported two eroded mounds and a village unit[Exempted from Disclosure by Statute]
Fielder surveyed[Exempted from Disclosure by Statute] in 1974[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] A projectile point and a pitted cobble indicated a Woodland Period site. The mounds recorded by Nash were not relocated (Fielder 1974).

Current Investigations. [Exempted from Disclosure by Statute] was visited April 13, 1994. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

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

[Exempted from Disclosure by Statute] Jacobs ER
Team members noted the site and recognized the rubble fill described by Fielder (1974). It was
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] The two mounds noted by Nash (1941) could not be
relocated.

Recommendations. The depth of the fill of riprap at this archaeological site should serve
to protect the original context. A visit to the site [Exempted from Disclosure by Statute] would be most
effective in evaluating its current condition. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] may help relocate the mounds reported
by Nash (1941) and should be implemented if management plans designate this area for
construction.

6.1.3 40RE111, [Exempted from Disclosure by Statute]

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Previous Investigations. The site was originally interpreted by Nash in 1941 as a small
village with no apparent depth of material. Fielder's 1974 survey located a site that was mostly
[Exempted from Disclosure by Statute] during the summer months. A surface collection strategy, [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] A deep testing procedure revealed a buried soil at around
40 cm (15.6 in.) below the surface that may have important archaeological implications. Fielder
noted a high concentration of fire-cracked rock [Exempted from Disclosure by Statute] which he interpreted as evidence of
a habitation site. The cultural material recovered represented Archaic and Woodland periods
(Fielder 1974).

Current Investigations. The site was visited by the Jacobs ER Team March 23, 1994.
The site consisted of [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] The site was well-wooded with secondary forest growth
consisting of red maple and sweet gum. The greatest concentration of fire-cracked rock, lithic
debitage (one piece of St. Louis Formation chert), and heat-treated chert was [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] are
a few artifacts consisting of fire-cracked rock and lithic debitage [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] A red residual limestone soil was exposed on [Exempted from Disclosure by Statute] indicating

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

that there is little chance of buried archaeology on [Exempted from Disclosure by Statute] It is similar to the pedon described at 40RE109b. [Exempted from Disclosure by Statute] on the other hand, exhibits a rather dense cultural deposit and the possibility that a buried cultural unit is here, based on the pedon described at 40RE109a. The fire-cracked rock concentration does seem to indicate that there are sizable habitation sites here. This is consistent with the findings of Nash (1941) and Fielder (1974).

Recommendations. This archaeological site requires further testing and should be investigated with an emphasis on determining the vertical and spatial components that exist in this site should management plans call for any construction in the area.

6.1.4 40RE126, [Exempted from Disclosure by Statute]

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Previous Investigations. The site was investigated by Fielder in 1974. During the [Exempted from Disclosure by Statute]

] and conduct an intensive surface collection. A total of 243 artifacts were recovered and 6 fire-reddened areas were located on a sterile clay surface. There did not seem to be any great depth to this site [Exempted from Disclosure by Statute] before the fire-reddened areas could be mapped. The artifact assemblage contained artifacts representative of the Early Archaic, Late Archaic, Middle Woodland, Late Woodland, Mississippian, and possibly Paleo-Indian Periods. Lithic artifacts were recovered but no ceramics or fire-cracked rock were collected. It was not believed that there was any depth to the site and that erosion served to mix these cultural units together. It was recommended that the fire-reddened areas be investigated [Exempted from Disclosure by Statute] to evaluate the potential living-surfaces that may be represented (Fielder 1974).

Current Investigations. [Exempted from Disclosure by Statute] was visited by Jacobs ER Team members in March 1994. [Exempted from Disclosure by Statute] was examined and a

number of fire-reddened areas were observed. There was a modicum of fire-cracked rock on the surface and a few pieces of lithic debitage were noted. [Exempted from Disclosure by Statute]

] was visited by boat March 23, 1994. The area is devoid of vegetation and a single osprey roost is the only landscape feature visible. An attempt [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] but no evidence of cultural material could be observed [Exempted from Disclosure by Statute]

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

Recommendations. It is recommended that the fire-reddened areas [Exempted from Disclosure by Statute] be examined during the fall-winter [Exempted from Disclosure by Statute].] Continued [Exempted from Disclosure by Statute] may serve to further erode the evidence of human occupation at this site. Further testing will be required to establish significance.

6.1.5 40RE127

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Previous Investigations. The site was examined by Fielder in 1974. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute].] Three artifacts were recovered but no cultural affiliation was determined (Fielder 1974).

Current Investigations. The site was visited by Jacobs ER Team members March 23, 1994. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] A few pieces of heat-treated chert and some fire-cracked rock were noted [Exempted from Disclosure by Statute] A soil profile was exposed on [Exempted from Disclosure by Statute] and showed about 35 cm (13.6 in.) of recent alluvium that covers an older terrace alluvium. It is believed that the site is located on this old terrace surface and subsequent erosion is exposing the site and depositing the artifacts in the beach area. An older cherty residual soil was noted in a tree tip on [Exempted from Disclosure by Statute] This soil exhibited moderate structure and thin continuous clay skins coating the ped surfaces. There would probably be no archaeological context below 35 cm (13.6 in.) in this area.

Recommendations. No further work is required for this site.

6.1.6 40RE135

Location. 40RE135, [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Previous Investigations. The site was investigated by Fielder in 1974. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] One artifact was recovered and no cultural affiliation was assigned (Fielder 1974).

Current Investigations. 40RE135 was visited by Jacobs ER Team members April 13, 1994. [Exempted from Disclosure by Statute]

]and an alluvial soil was examined. The soil morphology reflected a soil of Pleistocene/Early Holocene age because of the reddened color and development of argillans on the ped faces. The subsoil exhibited a fragipan and no buried soils were noted in the profile.

Recommendations. No further work is required for this site.

6.1.7 40RE136

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Previous Investigations. Fielder investigated this site in 1974. The site consisted of an intact structure foundation that was heavily overgrown in honeysuckle and pine trees. It was believed that the site was the remnants of a possible mid-19th century barn with an associated hand dug well. The building plan was rectangular, divided into four separate units or cribs. The structure apparently had a drive-in shed attached to the west side of the structure with the driveway inclined from the south and supported by a limestone wall. The foundation was a continuous limestone fieldstone beneath the structural walls. The construction was unknown but believed to be horizontal log. The well on the site was hand dug and lined with fieldstones. The site was mapped in plan view (Fielder 1974).

Current Investigations. The Jacobs ER Team members tried on three different occasions to relocate this site. The area is heavily overgrown with pine trees and honeysuckle, but no evidence of a foundation could be found.

Recommendations. According to Fielder's report (1974) further work was recommended for this site and further work may be needed if the site can be located.

6.1.8 40RE138

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Previous Investigations. 40RE138 was reported by Fielder in 1975 as part of the Exxon Nuclear Facility Survey. Fielder noted that cultural material occurred [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] Cultural material was collected [Exempted from Disclosure by Statute] for about 500 m (1,640 ft). The possibility of stratigraphy was noted on the alluvial terrace. The

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cultural material represented artifacts from the Paleo-Indian; Early, Middle, and Late Archaic; Early and Late (Hamilton) Woodland, and Mississippian Periods (Fielder 1975).

Current Investigations. The site was visited by Jacobs ER Team members April 13, 1994. [

Exempted from Disclosure by Statute

No cultural material could be located.

Soil Profile Descriptions. A soil core was described by Jacobs ER Team members April 14, 1994.

Site: 40RE138

Date: 4/14/94

Native Vegetation: Sweet gum, red maple, and secondary growth

Parent Material: Alluvium

Physiography: [Exempted from Disclosure by Statute]

Elevation: [Exempted from Disclosure by Statute]

Drainage Class (est): Well-drained

Slope: Nearly level

Groundwater: Not evident

Horizon	Description
Ap	0-7 cm; 10YR 3/3 moist; silt loam texture; moderate medium granular structure; abrupt smooth boundary; friable moist consistence; common medium and fine roots; Few medium and fine pores.
BA	7-23 cm; 10YR 4/3 moist; silty clay loam texture; weak medium subangular blocky structure; clear smooth boundary; friable moist consistence; few medium and fine roots.
Bt1	23-82 cm; 7.5YR 4/6 moist; very fine sandy clay loam; weak medium subangular blocky structure; clear smooth boundary; friable moist consistence; few patchy discontinuous clay skins; few medium charcoal fragments; few fine mica flakes.
Bt2	82-109 cm; 7.5Yr 4/6 moist, few fine faint low chroma mottles of 10YR 7/2; fine sandy clay loam texture; weak medium subangular blocky structure; clear smooth boundary; friable moist consistence; few thin discontinuous clay skins; few fine mica flakes; low chroma mottles mainly in root and channel pores although no roots were noted.
Bt3	109-146 cm; 7.5 YR 4/6 moist; sandy clay loam texture; weak medium subangular blocky structure; clear smooth boundary; friable moist consistence; very few thin discontinuous clay skins; few fine mica flakes.

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Horizon	Description
BC	146-165+ cm; 7.5YR 5/8 moist; sandy clay loam texture; weak coarse subangular blocky structure; friable moist consistence; no noticeable clay skins; few fine mica flakes.

Additional Notes: The unit was located[Exempted from Disclosure by Statute]
downstream. A square unit that looks like an old architectural test unit. There was a test pit next to the reservoir. The unit is 2 by 2 m (6.6 by 6.6 ft) and oriented NW-SE, which is unusual for an archaeological test unit. No buried soils were noted. We hypothesized that all archaeology is likely restricted to the upper 23 cm (9.1 in.). Soil morphology at the base of the cove does not indicate an older terrace and archaeological materials may be represented below the depth of the core.

Ap = A horizon, plowed
BA = Transitional horizon
Btl = Argillic horizon
Bt2 = Argillic horizon
Bt3 = Argillic horizon
BC = Transitional horizon

Recommendations. Further testing including a more comprehensive deep testing procedure is recommended if management plans require construction in this area.

6.1.9 40RE202

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Previous Investigations. 40RE202 was investigated by Bentz in 1993. The site area was cleared of vegetation and topsoil before the survey was conducted. Two pieces of lithic debitage were recovered in the pedestrian survey. Subsurface features were not observed on the exposed surfaces. It was concluded that the site most likely existed on the present surface. No cultural affiliation was determined.

Current Investigations. 40RE202 was visited by Jacobs ER Team members April 14, 1994. The site has presently been stabilized by grass and the surface is no longer visible. There was no cultural material observed.

Recommendations. There is no further testing required for this site.

6.2 HISTORIC HOUSE SURVEY IN THE FORMER WHEAT COMMUNITY (40RE224)

An historic house survey in the former Wheat community was conducted by Fielder (1975). Fielder's investigation was based on Final Land Acquisition Ownership Maps compiled by the Corps of Engineers (U.S. War Department 1943) (Fig. 6.2) to determine land ownership prior to the Manhattan Project. Pre-WWII 7.5 minute series topographic quadrangle maps of the Elverton (1941) and Bethel Valley (1941) show structures that existed prior to the development of K-25. An additional land ownership map was located during the 1994 survey which showed land tracts with designated owners, structures, and functional designations for several of the structures (Fig. 6.3). The tracts and structures are compatible with the later maps but the tract numbering system is different. To be consistent, the structures will be referred to with the tract number designations as determined by Fielder (1975) with alternate tract and building numbers referenced as well (Fig. 6.4).

6.2.1 Tract 711

Location. Tract 711 [Exempted from Disclosure by Statute] (Fig. 6.2).

Ownership. Tract 711 comprised 56.1 ha (140.30 acres) and was purchased from [Exempted from Disclosure by Statute] March 30, 1943 by the Manhattan Project (U.S. War Department 1943).

6.2.1.1 Structure 711A

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. The structure was a dwelling owned by [Exempted from Disclosure by Statute] who sold property to the Manhattan Project March 30, 1943 (U.S. War Department 1943; Moneymaker 1995, personal communication).

Present Condition. The structure was surveyed March 30, 1994 by members of the Jacobs ER Team. The site was located in a secondary growth of vines and tulip poplars with copious brambles, spicebushes, and pines. The site is marked by a number of irises and daffodils. One brick, one old bed frame, and one piece of stoneware was all that remained of the site.

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

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

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

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

6.2.1.2 Structure 711B

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. The structure was a dwelling owned by [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] The property was sold to the Manhattan Project by [Exempted from Disclosure by Statute]
March 30, 1943 (U.S. War Department 1943; Moneymaker 1979; Moneymaker 1995, personal communication).

Present Condition. The house site was visited by Jacobs ER Team members March 14, 1994. The remains of the structure were found nestled in a cove [Exempted from Disclosure by Statute] of McKinney Ridge in a pine thicket. A few hewn limestone blocks in a levelled area cut into the side of the ridge is all that remains of the structure. Some rosebushes remain in the remnants of a yard. A spring is located directly southeast of the structure. A circular stone structure about 1 m (3.3 ft) in width can be found about 20 m (65.6 ft) southeast of the structure and may have been the remnants of a springhouse.

6.2.2 Tract 712

Location. Tract 712 is [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Ownership. This 9.4-ha (22.70-acre) lot was owned by [Exempted from Disclosure by Statute] prior to acquisition by the Manhattan Project. This tract is recorded as tract 712 on the Corps of Engineers Map (U.S. War Department 1943) and as tract 65 on the Tennessee Ext. Cooperative (1937) property map.

6.2.2.1 Structure 712A

Location. The structure [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. The structure was a dwelling owned by [Exempted from Disclosure by Statute] and sold to the Manhattan Project (U.S. War Department 1943; Moneymaker 1995, personal communication).

Present Condition. No structural remains could be identified.

6.2.2.2 Structure 712B

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. The structure was a shed owned by [Exempted from Disclosure by Statute] and sold to the Manhattan Project (U.S. War Department 1943; Moneymaker 1995, personal communication).

Present Condition. The site was visited by members of the Jacobs ER Team March 14, 1994. The site consists of a few dressed limestone blocks in a levelled area cut into the ridge. There is not much foundation left to determine the dimensions of the structure. There is considerable undergrowth. The ornamental lamb's ear is found on the south side of the site and lawn grass (fescue) is found on the north side.

6.2.2.3 Structure 712C

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. The structure was a grocery store owned by [Exempted from Disclosure by Statute] and sold to the Manhattan Project (U.S. War Department 1943; Moneymaker 1995, personal communication).

Present Condition. The site was visited by Jacobs ER Team members March 14, 1994. The remains of the structure consist of a few pieces of brick and some dressed limestone blocks. The area has been levelled and is currently overgrown with privet hedge and brambles.

6.2.2.4 Structure 712D

Location. The [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

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

History. "Next on that side of the road was the house I remember as the [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute] had lived there when he was Wheat Postmaster. It had six or seven rooms. After the [Exempted from Disclosure by Statute] children all finished school, some of them taught in the system and continued to live there. Their father tended the school farm several years before his death" (Moneymaker 1979:52).

Present Condition. A driveway with a short limestone retaining wall leads from the road north about 50 m (164 ft) to the site of the foundation. There is an excavated area where some remnant dressed limestone blocks that roughly delimit the foundation. The site is thick with daffodils. A well casing and a cistern are located about 10 m (32.8 ft) northeast of the foundation.

6.2.3 Tract 715

Location. Tract [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute]

Ownership. Tract 715 was a 0.8-ha (2-acre) lot purchased from [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute] by the Manhattan Project October 6, 1942 (U.S. War Department 1943).

6.2.3.1 Structure 715A

Location. [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute]

History. The church and property were acquired by the Manhattan Project on October 6, 1942.

Present Condition. A stone marker on a small tended plot locates the remains of the [Exempted from Disclosure by Statute] A retaining wall and [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute] are evident.

6.2.4 Tract 720

Location. Tract 720 [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute]

Ownership. The 84.4-ha (211-acre) tract was acquired from [Exempted from Disclosure by Statute] by the Manhattan Project February 23, 1943.

6.2.4.1 Structure 720A

Location. Structure 720A was not located on any map. Structure 720A consisted of a [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute]

History. The history of this structure is unknown.

Present Condition. The water tank is constructed of cast iron. It is a round structure roughly 28 m (92 ft) in circumference and about 4–5 m (13.1–16.4 ft) in height. It has a domed cap on top. Cast iron panels are about 1 m (3.3 ft) wide and rivetted on all sides. A ladder leading to the top is still intact, but the tank is currently empty and out of use. A round concrete pipe casing is located to the southwest of the water tank. This structure was most likely part of the Manhattan Project and serviced the K-25 Site to the west.

6.2.5 Tract 722

Location. This [Exempted from Disclosure by Statute]

Ownership. This tract consists of 2.1 ha (5.3 acres) acquired from [Exempted from Disclosure by Statute] by the Manhattan Project February 23, 1943.

6.2.5.1 Structure 722A

Location. This structure is located [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute]

History. This structure was a dwelling known as [Exempted from Disclosure by Statute] homeplace and was on property owned by [Exempted from Disclosure by Statute] (U.S. War Department 1943; Moneymaker 1995, personal communication).

Present Condition. This site was visited by Jacobs ER Team members March 30, 1994. The site is extensively disturbed. The structure is located in an area currently being cleared of pines due to pine bark beetle infestation. The site is covered with highway and bridge spoil

consisting of asphalt and concrete. A few pieces of dressed limestone blocks and a couple pieces of brick may be all that remains.

6.2.6 Tract 723

Location. This tract is located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Ownership. The tract consisted of 2.8 ha (7 acres) and was purchased[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]by the Manhattan Project April 5, 1943 (U.S. War Department 1943).

6.2.6.1 Structure 723A

Location. This structure was located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. "There was a four or five room house [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Present Condition. The site was visited by Jacobs ER Team members March 30, 1994. The site is evidenced by a few dressed limestone blocks. A limestone lined depression was found on the northwest side of the foundation that resembles a hand dug well. A cement staircase is located on the south side of the foundation [Exempted from Disclosure by Statute]
The site is located in an area clear-cut due to pine bark beetle infestation. A number of daffodils demarcate the former house.

6.2.6.2 Structure 723B

Location. The structure is located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History.[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]At this junction (second

] A concrete foundation was located along with a square hole and a rectangular trench lined with concrete. There were some decorative flagstones embedded in the concrete. A trench about 5 m (16.4 ft) long and 1 m (3.3 ft) wide was found on the west side of the foundation. A rutted road runs roughly northeast to southwest on the north end of the site. A fire hydrant is located about 25 m (82 ft) southwest of the foundation. The area has been cleared of pines due to the pine bark beetle infestation. A number of daffodils and two large white oaks mark the property. The structure may represent Manhattan Project construction over a pre-WWII structure.

Location.	This structure is located[Exempted from Disclosure by Statute
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Present Condition. The site was visited by Jacobs ER Team members March 30, 1994. The structure was located on a ridge about 50 m (164 ft) west of structure 723B. The structure consisted of a rectangular foundation about 7 m (23 ft) wide east to west and 5.5 m (18 ft) long north to south. The concrete foundation was divided into three roughly even sized sections oriented north to south. The poured concrete foundation contained cobble sized chert fragments. The concrete materials seem to indicate a Manhattan project structure and signs of a structure that pre-date this foundation are not evident. The site was in an area cleared of pines due to the pine bark beetle infestation. The usual signs of habitation such as daffodils are absent from this site.

6.2.7 Tract 724

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Ownership. The tract consisted of 11.2 ha (28.1 acres) purchased by the Manhattan Project from [Exempted from Disclosure by Statute] March 18, 1943 (U.S. War Department 1943).

6.2.7.1 Structure 724A

Location. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. The history for this structure was not determined.

Present Condition. The site was visited by Jacobs ER Team members March 30, 1994. The site is situated in an area cleared of pines due to the pine bark beetle infestation. No trace of the structure could be located. Fielder (1975) noted an old railroad bed which cut through the site of the structure, but could not be located.

6.2.8 Tract 725

Location. Tract 725 is located [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[]

Ownership. This tract consisted of 6 ha (15 acres) and was purchased by the Manhattan Project from [Exempted from Disclosure by Statute] May 7, 1943 (U.S. War Department 1943).

6.2.8.1 Structure 725A

Location. Structure 725A was located [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. [Exempted from Disclosure by Statute]
[(Exempted from Disclosure by Statute)]
[Exempted from Disclosure by Statute]

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

Present Condition. The site was visited by Jacobs ER Team members March 23 and 30, 1994. The site is located on a small knoll which is surrounded by hickories. The site exhibited a hand dug well, a little less than 1 m (3.3 ft) in diameter and lined with flaggy limestone slabs laid horizontally. A concrete pump station with associated water trough with iron hinges was located about 5 m (16.4 ft) east of the well. Some dressed limestone blocks about 11 m (36 ft) west of the well mark the foundation, however the extent is unknown. Some fragments of red brick, marbles, pieces of white ware, and a few pieces of shell can be found in the disturbed areas around the structure. The site is located in an area cleared of pines due to the pine bark beetle infestation.

6.2.9 Tract 726

Location. Tract 726 was located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Ownership. This tract consisted of 0.8 ha (2.1 acres) purchased by the Manhattan Project from[Exempted from Disclosure by Statute]

6.2.9.1 Structure 726A

Location. This structure was located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. This structure was a dwelling owned by[Exempted from Disclosure by Statute]
(Moneymaker 1995, personal communication).

Present Condition. The site was visited by Jacobs ER Team members March 30, 1994. The site was being cleared of pines due to the pine bark beetle infestation. There was no evidence of any structure at this location.

6.2.9.2 Structure 726B

Location. This structure was located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. This structure was a dwelling and a service station. [Exempted from Disclosure by Statute] lived there and managed the station (Moneymaker 1995, personal communication).

Present Condition. The site was visited by Jacobs ER Team members March 30, 1994. The area was being cleared of pines due to the pine bark beetle infestation. No structural remains were observed.

6.2.10 Tract 727

Location. Tract 727 is located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
]

Ownership. The tract consists of 4.4 ha (11.1 acres) purchased from[Exempted from Disclosure by Statute]
]by the Manhattan Project March 18, 1943 (U.S. War Department 1943).

6.2.10.1 Structure 727A

Location. The 727A structure is the George Jones Memorial Baptist Church located on the south side of McKinney Ridge and north of the Wheat-Gallaher Ferry Road. The church is located on the Bethel Valley quadrangle map (1941)[Exempted from Disclosure by Statute]

] The church is also located on the Tennessee Ext. Cooperative (1937) property map and listed as structure 76Ba, the George Jones Memorial Baptist Church (Figs. 6.3 and 6.4).

History. "After the new church was completed, the old Mount Zion Building was moved down the hill and across the road and became known as Wheat Post Office and Adams' General Store. B. H. Magill, born 1892, remembered seeing it being moved when he was 9 or 10 years old. He also recalls the lumber being sawed for the new church structure. Saturday, May 11, 1901, Mount Zion Baptist Church met in business session. The third item of business, moved and seconded, follows:

"We change the name of Mt. Zion to George Jones Memorial; 4. \$13.68 collection for Missions was taken; 5. Report of Building Committee was read, 'We the Building Committee report: The house [church] is complete and incumbrance at a cost of \$2,838.95 [George Jones gave 2,505.90] and is now ready to be dedicated to the service of the Lord and we now turn the House and Key in to the hands of the Church. This house is owned and controlled by the

members of this church but is opened for Services of evangelical Churches but no organization or Church ordinance shall be performed in this house except Missionary Baptist.' Building Committee: J. W. Arnold, George Jones, O. M. Roberts, Daniel Jones.

"On Sunday, May 12, 1901, the new building was dedicated. George Jones wrote his last Will and Testament on December 10, 1902, to endow (My Church) George Jones Memorial Missionary Baptist Church...with \$1,250.00 (Being in form of notes (1), (2), (3) payable January 1, 1906.

". . . to pay 1/3 of proceeds into Missions annually. . . a sum equal to any amount the members . . . pay . . . of current expenses, not to exceed 2/3 of the amount . . . provided always the members of (the) church pay 1/2 the current expenses of said church then the . . . Trustees . . . are directed to pay the entire \$1,250.00 to Missions" (Deed Book F, Vol. Z, p. 473-5).

"Excepted was the lot with house and barn, which was to be used as a Parsonage. Trustees were D. W. White, J. W. Arnold, M. H. Sellers. Sellers was appointed by Jones as executor. Witnesses: B. L. Peters of Jonesville, W. M. Meade and Dr. J. Blair Cross of Wheat.

"The Will was probated in the October 1903 term of County Court (Jones died October 15, 1903). The stipulations of the George Jones Will were carried out as given in *Estate Book J* (1897-1909), p. 258-65. The endowment eventually going to the cause of Missions. (Tennessee Baptist Foundation). The present Agency for Southern Missions was established in 1938. Any permanent fund created before that time would, of necessity, have been through other organizations. The beneficiary is believed to have been an Orphan home.

"In 1927, a survey was made to establish the Church Lines. The survey was made by W. E. Ellis (Roane County Surveyor); Committee: James L. McKinney, Carl A. Smith and Smith P. Sellers; Deacons: J. R. Arnold and M. H. Sellers" (Deed Book Z, p. 50) (Money maker 1979:75).

Money maker also noted that the name change from Mount Zion to George Jones Memorial Baptist Church was not changed at the courthouse (Money maker 1995, personal communication).

Present Condition. The site was visited by Jacobs ER Team members March 9, 1994. The George Jones Memorial Baptist Church sits on a hewn limestone foundation. Varying levels of English Bond coarses of brick overlie this foundation. The church is stone or brick construction covered by weatherboard. The weatherboard is oriented horizontally and painted white. A prominent steeple is located on the west side of the church, but no bell was observed.

The front door is sheeted with metal and usually padlocked. The structure has a tin roof, painted green. On the inside, the floor boards are oriented north to south. The church has a rectangular floor plan. The floor slants down to the north side (back) of the church to accommodate visibility of the front by the congregation. A raised pedestal is observed on the northeast side of the congregation area. A partition divides the room in the back of the church (south). A boarded-up staircase is located in the back room. The hallway entrance is on the west side and extends to the large front room. The church and adjoining cemetery are in excellent condition and are protected by a gate at the juncture of the former Wheat-Gallaher Ferry Road and Blair Road. The church is opened on the first Sunday in October for a reunion of the members of the former Wheat Community (Hope 1987:18) (Plates 8, 9, and 10).

6.2.10.2 Structure 727B

Location. This building

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

History. No history was determined for this structure.

Present Condition. The building was described by Fielder (1975:18) as a frame garage with vertical board and batten exterior covering in poor condition. The structure was visited by Jacobs ER Team members March 9, 1994. There was a levelled area in this location, but no structure was evident.

6.2.10.3 Structure 727C

Location. The structure was located

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

History. "Up the church driveway and around the side of the hill was a 'shack' of four or five rooms. If you continued north from there a short distance you came to

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

](MoneyMaker 1979:53).

Present Condition. The site was visited by Jacobs ER Team members March 14 and April 14, 1994. The site consists of a pit feature, rectangular in shape, about 5 m (16.4 ft) across and 7 m (23 ft) wide. An old decayed chestnut and a white oak tree cover the two north corners of the structure. There are hewn limestone blocks on the roadside and on the outside edges of the depression. The depression is approximately 1 m (3.3 ft) deep. Limestone blocks mark the corners of the depression and it is believed that this feature represents a root cellar with

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an associated structure that would have been situated on the corner limestone blocks. A set of rosebushes can be found on the western side of the depression.

6.2.11 Tract 728

Location. Tract 728[

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

Ownership. This tract consisted of 2.8 ha (7 acres) purchased by the Manhattan Project from[Exempted from Disclosure by Statute] May 7, 1943.

6.2.11.1 Structure 728A

Location. This structure is located[

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

History. No history was determined for this structure.

Present Condition. This site was visited by Jacobs ER Team members March 30, 1994. There was no remaining physical evidence of a structure.

6.2.12 Tract 729

Location. Tract 729 was located[

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

Ownership. This tract consisted of 13.3 ha (33.3 acres) purchased by the Manhattan Project from[Exempted from Disclosure by Statute] March 24, 1943 (U.S. War Department 1943).

6.2.12.1 Structure 729A

Location. This structure was located [

Exempted from Disclosure by Statute

Exempted from Disclosure by Statute

History. No history was determined for this structure.

Present Condition. The site was visited by Jacobs ER Team members March 30, 1994. The area was disturbed by the logging of pine due to the pine bark beetle infestation. Dressed limestone blocks were distributed across the disturbed surface. There were a number of brick

fragments and a significant concentration of mussel shell. There were no prehistoric artifacts in this area associated with the shell. The disturbance has moved one limestone block about 20 m (65.6 ft) from the original site location.

6.2.13 Tract 730

Location. Tract 730 was located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Ownership. This tract consisted of 100.9 ha (252.3 acres) and was purchased by the Manhattan Project from the[Exempted from Disclosure by Statute]March 24, 1943 (U.S. War Department 1943).[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

6.2.13.1 Structure 730A

Location. This structure, more commonly known as the Wheat School, is located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. "From 1850, when Robertson Schoolhouse was known to have been functioning, there was an educational institution in Wheat (earlier Bald Hill) except for a short period during and following hostilities of the Civil War. Robertson, Bald Hill, Poplar Creek Seminary, Roane College and Wheat High School existed over a period of at least 92 years, most likely more years. When the Wheat School System closed for Christmas Holidays in 1942 it did not reopen. Those students still in the area were bussed to Dyllis until all families moved from Wheat" (Moneymaker 1979:52).

"Something needs to be said about the Campus of Poplar Creek Seminary, Roane College and Wheat High School. The acreage, according to the government land acquisition of 1942 was 253.5 acres. About 100 acres was tillable. The remainder was wooded. As has been previously stated, one-half acre would be given to a person wishing to use it to build a house so students could attend school. Free lumber would be furnished with which to build or improve an existing house; fuel was free. Through the years, approximately 20-22 buildings were provided for student use. All of those living on this property had to have a member of the household connected with the school or be willing to provide housing for students. Buildings could be owned—not the land" (Moneymaker 1979:52).

"Poplar Creek Seminary and Roane College depended on the Schoolhouse Spring for water. Wheat High School had a Well. When water would get low in the Fall, going to the old Schoolhouse Spring was a treat. Two Elementary students could make an hour's trip of it, if they worked it just right. In the later years a well with electric pump and running water (including plumbing) were provided for the school. Before electricity was available the school had a Delco system for several years. There had been a furnace to heat the Wheat High School building from its beginning. Poplar Creek Seminary and Roane College was heated by stoves, first by wood and later by coal" (Moneymaker 1979:54).

"For several years after Wheat High School was built, basketball courts were in the open. Then a gym was built in the northwest corner of the present-day Turnpike and Blair Road. The Gym was on the second level; underneath was storage space for farm machinery used on the school property. Shop work was often done there under the supervision of the Agriculture Department of the school" (Moneymaker 1979:55).

"When additional class space and a Gym were added to the school building in 1927, the old gym building was used as a Fair Barn; the Wheat Community Fair became an annual County affair because of its variety. The Fair Barn was struck by lightning and burned. In the '30's a Fair Building was constructed near the previous gym site. At Fair time, poultry, rabbits, cattle, swine and other farm animals were shown. The garden produce and the women's Department were in the school proper" (Moneymaker 1979:55).

"There were, of course, the two school buildings previously mentioned. The Roane College building, already discussed, torn down soon after 1916. Wheat High School was a brick building housing all grades. Rapid growth soon made it quite evident the building was not sufficient. When the Girls' Dorm was completed, pressure was even greater on the existing facilities. There was great need for departmental space rather than the one room approach" (Moneymaker 1979:55).

"Between 1922-1927 many of the smaller schools of the area were consolidated with the Wheat School System, students were brought by bus. Those smaller schools, grades through 8th, that were not closed fed high school students into Wheat. The nearest County High Schools were Oliver Springs, Harriman and Kingston. So the territory using Wheat High School was large. The inpouring students were so many, plans were made for a large addition to the school, with updated remodeling to the existing building" (Moneymaker 1979:55).

"While plans and construction were underway, the enrollment increased with each year as consolidation continued. Rooms were partitioned off in the auditorium and many other stop-

gap methods were used. Some changes made in the existing building were locker room for male athletes, Home Economics and Agriculture Departments on the lower floor. On the second floor rearrangement of the classroom space, as well as female dressing room. The top floor kept the rooms already there, combining two for the Science Department. The old auditorium was converted into departmental space. The new addition had many classrooms, an auditorium-gym combination, a new heating system and the music section" (Moneymaker 1979:55)

Present Condition. The site was visited by Jacobs ER Team members March 14 and April 14, 1994. The Wheat School is presented photographically as it appeared in 1919 in P. A. Hope's (1987:17) publication. The building has since been razed. The site is now a concrete foundation surrounded by some rather sizable maple trees. The foundation is L shaped and is about 9 m (29.5 ft) long and 10 m (32.8 ft) wide. A concrete platform is located about 6 m (19.7 ft) southeast of the foundation and measures about 2 m (6.6 ft) wide and 2.5 m (8.2 ft) long. A number of daffodils mark the site.

6.2.13.2 Structures 730B and 730C

Location. These structures are located on the Bethel Valley quadrangle map (1941) to the south and adjacent to the Wheat School

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[Exempted from Disclosure by Statute

] Structure 730C is represented on the Tennessee Ext. Cooperative (1937) property map as structure 75Ba and is listed as a dormitory (Fig. 6.3 and 6.4).

History. "The Boarding House was for both sexes until 1920. As enrollment increased another dormitory was essential. Rufus Jones was contracted by the Roane County Board of Education to build a 25-room structure, with kitchen, dining room and four or five rooms for living quarters for the family of the Supervisor—often a widow with children to educate. Emma Smith and Zena Johnson are examples. This building was called the Girls' Dormitory" (Moneymaker 1979:54).

"Prices were kept low, as had been during Roane College days; both Dormitories, as well as the houses, were at minimum rates. It was possible to make arrangements to pay a portion of the fee with farm produce, both fresh and canned" (Moneymaker 1979:54).

"With time, progress and bussing, the two Dormitories were discontinued. Families would live in the Boys' Dorm; the Principal of the School moved to the Supervisor's living quarters in the Girls' Dorm because it was nearer the School. The kitchen and dining room were used in the Lunch-room program and a goodly part of the building was made into a Community

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Center. The Girls' Dorm building was used as apartments for several years after the government bought the property" (Moneymaker 1979:54-55).

Present Condition. The sites were visited by Jacobs ER Team members March 14, 1994. No structures could be located.

6.2.13.3 Structure 730D

Location. This structure is located
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Living quarters (five rooms) were added to the building. The original structure was used as a general store operated by [Exempted from Disclosure by Statute] family. The Wheat Post Office [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] The [Exempted from Disclosure by Statute] lived there from about 1900, when it was moved, until [Exempted from Disclosure by Statute] retired as Postmaster in 1939" (Moneymaker 1979:53).

Present Condition. The site was visited by Jacobs ER Team members March 14, 1994. The site consisted of a levelled, landscaped area suitable for a foundation. There were a few pieces of dressed limestone that littered the surface. The site is covered by a dense layer of privet hedge and brambles.

6.2.13.4 Structure 730E

Location. Structure 730E was located
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
History. [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] It is described in the [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

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for storage in later years but had served as 'batching' quarters with 2 room or 1 large one. [

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(Moneymaker 1979:52-53).

Present Condition. The site was visited March 14, 1994 by Jacobs ER Team members. The foundation could not be located. Pines were being cleared from the area due to the pine bark beetle infestation. A cistern was found in the general vicinity and a large, round metal casing was found on the downhill (south) side of the site. A few scattered brick fragments and some red clay tiles are probably all that remains of the structure.

6.2.13.5 Structure 730F

Location. Structure 730F was located on [

Exempted from Disclosure by Statute

[Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute]

[Exempted from
Disclosure by

History. [Exempted from Disclosure by Statute] house (next in line) was a two-story six-room house build
by [Exempted from Disclosure by Statute] His sister, [Exempted from Disclosure by Statute] lived with him. They were elderly but his
nieces lived with them to attend school. Later [Exempted from Disclosure by Statute] with three children to
educate, moved there and boarded other students desiring rooms. This is the dwelling usually
shown when ERDA (AEC) writes about the Wheat Community" (Moneymaker 1979:52).

Present Condition. The site was visited by Jacobs ER Team members March 14, 1994. Pines were being cleared from the area due to the pine beetle infestation. A large disturbed area is all that remains of the structure. A large elm tree marks one corner of the property. The area is heavily covered by kudzu vines. Some scattered pieces of coal and a well casing were found on the south side of the property. No evidence of a foundation was found on the south side of the property.

6.2.13.6 Structure 730G

Location. Structure 730G was located on [

Exempted from Disclosure by Statute

[Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute]

History. This structure was the parsonage for the George Jones Memorial Baptist Church. [Exempted from Disclosure by Statute] and his family lived there for a time. The family included his sons [Exempted from Disclosure by Statute] (Moneymaker 1995, personal communication).

Present Condition. The site was visited by Jacobs ER Team members March 14, 1994. The area has been completely cleared due to the pine bark beetle infestation and much of the ground surface has been disturbed. There was no foundation located. Items such as coal, blue glass, white ware, bricks, dressed limestone blocks, shoe leather, and medicine bottles were observed in the disturbed sections.

6.2.13.7 Structure 730H

Location. Structure 730H was [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. This structure was a dwelling known as [Exempted from Disclosure by Statute] However, the house was owned by [Exempted from Disclosure by Statute] (Moneymaker 1995, personal communication).

Present Condition. The site was visited by Jacobs ER Team members March 14, 1994. Pines were being cleared from the area due to pine bark beetle infestation. The remains of a foundation consisting of bricks and dressed limestone blocks were found. A considerable quantity of bottle glass, coal, and white ware were observed in the disturbed areas. Most of the site has been disturbed by the logging activities.

6.2.13.8 Structure 730I

Location. Structure 730I was [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. This structure was the home of the principal [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute] (Moneymaker 1995, personal communication).

Present Condition. The site was visited by Jacobs ER Team members March 14, 1994. Pines were being cleared due to the pine bark beetle infestation. The structure is represented by a levelled area with a few dressed limestone blocks in the middle of a thicket of privet hedge. A number of daffodils demarcate the site.

6.2.13.9 Structure 730J

Location. Structure 730J was located[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

History. “Approximately[Exempted from Disclosure by Statute]was the Boarding House. The 1886 Roane College catalogue says, ‘commodious houses for boarding are near the College.’ The 1902 catalogue says, ‘The boarding house will be under a suitable family.’ The Boarding House was not mentioned in the earlier booklet but was in 1902. It may be assumed it was built in the 1890’s. It was two-story frame building with 12–14 rooms which accommodated at least three or more students per room. There were living quarters for the ‘suitable’ family caring for the establishment. Beside that was a large Living Room for the use of the students; also, kitchen and dining room” (Moneymaker 1979:54).

“After the Girls’ Dorm was built, the Boarding House was referred to as the Boys’ Dorm. They came from the Boys’ Dorm, through the pasture, by the football field, across the small stream in the ‘little woods,’ behind the school building to the Girls’ Dorm for all meals. They could then remain for a social hour” (Moneymaker 1979:54).

“Prices were kept low, as had been during Roane College days; both Dormitories, as well as the houses, were at minimum rates. It was possible to make arrangements to pay a portion of the fee with farm produce, both fresh and canned” (Moneymaker 1979:54).

“With time, progress and bussing, the two Dormitories were discontinued. Families would live in the Boys’ Dorm; the Principal of the School moved to the Supervisor’s living quarters in the Girls’ Dorm because it was nearer the School. The kitchen and dining room were used in the Lunch-room program and a goodly part of the building was made into a Community Center. The Girls’ Dorm building was used as apartments for several years after the government bought the property” (Moneymaker 1979:54–55).

Present Condition. The site was visited by Jacobs ER Team members March 14, 1994. Pines were being cleared due to the pine bark beetle infestation. A few dressed limestone blocks, a partial wall of a foundation, and a couple of scattered bricks are all that remained from this structure. A large oak and a thicket of privet hedge mark the area.

6.2.14 Tract 771

Location. Tract 771 was [Exempted from
[Exempted from Disclosure by Statute]]

Ownership. This tract consisted of a 0.8-ha (2-acre) parcel purchased by the Manhattan Project from [Exempted from Disclosure by Statute] May 7, 1943 (U.S. War Department 1943).

Structures. No structures were located on this parcel.

6.2.15 Tract 773

Location. Tract 773 was located [Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]

Ownership. This tract consisted of 0.5 ha (1.2 acres) purchased by the Manhattan Project from [Exempted from Disclosure by Statute] July 3, 1943.

Structures. No structures were located on this parcel.

6.3 CEMETERIES

There are at least five cemeteries located in the K-25 Site survey area (Fig. 6.5). These include the [Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute] All of these cemeteries were treated as archaeological sites and assigned state site numbers.

6.3.1 [Exempted from Disclosure by Statute] (40RE222)

[E
X]

[Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute]

[Exempted from Disclosure by Statute] The property consisted of 217 ha (543 acres) and was purchased from [Exempted from Disclosure by Statute] by the Manhattan Project (U.S. War Department 1943).

The cemetery consists of a concrete wall enclosure about 23 by 23 m (75 by 75 ft) (Plate 11). A fenced area, about 17 by 20 m (55 by 65 ft) north of the cemetery contains at least one

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grave, perhaps more. The main cemetery has six rows of graves with the west three rows separated from the east three rows by a series of cedar trees. The graves face east on the eastern side of the cemetery and the western three rows face west. According to Parsly (1985) there are 38 marked gravestones in the cemetery. There are a number of Gallahers, Browders, and Burdettes. There are also a large number of infant burials. The oldest marked gravestone is dated January 29, 1853 and lists a daughter of G. and L. B. Gallaher, born and died on the same day. The latest marked gravestone is that of William Ernest Gallaher, March 9, 1903 - December 8, 1978. There are also a number of fieldstone marked graves on the northeastern side of the cemetery.

6.3.2 [Exempted from Disclosure by Statute](40RE223)

[Exempted from Disclosure by Statute]
 [Exempted from Disclosure by Statute]
 [Exempted from Disclosure by Statute]
 [Exempted from Disclosure by Statute]
 [Exempted from Disclosure by Statute] The property consisted of 217 ha (543 acres) and was purchased from [Exempted from Disclosure by Statute] the Manhattan Project (U.S. War Department 1943).

The [Exempted from Disclosure by Statute] is surrounded by a barbed-wire fence and is dwarfed in comparison to [Exempted from Disclosure by Statute] The fenced area is approximately 9 by 9 m (30 by 30 ft) in size. The most prominent feature of the cemetery is a large, four-sided shaft dedicated to John Henry Welcker and his wife Elizabeth and their 11 children (Plate 12). There were nine persons listed on the shaft that were buried in Welcker Cemetery, the oldest grave belonging to Elizabeth Welcker who died December 24, 1840 (Parsly 1985). There are a number of graves in the cemetery marked with small marble stones with no markings. At least seven graves could be identified by the position of the stones and the indentations in the ground. All of the graves faced east.

6.3.3 [Exempted from Disclosure by Statute](40RE219)

[Exempted from Disclosure by Statute]
 [Exempted from Disclosure by Statute]
 [Exempted from Disclosure by Statute] The cemetery is in a well-wooded area at the top of a hill at the end of a footpath. [Exempted from Disclosure by Statute]
 [Exempted from Disclosure by Statute] This cemetery was located on a 217-ha (543-acre) tract purchased from [Exempted from Disclosure by Statute] by the Manhattan Project (U.S. War Department 1943).

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6.3.6 [Exempted from Disclosure by Statute](40RE220)

[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]
[Exempted from Disclosure by Statute]The cemetery was located on a 258-ha (645-acre) property purchased from TVA by the Manhattan Project.

[Exempted from Disclosure by Statute] consists of a rectangular area about 4.6 by 6.1 m (15 by 20 ft) oriented east to west and surrounded by a barbed-wire fence (Plate 16). There is a sign nailed to a tree outside the fence marked "68." There are four visible depressions inside the fence, one with a footstone marker. Two depressions were located outside the fenced area. One depression is located on the north side of the fence. The other depression is located near the southwest corner at the base of a large red oak. A displaced fieldstone marker may indicate a grave here. The depressions are oriented east to west and the graves are likely facing east.

7. RECOMMENDATIONS

Presently, no management plans have been addressed that may affect known cultural resources outside the fenced areas of the K-25 Site. A number of recommendations are made to protect those cultural resources or recover information necessary to document those resources.

There are a number of potentially important archaeological sites which could provide a wealth of recoverable information. [Exempted from Disclosure by Statute] (40RE109 a and b) and [Exempted from Disclosure by Statute] (40RE111), located [Exempted from Disclosure by Statute] have a moderate amount of cultural material [Exempted from Disclosure by Statute] deposits. These sites potentially contain deeply buried, stratified archaeological deposits. [Exempted from Disclosure by Statute] (40RE126) demonstrates the potential for investigating a prehistoric living surface with associated burned areas that exhibit redoxymorphic features. This archaeological site should be investigated further [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute] 40RE138 potentially contains deeply buried archaeological deposits. Though no such deposit was encountered in this investigation, further testing should be conducted to validate this observation. Another recommendation is that a thorough Phase I survey be conducted [Exempted from Disclosure by Statute] [Exempted from Disclosure by Statute] The Phase I survey should have test pits excavated at regular intervals and associated deep test transects. This investigation will be needed to locate and evaluate the "village" observed by Nash (1941). No further investigations are needed for archaeological sites 40RE127, 40RE135, and 40RE202. With the exception of the above sites, there are no known or likely archaeological site within the security fences because of massive cut and fill operations [Exempted from Disclosure by Statute] .]

There are several recommendations for the proposed archaeological district (40RE224) for the Wheat community. The George Jones Memorial Baptist Church (NR Site) and cemetery need to be protected. The church is in remarkable condition due to the care and maintenance to the building following Fielder's (1975) recommendations. A sufficient buffer [30 m (100 ft)] should be maintained from this structure if any management plans call for construction in the area. The remaining structures, or their remains, require further investigation to determine significance. Materials have been removed from their original locations and only sparse structural materials remain to attest to their existence. Any structure with an open well or cistern may need further investigation because of their potential for storing valuable cultural materials. The archaeological site, 40RE136, needs to be located and investigated to assess significance, if the site can be found. The Wheat Community may provide an invaluable opportunity to explore the lifeways of people in this valley prior to the arrival of the Manhattan Project. Further testing is recommended for the determination for eligibility for inclusion in the National Register. The

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proposed boundary for the archaeological district is presented in Figure 7.1. Further testing will be required to develop a more precise boundary.

The cemeteries in [Exempted from Disclosure by Statute] are protected under federal law. An adequate buffer needs to be observed before any construction is proposed in the area of one of these cemeteries.

Because the massive cut and fill operations caused extensive disturbance during the construction [Exempted from Disclosure by Statute], there are likely no intact archaeological sites to be found within the security fences except for [Exempted from Disclosure by Statute]. Property located outside the security fences not evaluated as a part of the identified archaeological sites, structures, or cemeteries will require an archaeological survey if management plans call for any surface disturbance.

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APPENDIX A

PLATES

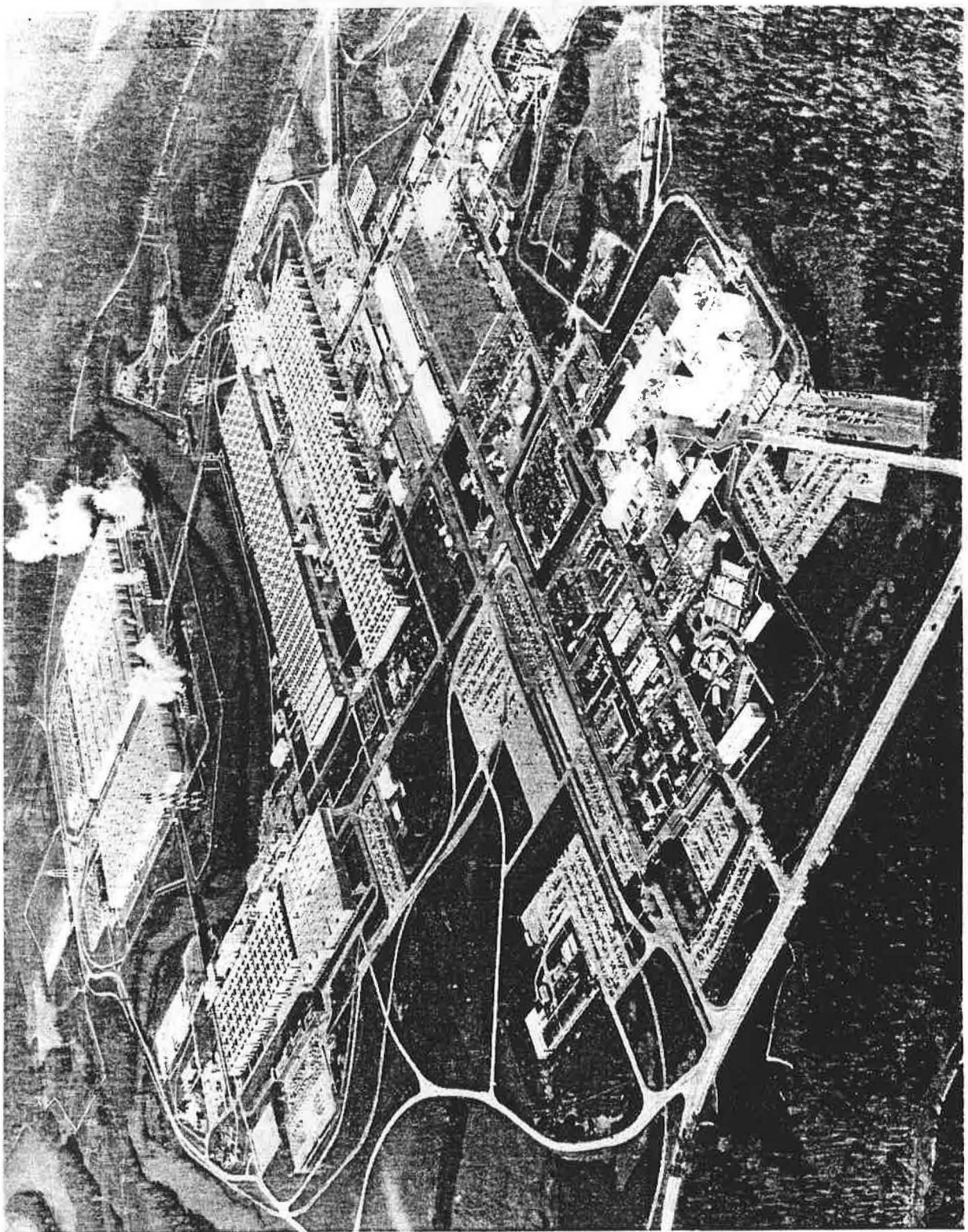


Plate 1. Aerial view of K-25 Site, facing northwest

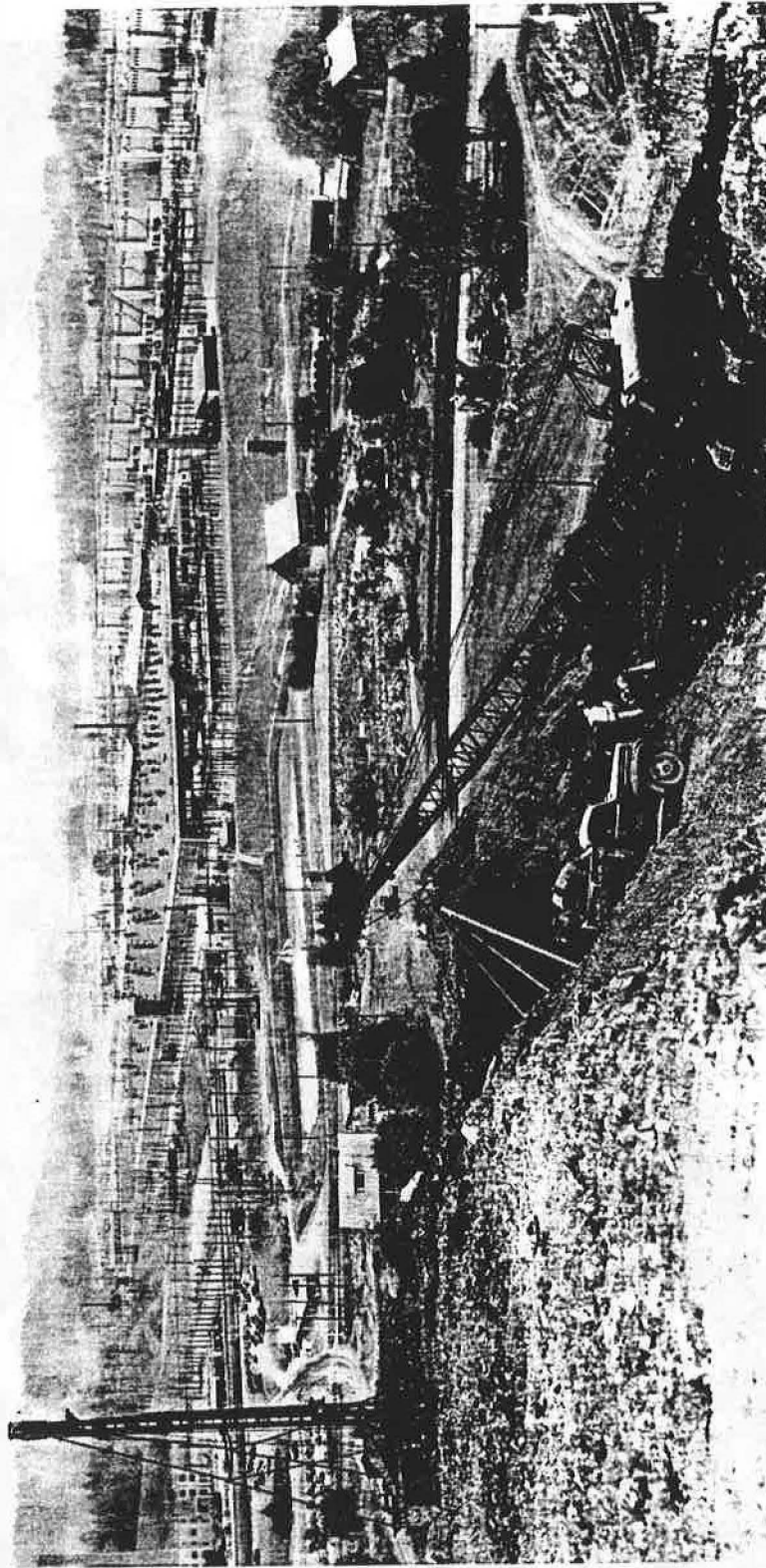


Plate 2. K-25 Site under construction, facing south

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

DT940405.1DH/ps

A-5



Plate 3. [Exempted from Disclosure by Statute] **40RE109, facing northeast**



Plate 4. [Exempted from Disclosure by Statute] **40RE111, facing northeast**

April 24, 1995

JT940405.1DH/ps

A-6

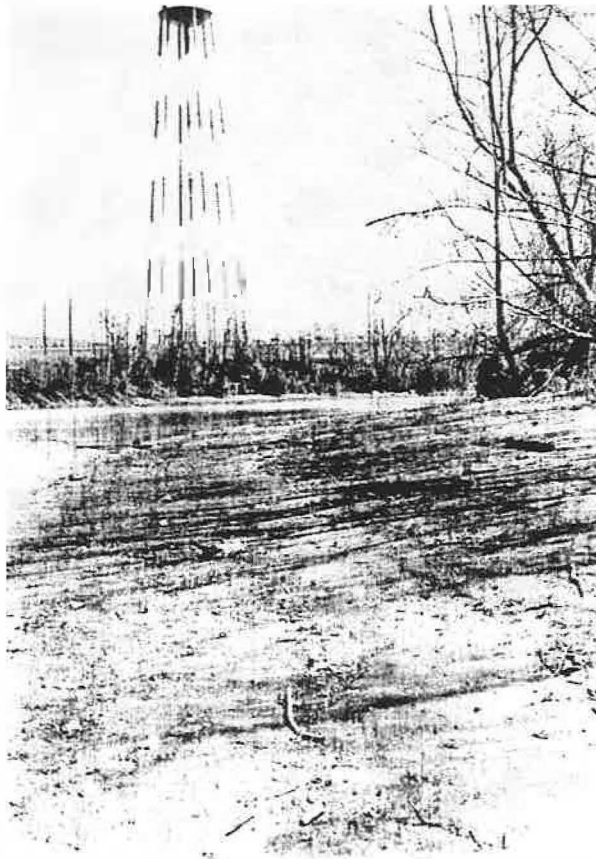


Plate 5. Archaeological site 40RE127, facing east

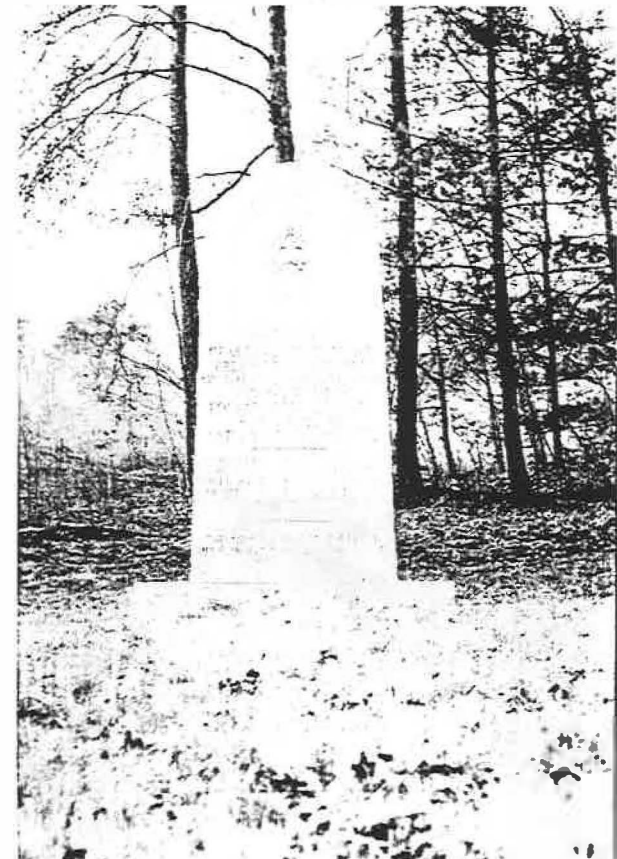


Plate 6. Memorial marker for the
Exempted from Disclosure by Statute

April 24, 1995



**Plate 7. Water tank in Wheat Community east
of K-25, facing west**

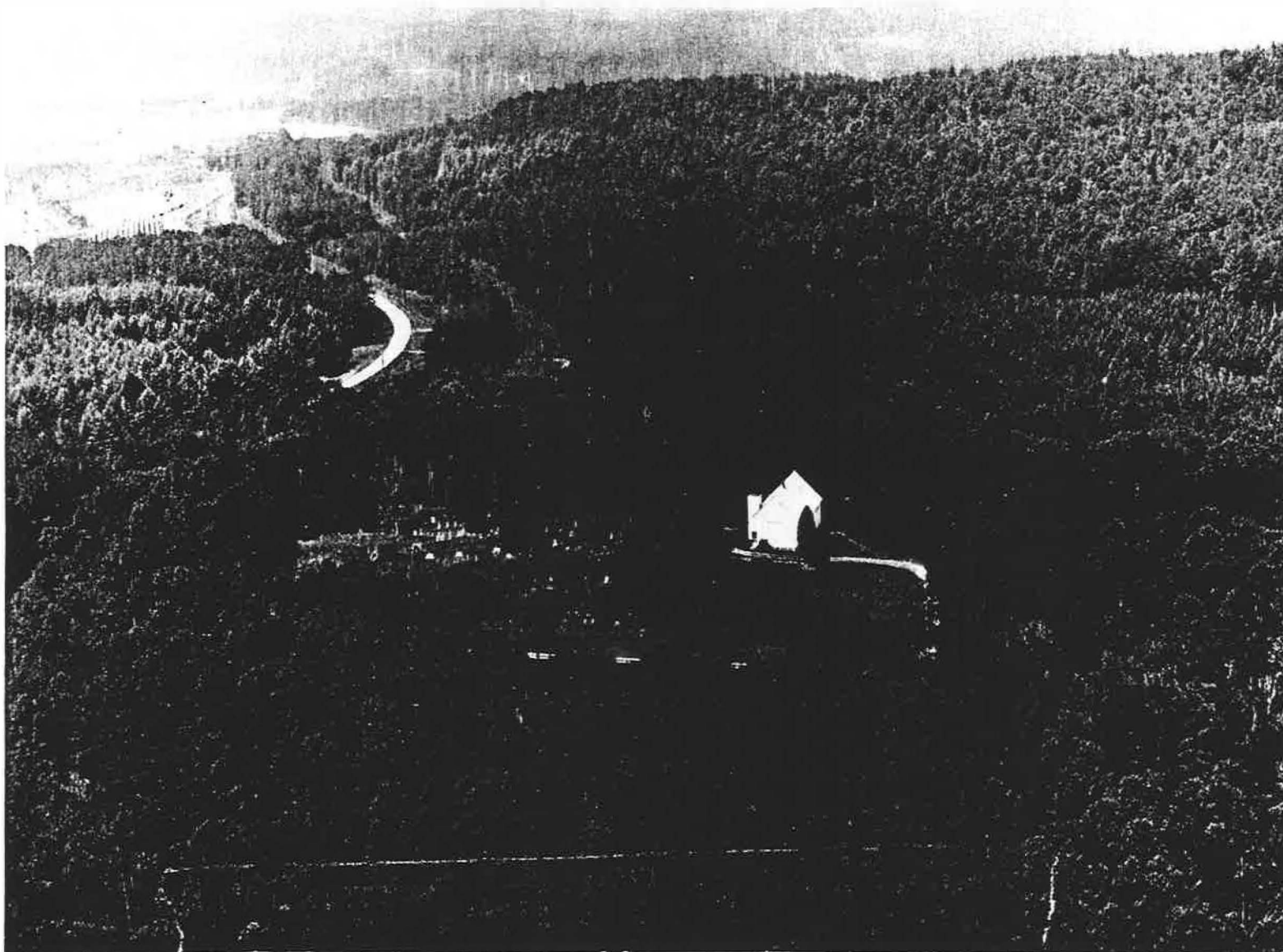


Plate 8. Aerial view of George Jones Memorial Baptist Church, facing northwest



Plate 9. George Jones Memorial Baptist Church, facing north

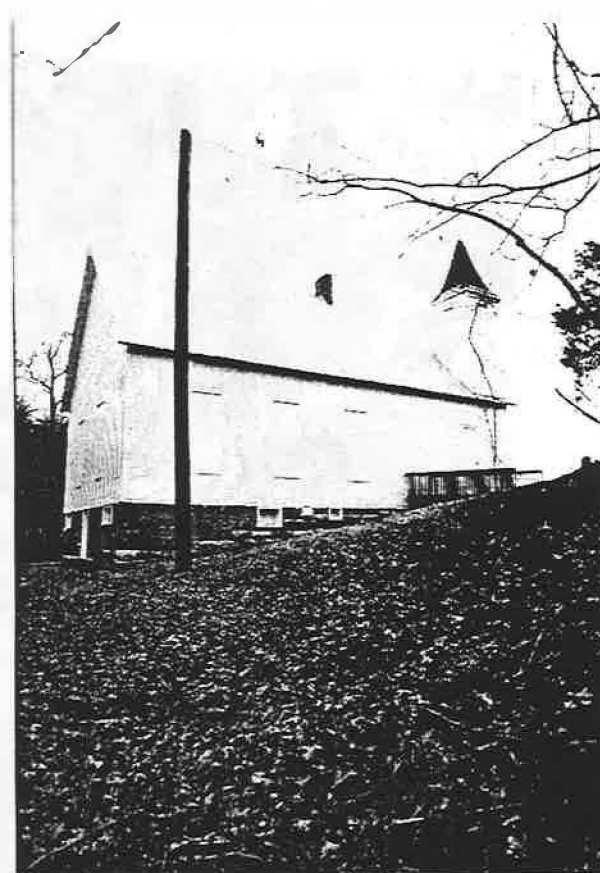


Plate 10. George Jones Memorial Baptist Church, facing south

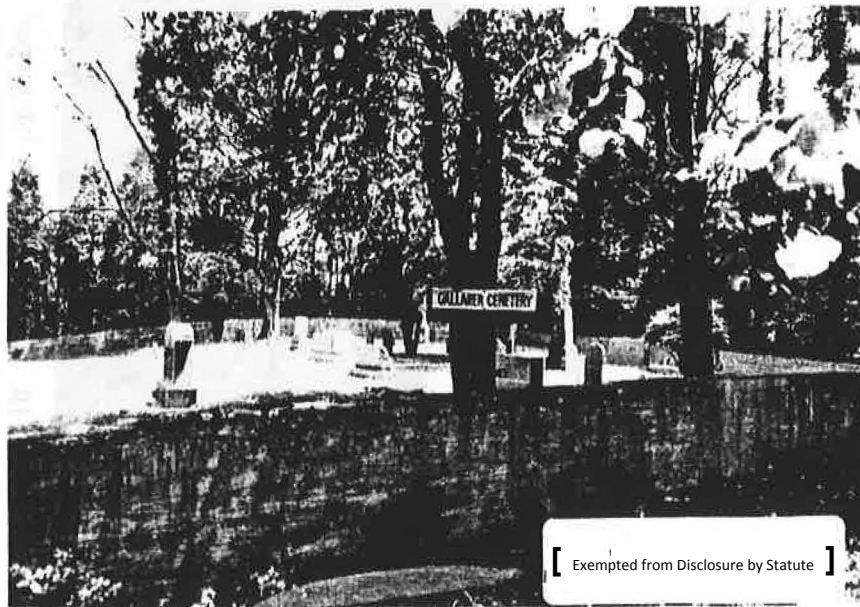


Plate 11. [Exempted from Disclosure by Statute] facing northeast

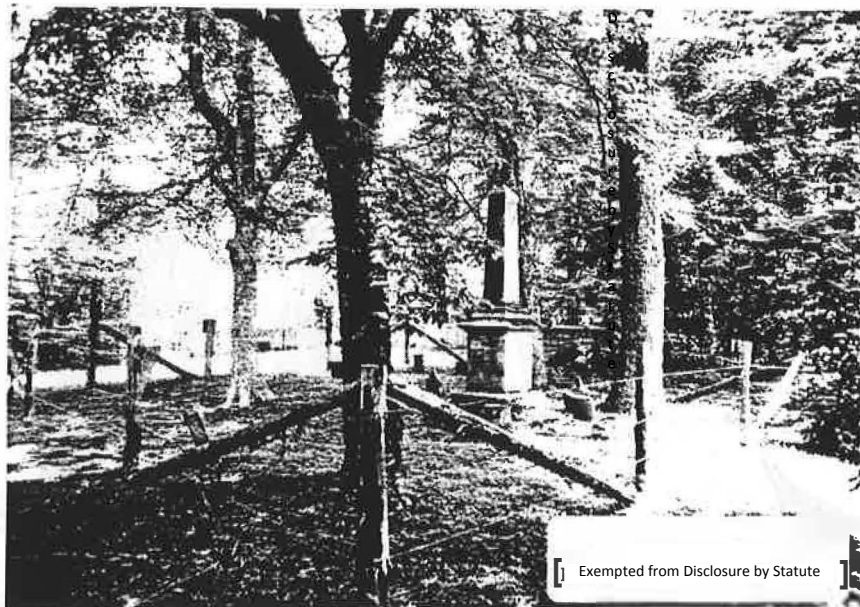


Plate 12. [Exempted from Disclosure by Statute] facing northeast

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

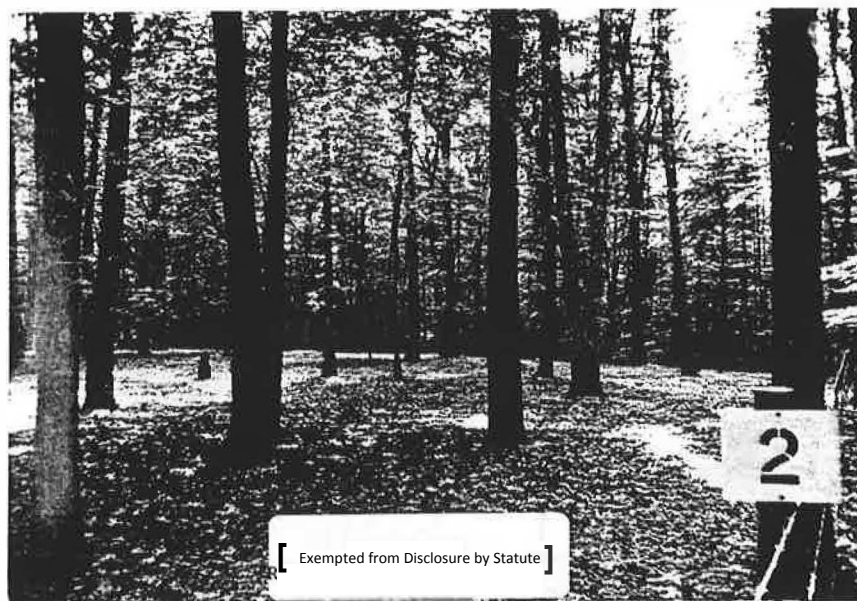


Plate 13. [Exempted from Disclosure by Statute] facing southwest



Plate 14. George Jones Memorial Baptist Church Cemetery, facing south

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

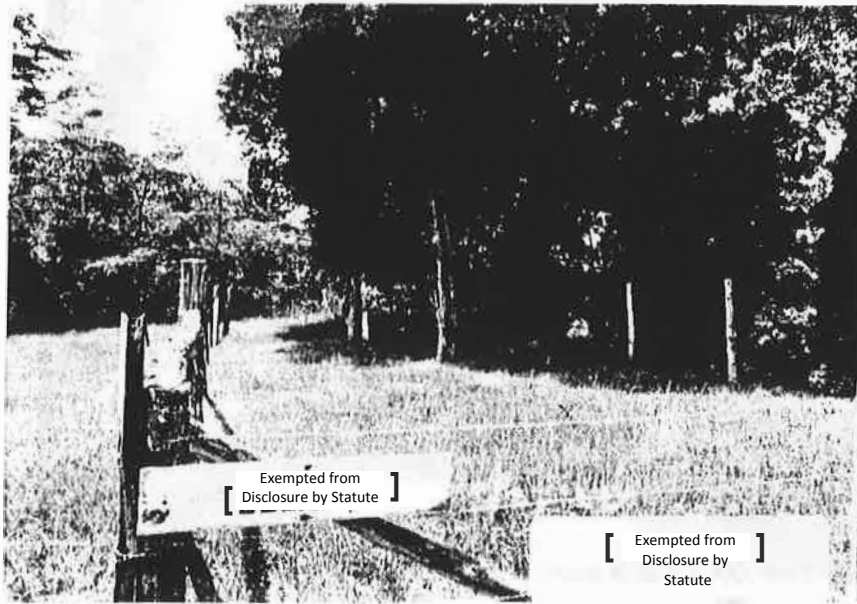


Plate 15. [Exempted from Disclosure by Statute] **facing southwest**

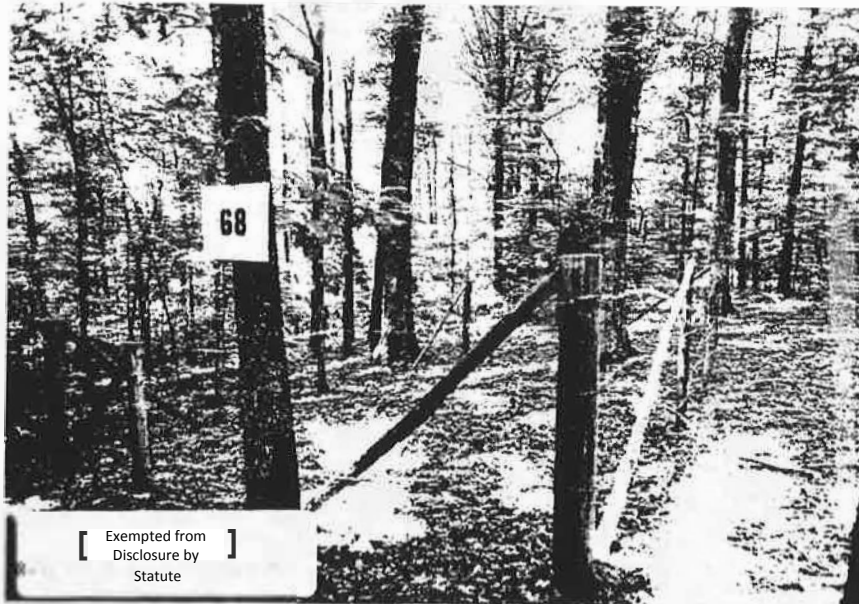


Plate 16. [Exempted from Disclosure by Statute] **facing southeast**