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Service

In cooperation with
Tennessee Agriculture
Experiment Station,
Tennessee Agricultural
Extension Service,
Tennessee Department of
Agriculture, Knox County,
City of Knoxville, Town of
Farragut, Knox County Soil
Conservation District

Soil Survey of Knox County, Tennessee

How To Use This Soil Survey

The information provided in this publication can be useful in planning the use and management of small areas. The text includes descriptions of detailed soil map units and provides an explanation of the information presented in the tables, or soil reports, which are available via the Web Soil Survey of the Natural Resources Conservation Service (accessible from the Soils Web site at <http://soils.usda.gov>). The publication also includes a glossary of terms used in the text and tables and a list of references.

Bookmarks and links in the publication allow the user to navigate from one part of the text to another. Maps showing soil lines and map unit symbols can be accessed for a particular area of interest through Web Soil Survey (by clicking on the “Soil Map” tab). The symbols on the maps represent the detailed soil map units in the area. These map units are listed in the bookmarks panel of the text. Information about the map units can be accessed by clicking on the appropriate bookmark.

The bookmarks panel of the text outlines the contents of this publication.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 2000. Soil names and descriptions were approved in 2004. Unless otherwise indicated, statements in the publication refer to the conditions in the survey area in 2000. This survey was made cooperatively by the Natural Resources Conservation Service, the Tennessee Agriculture Experiment Station, the Tennessee Agricultural Extension Service, the Tennessee Department of Agriculture, Knox County, the City of Knoxville, the Town of Farragut, and the Knox County Soil Conservation District. Knox County, the City of Knoxville, the Town of Farragut, and the Tennessee Department of Agriculture provided financial assistance for the survey. The survey is part of the technical assistance furnished to the Knox County Soil Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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Foreword

This soil survey contains information that can be used in land-planning programs in Knox County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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Soil Survey of Knox County, Tennessee

By Nathan T. Hartgrove, Natural Resources Conservation Service

Fieldwork by April H. Nitzsche, Knox County, and Nathan T. Hartgrove, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
Tennessee Agriculture Experiment Station, Tennessee Agricultural Extension Service, Tennessee Department of Agriculture, Knox County, City of Knoxville, Town of Farragut, and Knox County Soil Conservation District

KNOX COUNTY is in the eastern part of Tennessee (fig. 1). It is bordered on the north by Anderson and Union Counties, on the east by Grainger and Jefferson Counties, on the south by Blount and Sevier Counties, and on the west by Loudon County. The Clinch River separates the county on the west from a small part of Roane County.

Knox County is irregularly shaped. Its widest points are about 33 miles from east to west and about 21 miles from north to south. The county consists of about 526 square miles, or 336,600 acres. About 323,800 acres are land areas, and about 12,800 acres are water areas. The City of Knoxville is located near the center of the county. Knoxville is the center of a large and growing metropolitan area. In 2000, according to census data, the population of the county was about 382,000. Urban growth continues at a fairly rapid pace, with the most rapid growth occurring along highway corridors extending west and northwest from Knoxville.

Knox County was first organized in 1792 and originally included present-day Blount County. The early immigrant settlers were mainly English, Scotch, and Irish, who came to the survey area from Virginia, North Carolina, or other parts of eastern Tennessee. A number of early settlers were veterans of the American Revolution.

This soil survey updates the soil survey of Knox County published in 1955 (12). It provides additional information and updated maps, which show a more recent photographic background.

General Nature of the County

This section gives information about Knox County. It describes the physiography and geology; drainage; industry, transportation, and natural resources; and climate.

Physiography and Geology

Knox County lies entirely within the Southern Appalachian Ridges and Valleys major land resource area. The soils formed under forest vegetation and are typically light colored. They range from shallow to very deep over limestone, dolomite, shale, siltstone, or sandstone bedrock. They are mainly medium and fine textured soils.

Soil Survey of Knox County, Tennessee

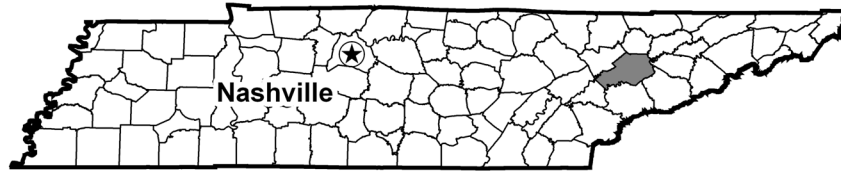


Figure 1.—Location of Knox County in Tennessee.

Slopes range from nearly level to extremely steep. Many of the soils are generally suited to a range of agricultural or urban uses. Excessive slope or limited depth to bedrock are the most common soil limitations.

Knox County consists of a series of southwest- to northeast-trending ridges and intervening valleys. The ridges and valleys were formed by thrust faulting of the underlying bedrock early in the development of the landscape. The geologic ages of the bedrock are Cambrian, Ordovician, and Silurian, with the Silurian rocks occurring only on House Mountain (9). Six major faults and numerous minor faults occur in the county. Major faults are the Copper Creek, Beaver Valley, Saltville, Knoxville, Rocky Valley, and Dumplin Valley Faults. Each fault extends from southwest to northeast and represents a separation between distinct physiographic units. The relief is mainly rolling to hilly, but numerous steep, fairly rugged ridges extend throughout the county. Elevations range from about 740 feet, on the Clinch River where it leaves the county, to about 2,128 feet on House Mountain.

Drainage

In Knox County, the natural drainage is well developed. Locally, both trellis and dendritic drainage patterns exist, depending on the nature and weathering ability of the underlying bedrock. On a broad scale, the larger streams and tributaries form a dominantly trellis pattern. In some areas underlain by limestone and dolomite, karst topography has formed and there is an irregular and sometimes discontinuous drainage pattern that resulted from streams disappearing into sinkholes and, in some places, reappearing at another location.

The eastern and southern portions of the county are drained by the Holston, French Broad, and Tennessee Rivers and their tributary streams. The confluence of the Holston and French Broad Rivers east of Knoxville forms the Tennessee River. The Clinch River and its tributary streams drain the northwestern third of the county. The Clinch River drains into the Tennessee River further downstream, near Kingston in Roane County.

Industry, Transportation, and Natural Resources

Knox County, especially the City of Knoxville and its surrounding suburbs, is a major industrial and commercial center. It has an infrastructure that accommodates a wide range of commercial and industrial enterprises.

The county has an extensive and well developed transportation network, consisting of interstate highways, numerous U.S. and State highways, and a network of paved county roads. Public transportation is available in the City of Knoxville. The McGhee-Tyson airport, located a few miles south of Knoxville in Blount County, serves the county.

Limestone mining is a notable industry in parts of Knox County. Numerous large limestone quarries operate within the county. The county has a good supply of fresh water. Most of the soils in the county are suited to the production of timber and forest products. In 2000, the county had more than 108,000 acres in timber (8).

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Knoxville, Tennessee, in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 39.4 degrees F and the average daily minimum temperature is 29.8 degrees. The lowest temperature on record, which occurred at Knoxville on January 21, 1985, was -24 degrees. In summer, the average temperature is 76.1 degrees and the average daily maximum temperature is 86.1 degrees. The highest recorded temperature, which occurred at Knoxville on July 12, 1930, was 104 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is 47.14 inches. Of this, 25.53 inches, or about 54 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 6.14 inches at Knoxville on July 16, 1917. Thunderstorms occur on about 47 days each year, and most occur between May and August.

The average seasonal snowfall is 13.5 inches. The greatest snow depth at any one time during the period of record was 15 inches, recorded on March 14, 1993. On average, 8 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 17.5 inches, recorded on February 13, 1960.

The average relative humidity in mid-afternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 88 percent. The sun shines 64 percent of the time possible in summer and 42 percent in winter. The prevailing wind is from the northeast, except from April to July, when it is from the southwest. Average windspeed is highest, around 9 miles per hour, in March and April.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location, and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their

Soil Survey of Knox County, Tennessee

characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

General Soil Map Units

The general soil map shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can then be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the general soil map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

1. Minvale-Fullerton-Bodine

Very deep, well drained and somewhat excessively drained, clayey, loamy, and gravelly soils that formed in residuum or colluvium derived from cherty limestone or dolomite

Setting

Landscape: Dissected upland ridges and drainageways

Slope range: Gently sloping to very steep (about 2 to 50 percent)

Extent and Composition

Percent of the survey area: 20

Extent of soils in the map unit:

Minvale soils—42 percent

Fullerton soils—29 percent

Bodine soils—10 percent

Minor soils (including Dewey, Rockdell, Loyston, and Talbott)—19 percent

Soil Properties and Qualities

Minvale

Depth class: Very deep

Drainage class: Well drained

Landscape position: Dissected uplands and drainageways

Parent material: Colluvium

Typical texture of surface layer: Loam

Slope: 2 to 50 percent

Fullerton

Depth class: Very deep

Drainage class: Well drained
Landscape position: Dissected uplands
Parent material: Residuum
Typical texture of surface layer: Gravelly loam
Slope: 5 to 50 percent

Bodine

Depth class: Very deep
Drainage class: Somewhat excessively drained
Landscape position: Dissected uplands
Parent material: Residuum or colluvium
Typical texture of surface layer: Extremely gravelly loam
Slope: 25 to 50 percent

Use and Management

Many areas of this map unit are in mixed woodland. The less sloping areas are often cleared and used for pasture, hay, or row crops. Some areas are in residential or commercial developments. The dominant limiting feature of the major soils in most places is the steepness of slope. Slopes that are more than about 8 to 15 percent (depending on proposed use) limit agriculture and urban uses. Other soil features that may limit design and construction for common urban uses include the clayey subsoil of the Fullerton soils and the high content of rock fragments in the Bodine soils.

2. Dewey

Very deep, well drained, clayey soils that formed in residuum derived from limestone or dolomite

Setting

Landscape: Upland ridges
Slope range: Gently sloping to extremely steep (about 2 to 60 percent)

Extent and Composition

Percent of the survey area: 18
Extent of soils in the map unit:
Dewey soils—66 percent
Minor soils (including Emory, Etowah, and Minvale)—34 percent

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Landscape position: Ridgetops, shoulders, and side slopes
Parent material: Residuum
Typical texture of surface layer: Silt loam
Slope: 2 to 60 percent

Use and Management

Most areas of this map unit are cleared and used for pasture, hay, or row crops. Residential or commercial developments are common in many areas. The steepness of slope is a limitation in many areas. Slopes that are more than about 8 to 15

percent (depending on proposed use) limit agriculture and urban uses. The main soil feature that may limit design and construction for common urban uses is the clayey subsoil.

3. Loyston-Talbott-Rock outcrop

Shallow and moderately deep, well drained soils that formed in residuum derived mainly from limestone and numerous bedrock outcrops

Setting

Landscape: Ridgetops, shoulders, side slopes, backslopes, and toeslopes

Slope range: Gently sloping to extremely steep (about 2 to 80 percent)

Extent and Composition

Percent of the survey area: 8

Extent of components in the map unit:

Loyston soils—26 percent

Talbott soils—14 percent

Rock outcrop—13 percent

Minor soils (including Nonaburg, Collegedale, Dewey, and Emory)—47 percent

Soil Properties and Qualities

Loyston

Depth class: Shallow

Drainage class: Well drained

Landscape position: Shoulders, backslopes, and toeslopes

Parent material: Residuum

Typical texture of surface layer: Flaggy clay

Slope: 2 to 80 percent

Talbott

Depth class: Moderately deep

Drainage class: Well drained

Landscape position: Ridgetops, shoulders, side slopes, and backslopes

Parent material: Residuum

Typical texture of surface layer: Silty clay loam

Slope: 2 to 60 percent

Rock outcrop

This part of the map unit consists of outcrops of limestone or shaly limestone that occur as individual rocks, ledges, or bluffs. Some loose stones or boulders may also occur scattered on the soil surface in some areas.

Use and Management

Most areas of this map unit are in mixed woodland. Numerous limestone quarries also occur. The dominant limiting features of the major soils are the limited depth to bedrock and the steepness of slope in many areas. The combination of these features, along with bedrock outcrops, severely limits agriculture and urban uses and causes problems for design and construction that are very difficult to overcome.

4. Corryton-Nonaburg-Heiskell

Shallow and very deep, well drained and moderately well drained, loamy and clayey soils that formed in residuum or alluvium derived mainly from shale

Setting

Landscape: Ridgetops, shoulders, side slopes, footslopes, toeslopes, and drainageways

Slope range: Nearly level to very steep (about 0 to 50 percent)

Extent and Composition

Percent of the survey area: 22

Extent of soils in the map unit:

Corryton soils—32 percent

Nonaburg soils—24 percent

Heiskell soils—15 percent

Minor soils (including Townley, Steadman, Loyston, and Collegedale)—29 percent

Soil Properties and Qualities

Corryton

Depth class: Very deep

Drainage class: Well drained

Landscape position: Ridgetops, shoulders, and side slopes

Parent material: Residuum

Typical texture of surface layer: Loam

Slope: 2 to 25 percent

Nonaburg

Depth class: Shallow

Drainage class: Well drained

Landscape position: Shoulders and backslopes

Parent material: Residuum

Typical texture of surface layer: Channery silt loam

Slope: 12 to 50 percent

Heiskell

Depth class: Very deep

Drainage class: Moderately well drained

Landscape position: Upland drainageways

Parent material: Mixed alluvium

Typical texture of surface layer: Silt loam

Slope: 0 to 5 percent

Use and Management

Most areas of this map unit are cleared and used for crops, hay, or pasture. Residential or commercial developments also are common. The slope is a limitation affecting urban and agriculture uses when it is more than about 8 to 15 percent (depending on proposed use). Other features that may limit design and construction for common urban uses include the clayey subsoil of the Nonaburg and Corryton soils, the limited depth to bedrock of the Nonaburg soils, and wetness in the Heiskell soils.

5. Apison-Montevallo-Salacoa

Shallow, moderately deep, and very deep, well drained, loamy and shaly soils that formed in residuum or colluvium derived from shale or siltstone that is interbedded with sandstone in some areas

Setting

Landscape: Ridgetops, shoulders, side slopes, footslopes, and benches

Slope range: Sloping to extremely steep (about 5 to 75 percent)

Extent and Composition

Percent of the survey area: 12

Extent of soils in the map unit:

Apison soils—40 percent

Montevallo soils—18 percent

Salacoa soils—14 percent

Minor soils (including Swafford, Loyston, Nonaburg, and Heiskell)—28 percent

Soil Properties and Qualities

Apison

Depth class: Moderately deep

Drainage class: Well drained

Landscape position: Ridgetops, shoulders, and backslopes

Parent material: Residuum

Typical texture of surface layer: Gravelly silt loam

Slope: 5 to 75 percent

Montevallo

Depth class: Shallow

Drainage class: Well drained

Landscape position: Ridgetops, shoulders, and side slopes

Parent material: Residuum

Typical texture of surface layer: Channery silt loam

Slope: 5 to 75 percent

Salacoa

Depth class: Very deep

Drainage class: Well drained

Landscape position: Footslopes, benches, and the lower portions of side slopes

Parent material: Colluvium

Typical texture of surface layer: Gravelly loam

Slope: 5 to 25 percent

Use and Management

The steep areas of this map unit are in mixed woodland. Many of the less sloping areas are cleared and used for pasture or hay. Some areas have residential or commercial developments. The steepness of slope is a significant limitation in most areas. In addition, the limited depth to bedrock of the Apison and Montevallo soils severely limits urban and agricultural uses and causes design and construction problems that are often difficult to overcome. In the less sloping areas, the Salacoa soils are generally suited to agriculture and urban uses.

6. Coghill-Corryton

Very deep, well drained, clayey soils that formed in residuum derived from interbedded sandstone and shale

Setting

Landscape: Ridgetops, shoulders, and side slopes

Slope range: Sloping to extremely steep (about 5 to 65 percent)

Extent and Composition

Percent of the survey area: 7

Extent of soils in the map unit:

Coghill soils—38 percent

Corryton soils—25 percent

Minor soils (including Heiskell, Nonaburg, and Dewey)—37 percent

Soil Properties and Qualities

Coghill

Depth class: Very deep

Drainage class: Well drained

Landscape position: Ridgetops, shoulders, and side slopes

Parent material: Residuum

Typical texture of surface layer: Loam

Slope: 5 to 65 percent

Corryton

Depth class: Very deep

Drainage class: Well drained

Landscape position: Ridgetops, shoulders, and side slopes

Parent material: Residuum

Typical texture of surface layer: Loam

Slope: 5 to 65 percent

Use and Management

Most areas of this map unit are in mixed woodland. The steepness of slope is a limitation in most areas. Slopes that are more than about 8 to 15 percent (depending on proposed use) limit agriculture and urban uses. Other features that may pose design and construction concerns for common urban uses include the clayey subsoil of both the Coghill and Corryton soils.

7. Steadman-Bloomingtondale-Heiskell

Very deep, poorly drained and moderately well drained, loamy and clayey soils that formed in alluvium derived mainly from limestone and shale

Setting

Landscape: Flood plains, low stream terraces, toeslopes, and upland drainageways

Slope range: Nearly level or gently sloping (about 0 to 5 percent)

Extent and Composition

Percent of the survey area: 4

Extent of soils in the map unit:

Steadman soils—61 percent

Bloomington soils—12 percent

Heiskell soils—10 percent

Minor soils (including Corryton, Dewey, Townley, and Nonaburg)—17 percent

Soil Properties and Qualities

Steadman

Depth class: Very deep

Drainage class: Moderately well drained

Landscape position: Flood plains and low terraces

Parent material: Alluvium

Typical texture of surface layer: Silt loam

Slope: 0 to 3 percent

Bloomington

Depth class: Very deep

Drainage class: Poorly drained

Landscape position: Flood plains and depressions

Parent material: Alluvium

Typical texture of surface layer: Silt loam

Slope: 0 to 2 percent

Heiskell

Depth class: Very deep

Drainage class: Moderately well drained

Landscape position: Upland drainageways

Parent material: Mixed alluvium

Typical texture of surface layer: Silt loam

Slope: 0 to 5 percent

Use and Management

Most areas of this map are cleared and used for pasture. The dominant limitations affecting most uses are the flooding and wetness. These limitations are significant for agriculture and urban uses. They cause management concerns and design and construction problems that are difficult to overcome.

8. Waynesboro-Etowah

Very deep, well drained, clayey and loamy soils that formed in alluvium and colluvium

Setting

Landscape: Intermediate and high stream terraces and footslopes

Slope range: Gently sloping to moderately steep (about 2 to 25 percent)

Extent and Composition

Percent of the survey area: 2

Extent of soils in the map unit:

Waynesboro soils—44 percent

Etowah soils—16 percent

Minor soils (including Emory and Dewey)—40 percent

Soil Properties and Qualities

Waynesboro

Depth class: Very deep
Drainage class: Well drained
Landscape position: Stream terraces
Parent material: Alluvium
Typical texture of surface layer: Loam
Slope: 2 to 25 percent

Etowah

Depth class: Very deep
Drainage class: Well drained
Landscape position: Stream terraces and footslopes
Parent material: Alluvium or colluvium
Typical texture of surface layer: Loam
Slope: 2 to 5 percent

Use and Management

Most areas of this map unit are cleared and used for pasture, hay, or row crops. Residential or commercial developments occur in a few areas. The steepness of slope is a limitation in most areas. Slopes that are more than about 8 to 15 percent (depending on proposed use) limit agriculture and urban uses. The other major limitation that may cause design and construction problems for common urban uses is the clayey subsoil of the Waynesboro soils.

9. Bloomingdale-Hamblen-Pettyjon

Very deep, poorly drained, moderately well drained, and well drained, loamy and clayey soils that formed in alluvium derived mainly from shale, siltstone, and sandstone

Setting

Landscape: Flood plains and depressions
Slope range: Nearly level (about 0 to 3 percent)

Extent and Composition

Percent of the survey area: 1
Extent of soils in the map unit:
 Bloomingdale soils—38 percent
 Hamblen soils—24 percent
 Pettyjon soils—14 percent
 Minor soils (including Whitwell, Apison, Montevallo, and Loyston)—24 percent

Soil Properties and Qualities

Bloomingdale

Depth class: Very deep
Drainage class: Poorly drained
Landscape position: Flood plains and depressions
Parent material: Alluvium
Typical texture of surface layer: Silt loam
Slope: 0 to 2 percent

Hamblen

Depth class: Very deep
Drainage class: Moderately well drained
Landscape position: Flood plains
Parent material: Alluvium
Typical texture of surface layer: Silt loam
Slope: 0 to 3 percent

Pettyjon

Depth class: Very deep
Drainage class: Well drained
Landscape position: Flood plains
Parent material: Alluvium
Typical texture of surface layer: Silt loam
Slope: 0 to 3 percent

Use and Management

Most areas of this map unit are cleared and used for pasture or hay production. The dominant limitations affecting most uses are the flooding and wetness. These limitations are significant for agriculture and urban uses and cause management concerns and design or construction problems that are difficult to overcome.

10. Shady-Whitwell

Very deep, moderately well drained and well drained soils that formed in mixed alluvium

Setting

Landscape: Flood plains and stream terraces
Slope range: Nearly level to sloping (about 0 to 12 percent)

Extent and Composition

Percent of the survey area: 1
Extent of soils in the map unit:
 Shady soils—67 percent
 Whitwell soils—12 percent
 Minor soils (including Toccoa, Steadman, Loyston, and Talbott)—21 percent

Soil Properties and Qualities

Shady

Depth class: Very deep
Drainage class: Well drained
Landscape position: Stream terraces
Parent material: Alluvium
Typical texture of surface layer: Loam
Slope: 0 to 12 percent

Whitwell

Depth class: Very deep
Drainage class: Moderately well drained
Landscape position: Low stream terraces
Parent material: Alluvium

Typical texture of surface layer: Loam
Slope: 0 to 5 percent

Use and Management

Most areas of this map unit are cleared and used for pasture, hay, or crop production. The dominant limitations affecting most uses are the flooding and wetness. These limitations are significant for urban uses and cause design and construction problems that are difficult to overcome. Rare flooding is not generally a limitation affecting agricultural uses. Areas of the Shady soils that are not subject to flooding are generally well suited to agricultural and urban uses.

11. Urban land-Udorthents

Areas consisting of buildings, roads, or other structures common to urban areas and soil materials that have been modified by cutting, filling, or other mechanical disturbances

Setting

Landscape: Variable, but typically uplands
Slope range: Nearly level to moderately steep (about 0 to 25 percent)

Extent and Composition

Percent of the survey area: 5
Extent of components in the map unit:
Urban land—69 percent
Udorthents—22 percent
Minor soils (including Corryton and Dewey)—9 percent

Soil Properties and Qualities

Urban land

Urban land consists of nonsoil areas that have impervious ground cover of buildings, roads, streets, parking lots, and similar structures. The underlying soil is not observable.

Udorthents

Depth class: Variable, but typically deep or very deep
Drainage class: Moderately well drained or well drained
Landscape position: Variable, but typically uplands
Parent material: Variable
Typical texture of surface layer: Variable
Slope: 0 to about 25 percent

Use and Management

Land use in this map unit is mostly predetermined and is generally limited to urban uses, such as commercial or residential buildings, septic tank absorption fields, lawns and landscaping, and roads and streets.

Detailed Soil Map Units

The map units delineated on the detailed soil maps represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase

commonly indicates a feature that affects use or management. For example, Bloomingdale silt loam, 0 to 2 percent slopes, occasionally flooded, is a phase of the Bloomingdale series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Coghill-Corryton complex, 12 to 25 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Urban land is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

AmC—Apison-Montevallo complex, 5 to 12 percent slopes

Setting

Landscape position: Ridgetops and shoulders

Major use: Most areas are in woodland consisting mainly of mixed hardwoods

Composition

Apison soil and similar components: 50 to 75 percent

Montevallo soil and similar components: 15 to 25 percent

Minor components: 0 to 35 percent

Minor Components

Contrasting: Coghill and Corryton soils

Similar: Nonaburg and Townley soils

Typical Profile

Apison

Surface layer:

0 to 4 inches—partially decomposed hardwood litter

4 to 7 inches—dark grayish brown gravelly silt loam

Subsurface layer:

7 to 10 inches—yellowish brown gravelly loam

Subsoil:

10 to 21 inches—yellowish brown gravelly loam

21 to 29 inches—dark yellowish brown very gravelly loam

Substratum:

29 inches—weathered shale bedrock

Montevallo

Surface layer:

0 to 1 inch—mat of hardwood leaves and twigs

1 to 3 inches—brown channery silt loam

Subsoil:

3 to 14 inches—brownish yellow very channery silt loam

Substratum:

14 to 19 inches—brownish yellow extremely channery silt loam

19 inches—tilted, moderately soft shale that has yellowish brown silt loam between fractures

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Apison—low; Montevallo—very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Apison—very strongly acid or strongly acid; Montevallo—very strongly acid to moderately acid

Depth to bedrock: Apison—20 to 40 inches; Montevallo—7 to 20 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- Regular crop rotation is necessary in most sloping areas.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The main limitation affecting pasture and hay is the limited available water capacity.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The main limitation affecting urban uses is the limited depth to bedrock, especially in areas of the Montevallo soil. Because of the severity of the limitation, there can be considerable expense in designing and installing structures or facilities that function properly.

Interpretive Group

Land capability classification: 4e

AmD—Apison-Montevallo complex, 12 to 25 percent slopes

Setting

Landscape position: Ridgetops, shoulders, and lower side slopes

Major use: Most areas are in woodland consisting mainly of mixed hardwoods

Composition

Apison soil and similar components: 70 to 85 percent

Montevallo soil and similar components: 15 to 25 percent

Minor components: 0 to 15 percent

Minor Components

Contrasting: Coghill and Corryton soils

Similar: Nonaburg and Townley soils

Typical Profile

Apison

Surface layer:

0 to 4 inches—partially decomposed hardwood litter

4 to 7 inches—dark grayish brown gravelly silt loam

Subsurface layer:

7 to 10 inches—yellowish brown gravelly loam

Subsoil:

10 to 21 inches—yellowish brown gravelly loam

21 to 29 inches—dark yellowish brown very gravelly loam

Substratum:

29 inches—weathered shale bedrock

Montevallo

Surface layer:

0 to 1 inch—mat of hardwood leaves and twigs

1 to 3 inches—brown channery silt loam

Subsoil:

3 to 14 inches—brownish yellow very channery silt loam

Substratum:

14 to 19 inches—brownish yellow extremely channery silt loam

19 inches—tilted, moderately soft shale that has yellowish brown silt loam between fractures

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Apison—low; Montevallo—very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Apison—very strongly acid or strongly acid; Montevallo—very strongly acid to moderately acid

Depth to bedrock: Apison—20 to 40 inches; Montevallo—7 to 20 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.

- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- The slope and the limited available water capacity restrict the use of these soils for hay.
- Good pasture management is essential in controlling erosion and maintaining productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope and the limited depth to bedrock, especially in areas of the Montevallo soil. Because of the severity of the limitations, there can be considerable expense in designing and installing structures or facilities that function properly.

Interpretive Group

Land capability classification: 6e

AmE—Apison-Montevallo complex, 25 to 35 percent slopes, rocky

Setting

Landscape position: Shoulders, side slopes, and backslopes

Major use: Most areas are in woodland consisting mainly of mixed hardwoods

Composition

Apison soil and similar components: 50 to 70 percent

Montevallo soil and similar components: 20 to 50 percent

Minor components: 0 to 28 percent

Minor Components

Contrasting: Coghill and Corryton soils and areas of rock outcrop

Similar: Nonaburg and Townley soils

Typical Profile

Apison

Surface layer:

0 to 4 inches—partially decomposed hardwood litter

4 to 7 inches—dark grayish brown gravelly silt loam

Subsurface layer:

7 to 10 inches—yellowish brown gravelly loam

Subsoil:

10 to 21 inches—yellowish brown gravelly loam

21 to 29 inches—dark yellowish brown very gravelly loam

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Substratum:

29 inches—weathered shale bedrock

Montevallo

Surface layer:

0 to 1 inch—mat of hardwood leaves and twigs

1 to 3 inches—brown channery silt loam

Subsoil:

3 to 14 inches—brownish yellow very channery silt loam

Substratum:

14 to 19 inches—brownish yellow extremely channery silt loam

19 inches—tilted, moderately soft shale that has yellowish brown silt loam between fractures

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Apison—low; Montevallo—very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Apison—very strongly acid or strongly acid; Montevallo—very strongly acid to moderately acid

Depth to bedrock: Apison—20 to 40 inches; Montevallo—7 to 20 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by the slope, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of the moisture deficiency due to the limited depth to bedrock and the equipment use limitation on steep slopes, establishing and maintaining hayland or pasture is difficult.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope and the limited depth to bedrock, especially in areas of the Montevallo soil. Because of the severity of the limitations, there can be considerable expense in designing and installing structures or facilities that function properly.

Interpretive Group

Land capability classification: 7s

AmF—Apison-Montevallo complex, 35 to 75 percent slopes, rocky

Setting

Landscape position: Shoulders, side slopes, and backslopes

Major use: Most areas are in woodland consisting mainly of mixed hardwoods

Composition

Apison soil and similar components: 50 to 70 percent

Montevallo soil and similar components: 20 to 30 percent

Minor components: 10 to 28 percent

Minor Components

Contrasting: Coghill and Corryton soils and areas of rock outcrop

Similar: Nonaburg and Townley soils

Typical Profile

Apison

Surface layer:

0 to 4 inches—partially decomposed hardwood litter

4 to 7 inches—dark grayish brown gravelly silt loam

Subsurface layer:

7 to 10 inches—yellowish brown gravelly loam

Subsoil:

10 to 21 inches—yellowish brown gravelly loam

21 to 29 inches—dark yellowish brown very gravelly loam

Substratum:

29 inches—weathered shale bedrock

Montevallo

Surface layer:

0 to 1 inch—mat of hardwood leaves and twigs

1 to 3 inches—brown channery silt loam

Subsoil:

3 to 14 inches—brownish yellow very channery silt loam

Substratum:

14 to 19 inches—brownish yellow extremely channery silt loam

19 inches—tilted, moderately soft shale that has yellowish brown silt loam between fractures

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Apison—low; Montevallo—very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Apison—very strongly acid or strongly acid; Montevallo—very strongly acid to moderately acid

Depth to bedrock: Apison—20 to 40 inches; Montevallo—7 to 20 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by the slope, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of the moisture deficiency due to the limited depth to bedrock and the equipment use limitation on very steep or extremely steep slopes, establishing and maintaining hayland or pasture is difficult.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope and the limited depth to bedrock, especially in areas of the Montevallo soil. Because of the severity of the limitations, there can be considerable expense in designing and installing structures or facilities that function properly.

Interpretive Group

Land capability classification: 7s

Bd—Bloomingdale silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landscape position: Flood plains

Major use: Pasture or idle land

Note: In its natural state, many areas of this soil pond water for significant periods during the year and support hydrophytic vegetation. Many areas have been artificially drained by subsurface tile and/or ditches. Where not drained, or where artificial drainage has not been maintained, many areas have reverted to a ponded condition. It was not practical to separate ponded and non-ponded areas during mapping.

Composition

Bloomingdale soil and similar components: 85 to 95 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Hamblen and Steadman soils

Similar: Somewhat poorly drained soils

Typical Profile

Surface layer:

0 to 4 inches—dark grayish brown silt loam

Subsoil:

4 to 38 inches—grayish brown and gray silty clay

Substratum:

38 to 60 inches—gray silty clay

Soil Properties and Qualities

Drainage class: Poorly drained

Permeability: Slow

Available water capacity: High

Depth to seasonal high water table: 0 to 1 foot (undrained)

Flooding: Occasional; brief duration

Ponding: Occasional; brief to long duration

Soil reaction: Moderately acid to moderately alkaline

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The flooding hazard and the wetness in the root zone are the major limitations affecting crop production. Crops that require a short growing season and can tolerate wetness and flooding are best suited to this soil.
- Wetness delays planting or hinders harvesting operations in most years.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting pasture and hay are the high water table, flooding, and ponding.
- Permitting grazing when the soil is saturated can cause compaction of the soil surface, which can result in slower infiltration rates and loss of the stand.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The flooding, ponding, and wetness are limitations that are extremely difficult to overcome.

Interpretive Group

Land capability classification: 4w

Bh—Bloomingdale-Hamblen complex, 0 to 3 percent slopes, occasionally flooded

Setting

Landscape position: Flood plains

Major use: Most areas are cleared and used for pasture or hay

Composition

Bloomingdale soil and similar components: 50 to 75 percent

Hamblen soil and similar components: 15 to 40 percent
Minor components: 10 to 35 percent

Minor Components

Contrasting: Heiskell, Steadman, and Whitwell soils
Similar: Somewhat poorly drained soils

Typical Profile

Bloomingtondale

Surface layer:

0 to 4 inches—dark grayish brown silt loam

Subsoil:

4 to 38 inches—grayish brown and gray silty clay

Substratum:

38 to 60 inches—gray silty clay

Hamblen

Surface layer:

0 to 6 inches—dark brown silt loam

Subsoil:

6 to 44 inches—brown and light yellowish brown clay loam

44 to 60 inches—yellowish brown and light brownish gray clay loam

Substratum:

60 to 67 inches—yellowish brown and gray clay loam

Soil Properties and Qualities

Drainage class: Bloomingtondale—poorly drained or very poorly drained; Hamblen—moderately well drained

Permeability: Bloomingtondale—slow; Hamblen—moderate

Available water capacity: High

Depth to seasonal high water table: Bloomingtondale—0 to 1 foot; Hamblen—2 to 3 feet

Flooding: Occasional; brief duration

Soil reaction: Bloomingtondale—moderately acid to moderately alkaline; Hamblen—strongly acid to neutral

Depth to bedrock: More than 60 inches

Shrink-swell potential: Bloomingtondale—moderate; Hamblen—low

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The flooding hazard and the wetness in the root zone are the major limitations affecting crop production. Crops that require a short growing season and can tolerate wetness are best suited to these soils.
- Wetness delays planting or hinders harvesting operations in most years.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The main limitations affecting pasture and hay are the high water table, especially in areas of the Bloomingtondale soil, and flooding.

- Permitting grazing when the soil is saturated can cause compaction of the soil surface, which can result in slower infiltration rates and loss of the stand.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The flooding and wetness are limitations that are extremely difficult to overcome.

Interpretive Group

Land capability classification: 4w

CcC—Coghill-Corryton complex, 5 to 12 percent slopes

Setting

Landscape position: Ridgetops and shoulders

Major use: Many areas are in woodland; some areas are cleared and used for pasture or for residential or commercial developments

Composition

Coghill soil and similar components: 40 to 60 percent

Corryton soil and similar components: 20 to 45 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Apison, Nonaburg, and Townley soils

Similar: Soils that have less clay in the subsoil

Typical Profile

Coghill

Surface layer:

0 to 2 inches—partially decomposed hardwood litter

2 to 6 inches—dark reddish brown loam

Subsurface layer:

6 to 13 inches—reddish brown clay loam

Subsoil:

13 to 26 inches—yellowish red clay loam

26 to 34 inches—yellowish red sandy clay

34 to 44 inches—yellowish red and yellowish brown channery clay loam

Substratum:

44 to 61 inches—yellowish brown and yellowish red clay loam

Corryton

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Coghill—moderate; Corryton—moderately slow

Available water capacity: Coghill—moderate; Corryton—high

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Coghill—low; Corryton—moderate

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This map unit has few limitations affecting pasture and hay management.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The limitations affecting most urban uses are the moderately slow permeability and the moderate shrink-swell potential of the Corryton soil. These limitations cause problems for excavations, some sanitary facilities, and footers or basements. They may be minimized with careful design and construction.
- Slope is an additional limitation that can often be overcome by adequate design and construction.

Interpretive Group

Land capability classification: 3e

CcD—Coghill-Corryton complex, 12 to 25 percent slopes

Setting

Landscape position: Shoulders, footslopes, and toeslopes

Major use: Most areas are in woodland consisting of mixed hardwoods

Composition

Coghill soil and similar components: 70 to 85 percent

Corryton soil and similar components: 12 to 25 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Apison, Nonaburg, and Townley soils

Similar: Soils that have less clay in the subsoil

Typical Profile

Coghill

Surface layer:

0 to 2 inches—partially decomposed hardwood litter

2 to 6 inches—dark reddish brown loam

Subsurface layer:

6 to 13 inches—reddish brown clay loam

Subsoil:

13 to 26 inches—yellowish red clay loam

26 to 34 inches—yellowish red sandy clay

34 to 44 inches—yellowish red and yellowish brown channery clay loam

Substratum:

44 to 61 inches—yellowish brown and yellowish red clay loam

Corryton

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Coghill—moderate; Corryton—moderately slow

Available water capacity: Coghill—moderate; Corryton—high

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Coghill—low; Corryton—moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth in moderately steep areas.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope, the moderately slow permeability, and the moderate shrink-swell potential of the Corryton soil. Because of the severity of the limitations, there can be considerable expense in designing and installing structures or facilities that function properly.

Interpretive Group

Land capability classification: 4e

CcE—Coghill-Corryton complex, 25 to 65 percent slopes, rocky

Setting

Landscape position: Side slopes and backslopes

Major use: Woodland

Composition

Coghill soil and similar components: 35 to 60 percent

Corryton soil and similar components: 20 to 44 percent

Minor components: 5 to 20 percent

Minor Components

Contrasting: Apison, Nonaburg, and Townley soils and areas of rock outcrop

Similar: Soils that have less clay in the subsoil

Typical Profile

Coghill

Surface layer:

0 to 2 inches—partially decomposed hardwood litter

2 to 6 inches—dark reddish brown loam

Subsurface layer:

6 to 13 inches—reddish brown clay loam

Subsoil:

13 to 26 inches—yellowish red clay loam

26 to 34 inches—yellowish red sandy clay

34 to 44 inches—yellowish red and yellowish brown channery clay loam

Substratum:

44 to 61 inches—yellowish brown and yellowish red clay loam

Corryton

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Coghill—moderate; Corryton—moderately slow

Available water capacity: Coghill—moderate; Corryton—high

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Coghill—low; Corryton—moderate

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation on very steep slopes, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of the equipment use limitation on very steep slopes, establishing and maintaining pastures is difficult in most areas.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitation affecting most urban uses is the slope. Because of the severity of the limitation, there is considerable expense in the design and construction of structures and facilities that function properly.

Interpretive Group

Land capability classification: 7e

CeB3—Collegedale silty clay loam, 2 to 5 percent slopes, severely eroded

Setting

Landscape position: Ridge crests

Major use: Most areas are cleared and used as pasture or hay

Composition

Collegedale soil and similar components: 70 to 100 percent
Minor components: 0 to 30 percent

Minor Components

Contrasting: Etowah, Loyston, Minvale, and Talbott soils
Similar: Corryton and Dewey soils

Typical Profile

Surface layer:
0 to 3 inches—dark brown silty clay loam

Subsurface layer:
3 to 7 inches—brown silty clay loam

Subsoil:
7 to 62 inches—yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Depth to seasonal high water table: More than 6 feet
Flooding: None
Soil reaction: Very strongly acid or strongly acid (except in limed areas)
Depth to bedrock: More than 60 inches
Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- The root zone is limited in many areas because much of the original topsoil was lost to erosion.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The clayey subsoil and shrink-swell potential are limitations affecting urban uses. Designing structures and facilities that minimize the influence of the limitations can sometimes overcome them.

Interpretive Group

Land capability classification: 3e

**CeC3—Collegedale silty clay loam, 5 to 12 percent slopes,
severely eroded**

Setting

Landscape position: Ridge shoulders and side slopes

Major use: Most areas are cleared and used as pasture or hay

Composition

Collegedale soil and similar components: 60 to 80 percent

Minor components: 20 to 40 percent

Minor Components

Contrasting: Etowah, Loyston, Minvale, and Talbott soils

Similar: Corryton and Dewey soils

Typical Profile

Surface layer:

0 to 3 inches—dark brown silty clay loam

Subsurface layer:

3 to 7 inches—brown silty clay loam

Subsoil:

7 to 62 inches—yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- The root zone is limited in many areas because much of the original topsoil was lost to erosion.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- This severely eroded soil has limited rooting depth in places, and productivity may be limited in some areas due to droughtiness.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The clayey subsoil and shrink-swell potential are limitations affecting urban uses. Designing structures and facilities that minimize the influence of the limitations can sometimes overcome them.

Interpretive Group

Land capability classification: 4e

CeD3—Collegedale silty clay loam, 12 to 25 percent slopes, severely eroded

Setting

Landscape position: Side slopes of upland ridges

Major use: Most areas are cleared and used as pasture or hay

Composition

Collegedale soil and similar components: 75 to 100 percent

Minor components: 0 to 25 percent

Minor Components

Contrasting: Etowah, Loyston, Minvale, and Talbott soils

Similar: Corryton and Dewey soils

Typical Profile

Surface layer:

0 to 3 inches—dark brown silty clay loam

Subsurface layer:

3 to 7 inches—brown silty clay loam

Subsoil:

7 to 62 inches—yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- The root zone is limited in many areas because much of the original topsoil was lost to erosion.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- This severely eroded soil has limited rooting depth in places, and productivity may be limited in some areas due to droughtiness.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting urban uses are the slope, the clayey subsoil, and the shrink-swell potential. Because of the severity of the limitations, there is considerable expense in designing structures and facilities that function properly.

Interpretive Group

Land capability classification: 6e

CgB—Collegedale-Loyston-Rock outcrop complex, 2 to 5 percent slopes

Setting

Landscape position: Crests of ridges underlain by limestone

Major use: Most areas are cleared and used as pasture

Composition

Collegedale soil and similar components: 50 to 75 percent

Loyston soil and similar components: 20 to 40 percent

Rock outcrop: 10 to 30 percent

Minor components: 0 to 20 percent

Minor Components

Contrasting: Etowah, Minvale, and Talbott soils

Similar: Corryton and Dewey soils

Typical Profile

Collegedale

Surface layer:

0 to 3 inches—dark brown silty clay loam

Subsurface layer:

3 to 7 inches—brown silty clay loam

Subsoil:

7 to 62 inches—yellowish red clay

Loyston

Surface layer:

0 to 1 inch—brown channery clay

Subsurface layer:

1 to 3 inches—dark yellowish brown channery clay loam

Subsoil:

3 to 10 inches—dark yellowish brown channery clay

Substratum:

10 to 15 inches—weathered shaly limestone bedrock

15 inches—hard shaly limestone bedrock

Rock outcrop

This part of the map unit consists of shaly limestone rock outcrops that occur as individual rocks or ledges.

Properties and Qualities of the Collegedale and Loyston Soils

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Collegedale—high; Loyston—very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Collegedale—very strongly acid or strongly acid (except in limed areas);

Loyston—moderately acid to slightly alkaline

Depth to bedrock: Collegedale—more than 60 inches; Loyston—10 to 20 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting cultivated crops are the rock outcrops and the limited available water capacity and shallow rooting depth of the Loyston soil.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The main limitations affecting pasture and hay are the low available water capacity of the Loyston soil and rock outcrops.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the moderately slow permeability and the moderate shrink-swell potential in the subsoil, the limited depth to bedrock in the Loyston soil, and rock outcrops. Because of the severity of the limitations, there can be considerable expense in designing and installing structures or facilities that function properly.

Interpretive Group

Land capability classification: 6e

CkC—Collegedale-Talbott complex, 5 to 12 percent slopes, rocky

Setting

Landscape position: Shoulders and upper side slopes of limestone ridges

Major use: Most areas are cleared and used as pasture

Composition

Collegedale soil and similar components: 50 to 75 percent

Talbott soil and similar components: 15 to 30 percent

Minor components: 0 to 33 percent

Minor Components

Contrasting: Etowah, Loyston, and Minvale soils and areas of rock outcrop

Similar: Corryton and Dewey soils

Typical Profile

Collegedale

Surface layer:

0 to 3 inches—dark brown silty clay loam

Subsurface layer:

3 to 7 inches—brown silty clay loam

Subsoil:

7 to 62 inches—yellowish red clay

Talbott

Surface layer:

0 to 3 inches—brown silty clay loam

Subsoil:

3 to 27 inches—yellowish red clay

Substratum:

27 to 32 inches—mottled red and yellowish brown clay

32 inches—limestone bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Collegedale—high; Talbott—low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Collegedale—very strongly acid or strongly acid (except in limed areas);
Talbot—strongly acid to slightly acid

Depth to bedrock: Collegedale—more than 60 inches; Talbot—20 to 40 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting crop production are the severe erosion hazard, the low available water capacity of the Talbot soil, and rock outcrops.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The main limitations affecting pasture and hay are the low available water capacity of the Talbot soil and rock outcrops.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the clayey subsoil, the shrink-swell potential, the limited depth to bedrock in the Talbot soil, and rock outcrops. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 6e

CkD—Collegedale-Talbot complex, 12 to 25 percent slopes, rocky

Setting

Landscape position: Side slopes of ridges underlain by limestone

Major use: Most areas are cleared and used as pasture

Composition

Collegedale soil and similar components: 50 to 75 percent

Talbot soil and similar components: 15 to 30 percent

Minor components: 0 to 33 percent

Minor Components

Contrasting: Etowah, Loyston, and Minvale soils and areas of rock outcrop

Similar: Corryton and Dewey soils

Typical Profile

Collegedale

Surface layer:

0 to 3 inches—dark brown silty clay loam

Subsurface layer:

3 to 7 inches—brown silty clay loam

Subsoil:

7 to 62 inches—yellowish red clay

Talbott

Surface layer:

0 to 3 inches—brown silty clay loam

Subsoil:

3 to 27 inches—yellowish red clay

Substratum:

27 to 32 inches—mottled red and yellowish brown clay

32 inches—limestone bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Collegedale—high; Talbott—low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Collegedale—very strongly acid or strongly acid (except in limed areas);
Talbott—strongly acid to slightly acid

Depth to bedrock: Collegedale—more than 60 inches; Talbott—20 to 40 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting crop production are the severe erosion hazard, the equipment use limitation caused by the slope in some areas, the low available water capacity of the Talbott soil, and rock outcrops.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The main limitations affecting pasture and hay are the low available water capacity of the Talbott soil, rock outcrops, and the slope in some areas.
- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope, the clayey subsoil, the shrink-swell potential, the limited depth to bedrock in the Talbott soil, and rock outcrops. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 6e

CoB—Corryton loam, 2 to 5 percent slopes

Setting

Landscape position: Ridgetops and shoulders

Major use: Most areas are cleared and used for crops, hay, or pasture

Composition

Corryton soil and similar components: 80 to 95 percent

Minor components: 5 to 20 percent

Minor Components

Contrasting: Heiskell, Nonaburg, and Townley soils

Similar: Coghill and Dewey soils

Typical Profile

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- Erosion is a hazard when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, crop rotations, and the use of cover crops are important in controlling erosion and maintaining productivity when crops are grown.

- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The limitations affecting most urban uses are the moderately slow permeability and the moderate shrink-swell potential of the subsoil. These limitations may be minimized with careful design and construction.

Interpretive Group

Land capability classification: 2e

CoC—Corryton loam, 5 to 12 percent slopes

Setting

Landscape position: Ridge crests and shoulders

Major use: Most areas are cleared and used for hay, pasture, or cropland

Composition

Corryton soil and similar components: 75 to 90 percent

Minor components: 10 to 25 percent

Minor Components

Contrasting: Heiskell, Nonaburg, and Townley soils

Similar: Coghill and Dewey soils

Typical Profile

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The limitations affecting most urban uses are the moderately slow permeability and the moderate shrink-swell potential of the subsoil. These limitations may be minimized with careful design and construction.
- The slope is an additional limitation that can often be overcome by adequate design of structures and facilities.

Interpretive Group

Land capability classification: 3e

CoD—Corryton loam, 12 to 25 percent slopes

Setting

Landscape position: Shoulders and side slopes

Major use: Most areas are cleared and used for pasture or hay

Composition

Corryton soil and similar components: 80 to 100 percent

Minor components: 0 to 20 percent

Minor Components

Contrasting: Nonaburg and Townley soils

Similar: Coghill and Dewey soils

Typical Profile

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain tilth in moderately steep areas.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope, the moderately slow permeability, and the moderate shrink-swell potential. Because of the severity of the limitations, there can be considerable expense in designing and installing structures or facilities that function properly.

Interpretive Group

Land capability classification: 4e

CtB—Corryton-Townley complex, 2 to 5 percent slopes

Setting

Landscape position: Ridgetops and shoulders

Major use: Most areas are cleared and used for cropland, pasture, or hay

Composition

Corryton soil and similar components: 50 to 75 percent

Townley soil and similar components: 15 to 50 percent

Minor components: 0 to 35 percent

Minor Components

Contrasting: Heiskell and Nonaburg soils

Similar: Coghill and Dewey soils

Typical Profile

Corryton

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Townley

Surface layer:

0 to 4 inches—brown silt loam

Subsoil:

4 to 17 inches—brown and yellowish red clay

17 to 28 inches—yellowish red channery clay

Substratum:

28 to 33 inches—yellowish red extremely channery clay

33 inches—shale bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Corryton—high; Townley—low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Corryton—very strongly acid to moderately acid (except in limed areas);

Townley—extremely acid to strongly acid

Depth to bedrock: Corryton—more than 60 inches; Townley—20 to 40 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- Erosion is a hazard when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, crop rotations, and the use of cover crops are important in controlling erosion and maintaining productivity when crops are grown.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- The low available water capacity caused by the limited depth to bedrock of the Townley soil is a concern when establishing and maintaining hay and pasture.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The limitations affecting most urban uses are the moderately slow permeability, the moderate shrink-swell potential in the subsoil, and the limited depth to bedrock of the Townley soil. These limitations can sometimes be minimized with careful design and construction.

Interpretive Group

Land capability classification: 3e

CtC—Corryton-Townley complex, 5 to 12 percent slopes

Setting

Landscape position: Ridgetops and shoulders

Major use: Most areas are cleared and used for hay, pasture, or cropland

Composition

Corryton soil and similar components: 60 to 90 percent

Townley soil and similar components: 15 to 30 percent

Minor components: 10 to 25 percent

Minor Components

Contrasting: Heiskell and Nonaburg soils

Similar: Coghill and Dewey soils

Typical Profile

Corryton

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Townley

Surface layer:

0 to 4 inches—brown silt loam

Subsoil:

4 to 17 inches—brown and yellowish red clay

17 to 28 inches—yellowish red channery clay

Substratum:

28 to 33 inches—yellowish red extremely channery clay

33 inches—shale bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Corryton—high; Townley—low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Corryton—very strongly acid to moderately acid (except in limed areas);
Townley—extremely acid to strongly acid

Depth to bedrock: Corryton—more than 60 inches; Townley—20 to 40 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- The low available water capacity caused by the limited depth to bedrock of the Townley soil is a concern when establishing and maintaining hay and pasture.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The limitations affecting most urban uses are the moderately slow permeability, the moderate shrink-swell potential in the subsoil, and the limited depth to bedrock of the Townley soil. These limitations can sometimes be minimized with careful design and construction.
- The slope is an additional limitation that can often be overcome by adequate design of structures and facilities.

Interpretive Group

Land capability classification: 4e

CzC—Corryton-Udorthents-Urban land complex, 2 to 12 percent slopes

Setting

Landscape position: Upland ridges

Major use: Residential and commercial development

Composition

Corryton soil and similar components: 50 to 70 percent

Udorthents and similar components: 15 to 20 percent

Urban land and similar components: 15 to 20 percent
Minor components: 10 to 20 percent

Minor Components

Across the survey area, this map unit contains numerous minor components. It was not generally feasible to map built-up areas in detail.

Typical Profile

Corryton

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Udorthents

Udorthents are soil materials derived from cutting, filling, or other mechanical disturbance of the natural soils. Their properties are strongly influenced by the nature of the original soil materials and the methods of disturbance or placement. Because they are extremely variable, a typical profile is not given.

Urban land

This part of the map unit consists of buildings, roads, streets, parking lots, and similar structures typical of urban areas. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. Because the underlying soil is not observable, a typical profile is not given.

Properties and Qualities of the Corryton Soil and Udorthents

Drainage class: Corryton—well drained; Udorthents—moderately well drained or well drained

Permeability: Corryton—moderately slow; Udorthents—very slow to moderate

Available water capacity: Corryton—high; Udorthents—moderate or high

Depth to seasonal high water table: Corryton—more than 6 feet; Udorthents—2 to more than 6 feet

Flooding: Corryton—none; Udorthents—none or rare

Soil reaction: Corryton—very strongly acid to moderately acid (except in limed areas); Udorthents—extremely acid to neutral

Depth to bedrock: Corryton—more than 60 inches; Udorthents—40 to more than 60 inches

Shrink-swell potential: Corryton—moderate; Udorthents—low or moderate

Use and Management

This map unit consists of areas where land uses are mostly limited to those typical of residential or commercial developments. These uses include residential or commercial building construction, roads, streets, and lawns and landscaping. Because the distribution of disturbed and undisturbed soil is unpredictable, and numerous minor components may be present, an onsite evaluation is needed to determine the suitability of any area for specific uses.

Interpretive Group

Land capability classification: None assigned

CzD—Corryton-Udorthents-Urban land complex, 12 to 25 percent slopes

Setting

Landscape position: Upland ridges

Major use: Residential and commercial development

Composition

Corryton soil and similar components: 50 to 70 percent

Udorthents and similar components: 15 to 20 percent

Urban land and similar components: 15 to 20 percent

Minor components: 10 to 20 percent

Minor Components

Across the survey area, this map unit contains numerous minor components. It was not generally feasible to map built-up areas in detail.

Typical Profile

Corryton

Surface layer:

0 to 6 inches—yellowish brown loam

Subsurface layer:

6 to 13 inches—yellowish brown clay loam

Subsoil:

13 to 33 inches—yellowish brown and strong brown clay

33 to 43 inches—strong brown silty clay

43 to 61 inches—mottled strong brown, red, brownish yellow, and light gray clay

Udorthents

Udorthents are soil materials derived from cutting, filling, or other mechanical disturbance of the natural soils. Their properties are strongly influenced by the nature of the original soil materials and the methods of disturbance or placement. Because they are extremely variable, a typical profile is not given.

Urban land

This part of the map unit consists of buildings, roads, streets, parking lots, and similar structures typical of urban areas. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. Because the underlying soil is not observable, a typical profile is not given.

Properties and Qualities of the Corryton Soil and Udorthents

Drainage class: Corryton—well drained; Udorthents—moderately well drained or well drained

Permeability: Corryton—moderately slow; Udorthents—very slow to moderate

Available water capacity: Corryton—high; Udorthents—moderate or high

Depth to seasonal high water table: Corryton—more than 6 feet; Udorthents—2 to more than 6 feet

Flooding: Corryton—none; Udorthents—none or rare

Soil reaction: Corryton—very strongly acid to moderately acid (except in limed areas);
Udorthents—extremely acid to neutral

Depth to bedrock: Corryton—more than 60 inches; Udorthents—40 to more than 60
inches

Shrink-swell potential: Corryton—moderate; Udorthents—low or moderate

Use and Management

This map unit consists of areas where land uses are mostly limited to those typical of residential or commercial developments. These uses include residential or commercial building construction, roads, streets, and lawns and landscaping. Because the distribution of disturbed and undisturbed soil is unpredictable, and numerous minor components may be present, an onsite evaluation is needed to determine the suitability of any area for specific uses.

Interpretive Group

Land capability classification: None assigned

DeB—Dewey silt loam, 2 to 5 percent slopes

Setting

Landscape position: Ridgetops

Major use: Most areas are cleared and used for pasture, hay, or crop production

Composition

Dewey soil and similar components: 85 to 100 percent

Minor components: 0 to 15 percent

Minor Components

Contrasting: Collegedale, Etowah, and Minvale soils

Similar: Corryton, Fullerton, and Waynesboro soils and eroded Dewey soils

Typical Profile

Surface layer:

0 to 5 inches—brown silt loam

5 to 9 inches—dark brown silty clay loam

Subsoil:

9 to 66 inches—red and yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- This soil is suited to all of the crops, grasses, and legumes that are adapted to the local climate.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Well suited

Management measures and considerations:

- The clayey subsoil is a limitation in some areas. This limitation can often be overcome by designing facilities that minimize its influence.

Interpretive Group

Land capability classification: 2e

DeC2—Dewey silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Ridgetops and shoulders

Major use: Most areas are cleared and used for hay, pasture, or crop production

Composition

Dewey soil and similar components: 60 to 80 percent

Minor components: 20 to 40 percent

Minor Components

Contrasting: Collegedale, Etowah, and Minvale soils

Similar: Corryton, Fullerton, and Waynesboro soils

Typical Profile

Surface layer:

0 to 2 inches—brown silt loam

2 to 9 inches—dark brown silty clay loam

Subsoil:

9 to 66 inches—red and yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Well suited

Management measures and considerations:

- The slope and the clayey subsoil are limitations in some areas. These limitations can often be overcome by designing facilities that minimize their influence.

Interpretive Group

Land capability classification: 3e

DeD2—Dewey silt loam, 12 to 25 percent slopes, eroded

Setting

Landscape position: Shoulders and side slopes

Major use: Most areas are cleared and used for pasture or hay

Composition

Dewey soil and similar components: 80 to 100 percent

Minor components: 0 to 20 percent

Minor Components

Contrasting: Collegedale, Etowah, and Minvale soils

Similar: Corryton, Fullerton, and Waynesboro soils

Typical Profile

Surface layer:

0 to 2 inches—brown silt loam

2 to 9 inches—dark brown silty clay loam

Subsoil:

9 to 66 inches—red and yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, crop rotations, and the use of cover crops are important in controlling erosion and maintaining productivity when crops are grown.
- The use of contour strips, grassed waterways, field borders, and filter strips in moderately steep areas helps to prevent sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The slope may limit the use of this soil for hay.
- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The slope and the clayey subsoil are limitations affecting urban uses. Designing structures and facilities that minimize the influence of the limitations can sometimes overcome them.

Interpretive Group

Land capability classification: 4e

DeE2—Dewey loam, 25 to 40 percent slopes, eroded

Setting

Landscape position: Side slopes and backslopes

Major use: Many areas are cleared and used as pasture; a few areas are in woodland

Composition

Dewey soil and similar components: 75 to 95 percent

Minor components: 5 to 25 percent

Minor Components

Contrasting: Bodine, Etowah, Minvale, and Talbott soils

Similar: Coghill, Corryton, and Fullerton soils

Typical Profile

Surface layer:

0 to 2 inches—brown loam

2 to 9 inches—dark brown clay loam

Subsoil:

9 to 66 inches—red and yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by the slope, crop production is impractical.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- The slope limits the use of this soil for hay.
- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on steep pastures and hayland.
- Good pasture management is essential in controlling erosion and maintaining productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The slope is a limitation affecting most urban uses.

Interpretive Group

Land capability classification: 6e

DgE3—Dewey-Coghill complex, 25 to 60 percent slopes, severely eroded

Setting

Landscape position: Side slopes and backslopes

Major use: Pasture or woodland

Composition

Dewey soil and similar components: 50 to 65 percent

Coghill soil and similar components: 15 to 30 percent

Minor components: 10 to 35 percent

Minor Components

Contrasting: Bodine, Etowah, Minvale, Talbott, and Townley soils

Similar: Coghill, Corryton, and Fullerton soils

Typical Profile

Dewey

Surface layer:

0 to 2 inches—brown loam

Subsoil:

2 to 66 inches—red and yellowish red clay

Coghill

Surface layer:

0 to 2 inches—dark reddish brown loam

Subsurface layer:

2 to 13 inches—reddish brown clay loam

Subsoil:

13 to 26 inches—yellowish red clay loam

26 to 34 inches—yellowish red sandy clay

34 to 44 inches—yellowish red and yellowish brown channery clay loam

Substratum:

44 to 61 inches—yellowish brown weathered shale and fine-grained sandstone

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Dewey—high; Coghill—moderate

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Dewey—very strongly acid or strongly acid (except in limed areas);

Coghill—very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Dewey—moderate; Coghill—low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by the slope, crop production is impractical.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- The steepest parts of this map unit are unsited to hay production.

- Because of the equipment use limitation in the steeper areas, establishing and maintaining pastures is difficult.
- Good pasture management is essential in controlling erosion and maintaining productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitation affecting most urban uses is the slope. Because of the severity of the limitation, there can be considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 6e

DwD—Dewey-Etowah complex, 12 to 20 percent slopes

Setting

Landscape position: Shoulders and side slopes

Major use: Most areas are used for pasture or hay

Composition

Dewey soil and similar components: 45 to 55 percent

Etowah soil and similar components: 40 to 50 percent

Minor components: 0 to 15 percent

Minor Components

Contrasting: Bodine and Minvale soils

Similar: Fullerton soils

Typical Profile

Dewey

Surface layer:

0 to 2 inches—brown silt loam

2 to 9 inches—dark brown silty clay loam

Subsoil:

9 to 66 inches—red and yellowish red clay

Etowah

Surface layer:

0 to 10 inches—brown silt loam

Subsurface layer:

10 to 17 inches—strong brown silty clay loam

Subsoil:

17 to 64 inches—yellowish red clay loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Dewey—moderate; Etowah—low

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, crop rotations, and the use of cover crops are important in controlling erosion and maintaining productivity when crops are grown.
- The use of contour strips, grassed waterways, field borders, and filter strips in moderately steep areas helps to prevent sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The slope may limit the use of this map unit for hay.
- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The slope and the clayey subsoil of the Dewey soil are limitations affecting urban uses. Designing structures and facilities that minimize the influence of the limitations can sometimes overcome them.

Interpretive Group

Land capability classification: 4e

DwE—Dewey-Etowah complex, 20 to 35 percent slopes

Setting

Landscape position: Side slopes and backslopes

Major use: Most areas are used for pasture or are idle land

Composition

Dewey soil and similar components: 60 to 75 percent

Etowah soil and similar components: 20 to 30 percent

Minor components: 0 to 20 percent

Minor Components

Contrasting: Bodine and Minvale soils

Similar: Fullerton soils

Typical Profile

Dewey

Surface layer:

0 to 2 inches—brown silt loam

2 to 9 inches—dark brown silty clay loam

Subsoil:

9 to 66 inches—red and yellowish red clay

Etowah

Surface layer:

0 to 10 inches—brown silt loam

Subsurface layer:

10 to 17 inches—strong brown silty clay loam

Subsoil:

17 to 64 inches—yellowish red clay loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Dewey—moderate; Etowah—low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by the slope, crop production is impractical.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- The slope limits the use of this map unit for hay.
- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on steep pastures and hayland.
- Good pasture management is essential in controlling erosion and maintaining productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The slope is a limitation affecting most urban uses.

Interpretive Group

Land capability classification: 6e

DyC—Dewey-Udorthents-Urban land complex, 2 to 12 percent slopes

Setting

Landscape position: Upland ridges

Major use: Residential and commercial development

Composition

Dewey soil and similar components: 50 to 70 percent

Udorthents and similar components: 15 to 20 percent

Urban land and similar components: 15 to 20 percent

Minor components: 10 to 20 percent

Minor Components

Across the survey area, this map unit contains numerous minor components. It was not generally feasible to map built-up areas in detail.

Typical Profile

Dewey

Surface layer:

0 to 2 inches—brown silt loam

2 to 9 inches—dark brown silty clay loam

Subsoil:

9 to 66 inches—red and yellowish red clay

Udorthents

Udorthents are soil materials derived from cutting, filling, or other mechanical disturbance of the natural soils. Their properties are strongly influenced by the nature of the original soil materials and the methods of disturbance or placement. Because Udorthents are extremely variable, a typical profile is not given.

Urban land

This part of the map unit consists of buildings, roads, streets, parking lots, and similar structures typical of urban areas. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. Because the underlying soil is not observable, a typical profile is not given.

Properties and Qualities of the Dewey Soil and Udorthents

Drainage class: Dewey—well drained; Udorthents—moderately well drained or well drained

Permeability: Dewey—moderate; Udorthents—very slow to moderate

Available water capacity: Dewey—high; Udorthents—moderate or high

Depth to seasonal high water table: Dewey—more than 6 feet; Udorthents—2 to more than 6 feet

Flooding: Dewey—none; Udorthents—none or rare

Soil reaction: Dewey—very strongly acid or strongly acid (except in limed areas);

Udorthents—extremely acid to neutral

Depth to bedrock: Dewey—more than 60 inches; Udorthents—40 to more than 60 inches

Shrink-swell potential: Dewey—moderate; Udorthents—low or moderate

Use and Management

This map unit consists of areas where land uses are mostly limited to those typical of residential or commercial developments. These uses include residential or commercial building construction, roads, streets, and lawns and landscaping. Because the distribution of disturbed and undisturbed soil is unpredictable, and numerous minor components may be present, an onsite evaluation is needed to determine the suitability of any area for specific uses.

Interpretive Group

Land capability classification: None assigned

DyD—Dewey-Udorthents-Urban land complex, 12 to 25 percent slopes

Setting

Landscape position: Upland ridges

Major use: Residential and commercial development

Composition

Dewey soil and similar components: 50 to 70 percent

Udorthents and similar components: 15 to 20 percent

Urban land and similar components: 15 to 20 percent

Minor components: 10 to 20 percent

Minor Components

Across the survey area, this map unit contains numerous minor components. It was not generally feasible to map built-up areas in detail.

Typical Profile

Dewey

Surface layer:

0 to 2 inches—brown silt loam

2 to 9 inches—dark brown silty clay loam

Subsoil:

9 to 66 inches—red and yellowish red clay

Udorthents

Udorthents are soil materials derived from cutting, filling, or other mechanical disturbance of the natural soils. Their properties are strongly influenced by the nature of the original soil materials and the methods of disturbance or placement. Because Udorthents are extremely variable, a typical profile is not given.

Urban land

This part of the map unit consists of buildings, roads, streets, parking lots, and similar structures typical of urban areas. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. Because the underlying soil is not observable, a typical profile is not given.

Properties and Qualities of the Dewey Soil and Udorthents

Drainage class: Dewey—well drained; Udorthents—moderately well drained or well drained

Soil Survey of Knox County, Tennessee

Permeability: Dewey—moderate; Udorthents—very slow to moderate
Available water capacity: Dewey—high; Udorthents—moderate or high
Depth to seasonal high water table: Dewey—more than 6 feet; Udorthents—2 to more than 6 feet
Flooding: Dewey—none; Udorthents—none or rare
Soil reaction: Dewey—very strongly acid or strongly acid (except in limed areas); Udorthents—extremely acid to neutral
Depth to bedrock: Dewey—more than 60 inches; Udorthents—40 to more than 60 inches
Shrink-swell potential: Dewey—moderate; Udorthents—low or moderate

Use and Management

This map unit consists of areas where land uses are mostly limited to those typical of residential or commercial developments. These uses include residential or commercial building construction, roads, streets, and lawns and landscaping. Because the distribution of disturbed and undisturbed soil is unpredictable, and numerous minor components may be present, an onsite evaluation is needed to determine the suitability of any area for specific uses.

Interpretive Group

Land capability classification: None assigned

Dz—Dumps, landfills

Setting

Landscape position: Upland ridges
Major use: Disposal and storage of domestic waste

Composition

Dumps, landfills, and similar components: 70 to 90 percent
Minor components: 10 to 30 percent

Minor Components

Similar: Areas of Dewey and Etowah soils and Udorthents

Soil Properties and Qualities

Soil materials in areas of this map unit are disturbed and extremely variable. Most areas consist of soil material that has been moved and stockpiled to create a disposal area for domestic solid waste. Stockpiled soils are then used to cover the wastes. An onsite evaluation is needed to determine the suitability of any area for specific uses.

Use and Management

The primary concern is the erosion hazard. An erosion-control plan, including such practices as erosion barriers, diversions, and rock-lined vegetated waterways, is essential. Prompt revegetation of inactive areas is recommended. Plants that can tolerate a wide range of soil conditions are best suited.

Interpretive Group

Land capability classification: None assigned

EmB—Emory silt loam, 2 to 5 percent slopes

Setting

Landscape position: Drainageways and upland depressions

Major use: Cropland, pasture, or hay

Composition

Emory soil and similar components: 70 to 95 percent

Minor components: 5 to 30 percent

Minor Components

Contrasting: Moderately well drained soils and Dewey soils

Similar: Etowah and Minvale soils

Typical Profile

Surface layer:

0 to 5 inches—dark brown silt loam

Subsoil:

5 to 14 inches—dark brown silty clay loam

14 to 21 inches—very dark gray silt loam

21 to 32 inches—reddish brown silty clay loam

32 to 44 inches—yellowish red clay loam

44 to 70 inches—yellowish red clay and gravelly clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Very high

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Strongly acid to slightly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- This soil is suited to all of the crops, grasses, and legumes that are adapted to the local climate.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- Wetness is a limitation in some areas. This limitation can often be overcome by designing facilities that minimize its influence.

Interpretive Group

Land capability classification: 2e

EmC—Emory silt loam, 5 to 12 percent slopes

Setting

Landscape position: Drainageways

Major use: Cropland, pasture, or hay

Composition

Emory soil and similar components: 80 to 95 percent

Minor components: 5 to 20 percent

Minor Components

Contrasting: Dewey soils

Similar: Etowah soils

Typical Profile

Surface layer:

0 to 5 inches—dark brown silt loam

Subsoil:

5 to 14 inches—dark brown silty clay loam

14 to 21 inches—very dark gray silt loam

21 to 32 inches—reddish brown silty clay loam

32 to 44 inches—yellowish red clay loam

44 to 70 inches—yellowish red clay and gravelly clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Very high

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Strongly acid to slightly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- Wetness is a limitation in some areas. This limitation can often be overcome by designing facilities that minimize its influence.

Interpretive Group

Land capability classification: 3e

EtB—Etowah loam, 2 to 5 percent slopes

Setting

Landscape position: Stream terraces

Major use: Hay, pasture, or cropland

Composition

Etowah soil and similar components: 90 to 100 percent

Minor components: 0 to 10 percent

Minor Components

Contrasting: Waynesboro soils

Similar: Shady soils

Typical Profile

Surface layer:

0 to 10 inches—brown loam

Subsurface layer:

10 to 17 inches—strong brown clay loam

Subsoil:

17 to 64 inches—yellowish red clay loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- This soil is suited to all of the crops, grasses, and legumes that are adapted to the local climate.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting urban uses.

Interpretive Group

Land capability classification: 2e

EvB—Etowah-Minvale complex, 2 to 5 percent slopes

Setting

Landscape position: Upland drainageways

Major use: Most areas are cleared and used for pasture or hay

Composition

Etowah soil and similar components: 40 to 70 percent

Minvale soil and similar components: 20 to 40 percent

Minor components: 10 to 40 percent

Minor Components

Contrasting: Bodine, Dewey, Fullerton, and Rockdell soils

Similar: Shady soils and soils that have less clay in the subsoil

Typical Profile

Etowah

Surface layer:

0 to 10 inches—brown loam

Subsurface layer:

10 to 17 inches—strong brown clay loam

Subsoil:

17 to 64 inches—yellowish red clay loam

Minvale

Surface layer:

0 to 4 inches—dark yellowish brown loam

Subsurface layer:

4 to 9 inches—yellowish brown gravelly loam

Subsoil:

9 to 22 inches—yellowish brown gravelly clay loam

22 to 41 inches—yellowish red gravelly clay loam

41 to 60 inches—strong brown, yellowish red, and brownish yellow very gravelly clay loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- This map unit is suited to all of the crops, grasses, and legumes that are adapted to the local climate.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This map unit has few limitations affecting pasture and hay.

Urban development

Suitability: Well suited

Management measures and considerations:

- This map unit has few limitations affecting most urban uses.

Interpretive Group

Land capability classification: 2e

FuC2—Fullerton gravelly silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Ridgetops and shoulders

Major use: Most areas are cleared and used for hay, pasture, or crop production

Composition

Fullerton soil and similar components: 85 to 95 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Bodine, Etowah, Minvale, and Rockdell soils

Similar: Dewey and Corryton soils

Typical Profile

Surface layer:

0 to 4 inches—dark grayish brown gravelly silt loam

Subsurface layer:

4 to 20 inches—yellowish brown gravelly loam

Subsoil:

20 to 41 inches—yellowish red gravelly clay

41 to 51 inches—yellowish red clay

51 to 60 inches—yellowish red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The slope and the clayey subsoil are limitations in some areas. These limitations can often be overcome by designing facilities that minimize their influence.

Interpretive Group

Land capability classification: 3e

FuD2—Fullerton gravelly silt loam, 12 to 25 percent slopes, eroded

Setting

Landscape position: Shoulders and side slopes

Major use: Most areas are cleared and used for pasture or hay

Composition

Fullerton soil and similar components: 85 to 95 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Bodine, Etowah, Minvale, and Rockdell soils

Similar: Dewey and Corryton soils

Typical Profile

Surface layer:

0 to 4 inches—dark grayish brown gravelly silt loam

Subsurface layer:

4 to 20 inches—yellowish brown gravelly loam

Subsoil:

20 to 41 inches—yellowish red gravelly clay

41 to 51 inches—yellowish red clay

51 to 60 inches—yellowish red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, crop rotations, and the use of cover crops are important in controlling erosion and maintaining productivity when crops are grown.
- The use of contour strips, grassed waterways, field borders, and filter strips in moderately steep areas helps to prevent sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The slope may limit the use of this soil for hay.

- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The slope and the clayey subsoil are limitations affecting urban uses. Designing structures and facilities that minimize the influence of the limitations can sometimes overcome them.

Interpretive Group

Land capability classification: 4e

FuE2—Fullerton gravelly silt loam, 25 to 60 percent slopes, eroded

Setting

Landscape position: Side slopes and backslopes

Major use: Many areas are cleared and used for pasture; some areas remain in woodland

Composition

Fullerton soil and similar components: 85 to 95 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Bodine, Etowah, Minvale, and Rockdell soils

Similar: Dewey and Corryton soils

Typical Profile

Surface layer:

0 to 4 inches—dark grayish brown gravelly silt loam

Subsurface layer:

4 to 20 inches—yellowish brown gravelly loam

Subsoil:

20 to 41 inches—yellowish red gravelly clay

41 to 51 inches—yellowish red clay

51 to 60 inches—yellowish red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by the slope, crop production is impractical.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- The slope limits the use of this soil for hay.
- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on steep pastures and hayland.
- Good pasture management is essential in controlling erosion and maintaining productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The slope is a limitation affecting most urban uses.

Interpretive Group

Land capability classification: 6e

FvC—Fullerton-Minvale complex, 5 to 12 percent slopes

Setting

Landscape position: Ridgetops and shoulders

Major use: Most areas are cleared and used for pasture or hay

Composition

Fullerton soil and similar components: 40 to 70 percent

Minvale soil and similar components: 25 to 50 percent

Minor components: 5 to 35 percent

Minor Components

Contrasting: Bodine and Etowah soils and soils that have a perched water table

Similar: Dewey and Corryton soils

Typical Profile

Fullerton

Surface layer:

0 to 4 inches—dark grayish brown gravelly loam

Subsurface layer:

4 to 20 inches—yellowish brown gravelly fine sandy loam

Subsoil:

20 to 41 inches—yellowish red gravelly clay

Soil Survey of Knox County, Tennessee

41 to 51 inches—yellowish red clay
51 to 60 inches—yellowish red gravelly clay

Minvale

Surface layer:

0 to 4 inches—dark yellowish brown loam

Subsurface layer:

4 to 9 inches—yellowish brown gravelly loam

Subsoil:

9 to 22 inches—yellowish brown gravelly clay loam

22 to 41 inches—yellowish red gravelly clay loam

41 to 60 inches—strong brown, yellowish red, and brownish yellow very gravelly clay loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Fullerton—moderate; Minvale—low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This map unit has few limitations affecting pasture and hay.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The slope and the clayey subsoil of the Fullerton soil are limitations in some areas. These limitations can often be overcome by designing facilities that minimize their influence.

Interpretive Group

Land capability classification: 3e

FzC—Fullerton-Udorthents-Urban land complex, 2 to 12 percent slopes

Setting

Landscape position: Upland ridges

Major use: Residential and commercial development

Composition

Fullerton soil and similar components: 50 to 70 percent

Udorthents and similar components: 15 to 20 percent

Urban land and similar components: 15 to 20 percent

Minor components: 10 to 20 percent

Minor Components

Across the survey area, this map unit contains numerous minor components. It was not generally feasible to map built-up areas in detail.

Typical Profile

Fullerton

Surface layer:

0 to 4 inches—dark grayish brown gravelly loam

Subsurface layer:

4 to 20 inches—yellowish brown gravelly fine sandy loam

Subsoil:

20 to 41 inches—yellowish red gravelly clay

41 to 51 inches—yellowish red clay

51 to 60 inches—yellowish red gravelly clay

Udorthents

Udorthents are soil materials derived from cutting, filling, or other mechanical disturbance of the natural soils. Their properties are strongly influenced by the nature of the original soil materials and the methods of disturbance or placement. Because Udorthents are extremely variable, a typical profile is not given.

Urban land

This part of the map unit consists of buildings, roads, streets, parking lots, and similar structures typical of urban areas. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. Because the underlying soil is not observable, a typical profile is not given.

Properties and Qualities of the Fullerton Soil and Udorthents

Drainage class: Fullerton—well drained; Udorthents—moderately well drained or well drained

Permeability: Fullerton—moderate; Udorthents—very slow to moderate

Available water capacity: Fullerton—high; Udorthents—moderate or high

Depth to seasonal high water table: Fullerton—more than 6 feet; Udorthents—2 to more than 6 feet

Flooding: Fullerton—none; Udorthents—none or rare

Soil reaction: Fullerton—very strongly acid or strongly acid (except in limed areas); Udorthents—extremely acid to neutral

Depth to bedrock: Fullerton—more than 60 inches; Udorthents—40 to more than 60 inches

Shrink-swell potential: Fullerton—moderate; Udorthents—low or moderate

Use and Management

This map unit consists of areas where land uses are mostly limited to those typical of residential or commercial developments. These uses include residential or commercial building construction, roads, streets, and lawns and landscaping. Because the distribution of disturbed and undisturbed soil is unpredictable, and numerous minor components may be present, an onsite evaluation is needed to determine the suitability of any area for specific uses.

Interpretive Group

Land capability classification: None assigned

FzD—Fullerton-Udorthents-Urban land complex, 12 to 25 percent slopes

Setting

Landscape position: Upland ridges

Major use: Residential and commercial development

Composition

Fullerton soil and similar components: 50 to 70 percent

Udorthents and similar components: 15 to 20 percent

Urban land and similar components: 15 to 20 percent

Minor components: 10 to 20 percent

Minor Components

Across the survey area, this map unit contains numerous minor components. It was not generally feasible to map built-up areas in detail.

Typical Profile

Fullerton

Surface layer:

0 to 4 inches—dark grayish brown gravelly loam

Subsurface layer:

4 to 20 inches—yellowish brown gravelly fine sandy loam

Subsoil:

20 to 41 inches—yellowish red gravelly clay

41 to 51 inches—yellowish red clay

51 to 60 inches—yellowish red gravelly clay

Udorthents

Udorthents are soil materials derived from cutting, filling, or other mechanical disturbance of the natural soils. Their properties are strongly influenced by the nature of the original soil materials and the methods of disturbance or placement. Because Udorthents are extremely variable, a typical profile is not given.

Urban land

This part of the map unit consists of buildings, roads, streets, parking lots, and

similar structures typical of urban areas. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. Because the underlying soil is not observable, a typical profile is not given.

Properties and Qualities of the Fullerton Soil and Udorthents

Drainage class: Fullerton—well drained; Udorthents—moderately well drained or well drained

Permeability: Fullerton—moderate; Udorthents—very slow to moderate

Available water capacity: Fullerton—high; Udorthents—moderate or high

Depth to seasonal high water table: Fullerton—more than 6 feet; Udorthents—2 to more than 6 feet

Flooding: Fullerton—none; Udorthents—none or rare

Soil reaction: Fullerton—very strongly acid or strongly acid (except in limed areas); Udorthents—extremely acid to neutral

Depth to bedrock: Fullerton—more than 60 inches; Udorthents—40 to more than 60 inches

Shrink-swell potential: Fullerton—moderate; Udorthents—low or moderate

Use and Management

In this map unit, land uses are mostly limited to those typical of residential or commercial developments. These uses include residential or commercial building construction, roads, streets, and lawns and landscaping. Because the distribution of disturbed and undisturbed soil is unpredictable, and numerous minor components may be present, an onsite evaluation is needed to determine the suitability of any area for specific uses.

Interpretive Group

Land capability classification: None assigned

He—Heiskell silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landscape position: Flood plains, upland depressions, and tributary drains

Major use: Most areas are cleared and used as pasture or hay

Composition

Heiskell soil and similar components: 60 to 90 percent

Minor components: 10 to 40 percent

Minor Components

Contrasting: Bloomingdale and Rockdell soils and small areas where water is ponded for significant periods

Similar: Hamblen and Steadman soils

Typical Profile

Surface layer:

0 to 12 inches—brown and dark yellowish brown silt loam

Subsurface layer:

12 to 18 inches—yellowish brown silt loam

Subsoil:

18 to 27 inches—yellowish brown silty clay loam

27 to 46 inches—yellowish brown and gray silty clay loam

Substratum:

46 to 67 inches—gray and light yellowish brown silt loam

Soil Properties and Qualities

Drainage class: Moderately well drained

Permeability: Moderately slow

Available water capacity: High

Depth to seasonal high water table: 2 to 3 feet

Flooding: Occasional

Soil reaction: Moderately acid to slightly alkaline

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- Wetness delays planting or hinders harvesting operations in some years, especially where the soil is susceptible to ponding.
- Crop species that require a short growing season and can tolerate wetness are best suited to this soil.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- Wetness hinders early hay cutting operations in some years, especially where the soil is susceptible to ponding.
- Permitting grazing when the soil is saturated can cause compaction of the soil surface, which can result in slower infiltration rates and loss of the stand.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The flooding and wetness are limitations that are difficult to overcome.

Interpretive Group

Land capability classification: 2w

HeB—Heiskell silt loam, 2 to 5 percent slopes

Setting

Landscape position: Upland drainageways

Major use: Most areas are cleared and used as pasture or hay

Composition

Heiskell soil and similar components: 60 to 80 percent

Minor components: 20 to 40 percent

Minor Components

Contrasting: Bloomingdale, Emory, and Rockdell soils

Similar: Hamblen and Steadman soils

Typical Profile

Surface layer:

0 to 12 inches—brown and dark yellowish brown silt loam

Subsurface layer:

12 to 18 inches—yellowish brown silt loam

Subsoil:

18 to 27 inches—yellowish brown silty clay loam

27 to 46 inches—yellowish brown and gray silty clay loam

Substratum:

46 to 67 inches—gray and light yellowish brown silt loam

Soil Properties and Qualities

Drainage class: Moderately well drained

Permeability: Moderately slow

Available water capacity: High

Depth to seasonal high water table: 2 to 3 feet

Flooding: None

Soil reaction: Moderately acid to slightly alkaline

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- Wetness in the root zone is the major limitation affecting crop production, especially the production of deep-rooted crops.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting urban uses are the wetness and the moderately slow permeability in the lower part of the subsoil in some areas. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 2w

LoC—Loyston-Rock outcrop complex, 5 to 12 percent slopes

Setting

Landscape position: Summits and shoulders of upland ridges

Major use: Many areas are in woodland; some areas are cleared and used as pasture

Composition

Loyston soil and similar components: 50 to 80 percent

Rock outcrop: 10 to 45 percent

Minor components: 5 to 10 percent

Minor Components

Contrasting: Corryton, Talbott, and Townley soils

Similar: Nonaburg soils and very shallow soils

Typical Profile

Loyston

Surface layer:

0 to 1 inch—brown channery clay

Subsurface layer:

1 to 3 inches—dark yellowish brown channery clay loam

Subsoil:

3 to 10 inches—dark yellowish brown channery clay

Substratum:

10 to 15 inches—weathered shaly limestone bedrock

15 inches—hard shaly limestone bedrock

Rock outcrop

This part of the map unit consists of limestone rock outcrops that occur as individual rocks, ledges, or bluffs. Loose stones or boulders also occur on the soil surface in some areas.

Properties and Qualities of the Loyston Soil

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Moderately acid to slightly alkaline

Depth to bedrock: 10 to 20 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the hazard of erosion, the equipment use limitation caused by rock outcrops, and the shallow root zone, crop production is impractical.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting pasture and hay are the very low available water capacity and rock outcrops.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting urban uses are the shallow depth to bedrock and rock outcrops.

Interpretive Group

Land capability classification: 7s

LoE—Loyston silt loam, 25 to 65 percent slopes, rocky

Setting

Landscape position: Backslopes and side slopes

Major use: Woodland

Composition

Loyston soil and similar components: 60 to 80 percent

Minor components: 10 to 35 percent

Minor Components

Contrasting: Corryton, Talbott, and Townley soils and areas of rock outcrop

Similar: Nonaburg soils and very shallow soils

Typical Profile

Surface layer:

0 to 1 inch—brown channery clay

Subsurface layer:

1 to 3 inches—dark yellowish brown channery clay loam

Subsoil:

3 to 10 inches—dark yellowish brown channery clay

Substratum:

10 to 15 inches—weathered shaly limestone bedrock

15 inches—hard shaly limestone bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Moderately acid to slightly alkaline

Depth to bedrock: 10 to 20 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion on very steep slopes, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of the moisture deficiency due to the limited depth to bedrock and the equipment use limitation on very steep slopes, establishing and maintaining pastures is difficult.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting urban uses are the shallow depth to bedrock and the slope.

Interpretive Group

Land capability classification: 7e

LrF—Loyston-Nonaburg-Rock outcrop complex, 35 to 80 percent slopes, flaggy

Setting

Landscape position: Side slopes and backslopes

Major use: Most areas are in mixed woodland

Composition

Loyston soil and similar components: 50 to 65 percent

Nonaburg soil and similar components: 15 to 40 percent

Rock outcrop: 10 to 20 percent

Minor components: 0 to 25 percent

Minor Components

Contrasting: Corryton, Talbott, and Townley soils

Similar: Very shallow soils

Typical Profile

Loyston

Surface layer:

0 to 1 inch—brown flaggy clay

Subsurface layer:

1 to 3 inches—dark yellowish brown channery clay

Subsoil:

3 to 10 inches—dark yellowish brown channery clay

Substratum:

10 to 15 inches—weathered shaly limestone bedrock

15 inches—hard shaly limestone bedrock

Nonaburg

Surface layer:

0 to 1 inch—dark yellowish brown channery silt loam

Subsurface layer:

1 to 3 inches—yellowish brown channery silty clay loam

Subsoil:

3 to 10 inches—yellowish brown channery clay

Substratum:

10 inches—weathered shale bedrock

Rock outcrop

This part of the map unit consists of shaly limestone bedrock that occurs as individual rocks, ledges, or bluffs. Some loose stones, flagstones, or boulders also occur scattered on the soil surface in some areas.

Properties and Qualities of the Loyston and Nonaburg Soils

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Loyston—moderately acid to slightly alkaline; Nonaburg—strongly acid to neutral

Depth to bedrock: 10 to 20 inches

Shrink-swell potential: Loyston—moderate; Nonaburg—low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion caused by the slope, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of the moisture deficiency due to the limited depth to bedrock and the equipment use limitation on very steep slopes, establishing and maintaining pastures is difficult.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting urban uses are the shallow depth to bedrock, rock outcrops, and the slope.

Interpretive Group

Land capability classification: 7e

LtC—Loyston-Talbott-Rock outcrop complex, 2 to 15 percent slopes

Setting

Landscape position: Ridgetops and shoulders

Major use: Many areas are in woodland; cleared areas are used as pasture or remain idle

Composition

Loyston soil and similar components: 30 to 45 percent

Talbott soil and similar components: 15 to 30 percent

Rock outcrop: 15 to 30 percent

Minor components: 5 to 40 percent

Minor Components

Contrasting: Collegedale and Dewey soils and soils that exhibit vertic properties of cracking and a high shrink-swell potential

Similar: Nonaburg soils and very shallow soils

Typical Profile

Loyston

Surface layer:

0 to 1 inch—brown channery clay

Subsurface layer:

1 to 3 inches—dark yellowish brown channery clay loam

Subsoil:

3 to 10 inches—dark yellowish brown channery clay

Substratum:

10 to 15 inches—weathered shaly limestone bedrock

15 inches—hard shaly limestone bedrock

Talbott

Surface layer:

0 to 3 inches—brown silty clay loam

Subsoil:

3 to 27 inches—yellowish red clay

Substratum:

27 to 32 inches—mottled red and yellowish brown clay

32 inches—limestone bedrock

Rock outcrop

This part of the map unit consists of limestone rock outcrops that occur as individual rocks, ledges, or bluffs. Some loose stones or boulders may also occur scattered on the soil surface in some areas.

Properties and Qualities of the Loyston and Talbott Soils

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Loyston—very low; Talbott—low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Loyston—moderately acid to slightly alkaline; Talbott—strongly acid to slightly acid

Depth to bedrock: Loyston—10 to 20 inches; Talbott—20 to 40 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by rock outcrops, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of a moisture deficiency caused by the limited depth to bedrock and the equipment use limitation due to rock outcrops, establishing and maintaining pastures is difficult.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope, the limited depth to bedrock, and rock outcrops. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 7s

LtD—Loyston-Talbott-Rock outcrop complex, 15 to 50 percent slopes

Setting

Landscape position: Shoulders, side slopes, and backslopes

Major use: Many areas are in woodland; cleared areas are used as pasture or remain idle

Composition

Loyston soil and similar components: 30 to 45 percent

Talbott soil and similar components: 15 to 30 percent

Rock outcrop: 15 to 30 percent
Minor components: 5 to 40 percent

Minor Components

Contrasting: Collegedale and Dewey soils
Similar: Nonaburg soils and very shallow soils

Typical Profile

Loyston

Surface layer:

0 to 1 inch—brown channery clay

Subsurface layer:

1 to 3 inches—dark yellowish brown channery clay loam

Subsoil:

3 to 10 inches—dark yellowish brown channery clay

Substratum:

10 to 15 inches—weathered shaly limestone bedrock

15 inches—hard shaly limestone bedrock

Talbott

Surface layer:

0 to 3 inches—brown silty clay loam

Subsoil:

3 to 27 inches—yellowish red clay

Substratum:

27 to 32 inches—mottled red and yellowish brown clay

32 inches—limestone bedrock

Rock outcrop

This part of the map unit consists of limestone rock outcrops that occur as individual rocks, ledges, or bluffs. Some loose stones or boulders may also occur scattered on the soil surface in some areas.

Properties and Qualities of the Loyston and Talbott Soils

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Loyston—very low; Talbott—low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Loyston—moderately acid to slightly alkaline; Talbott—strongly acid to slightly acid

Depth to bedrock: Loyston—10 to 20 inches; Talbott—20 to 40 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by rock outcrops, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of the moisture deficiency caused by the limited depth to bedrock and the equipment use limitation due to the slope and rock outcrops, establishing and maintaining pastures is difficult.
- Good pasture management is essential in controlling erosion and maintaining productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope, the limited depth to bedrock, and rock outcrops. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 7e

MfD—Minvale-Fullerton complex, 12 to 25 percent slopes, stony

Setting

Landscape position: Shoulders and side slopes

Major use: Many areas are in woodland; a few areas are cleared and used mainly as pasture or hay

Composition

Minvale soil and similar components: 50 to 80 percent

Fullerton soil and similar components: 15 to 30 percent

Minor components: 5 to 20 percent

Minor Components

Contrasting: Bodine soils, Rockdell soils, and soils that have a perched water table

Similar: Corryton, Dewey, and Etowah soils

Typical Profile

Minvale

Surface layer:

4 inches to 0—leaf litter

0 to 4 inches—dark yellowish brown loam

Subsurface layer:

4 to 9 inches—yellowish brown gravelly loam

Subsoil:

9 to 22 inches—yellowish brown gravelly clay loam

22 to 41 inches—yellowish red gravelly clay loam

41 to 60 inches—strong brown, yellowish red, and brownish yellow very gravelly clay loam

Fullerton

Surface layer:

2 inches to 0—leaf litter

0 to 4 inches—dark grayish brown gravelly loam

Subsurface layer:

4 to 20 inches—yellowish brown gravelly fine sandy loam

Subsoil:

20 to 41 inches—yellowish red gravelly clay

41 to 51 inches—yellowish red clay

51 to 60 inches—yellowish red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Minvale—low; Fullerton—moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The slope and the clayey subsoil of the Fullerton soil are limitations affecting urban uses. Designing structures and facilities that minimize the influence of the limitations can sometimes overcome them.

Interpretive Group

Land capability classification: 4e

MfE—Minvale-Bodine-Fullerton complex, 25 to 50 percent slopes, stony

Setting

Landscape position: Backslopes, side slopes, and nose slopes

Major use: Most areas are in woodland; a few areas are cleared and used as pasture

Composition

Minvale soil and similar components: 35 to 60 percent

Bodine soil and similar components: 15 to 40 percent

Fullerton soil and similar components: 10 to 30 percent

Minor components: 20 to 40 percent

Minor Components

Contrasting: Rockdell soils

Similar: Corryton, Dewey, and Etowah soils

Typical Profile

Minvale

Surface layer:

4 inches to 0—leaf litter

0 to 4 inches—dark yellowish brown loam

Subsurface layer:

4 to 9 inches—yellowish brown gravelly loam

Subsoil:

9 to 22 inches—yellowish brown gravelly clay loam

22 to 41 inches—yellowish red gravelly clay loam

41 to 60 inches—strong brown, yellowish red, and brownish yellow very gravelly clay loam

Bodine

Surface layer:

2 inches to 0—leaf litter

0 to 1 inch—highly decomposed organic matter

1 to 4 inches—grayish brown extremely gravelly loam

Subsurface layer:

4 to 8 inches—brown very gravelly loam

Subsoil:

8 to 16 inches—yellowish brown very gravelly loam

16 to 28 inches—light yellowish brown extremely gravelly clay loam

28 to 60 inches—strong brown and yellowish red very gravelly silty clay loam

Fullerton

Surface layer:

2 inches to 0—leaf litter

0 to 4 inches—dark grayish brown gravelly loam

Soil Survey of Knox County, Tennessee

Subsurface layer:

4 to 20 inches—yellowish brown gravelly fine sandy loam

Subsoil:

20 to 41 inches—yellowish red gravelly clay

41 to 51 inches—yellowish red clay

51 to 60 inches—yellowish red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Minvale and Fullerton—high; Bodine—low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Minvale and Fullerton—very strongly acid or strongly acid (except in limed areas); Bodine—extremely acid to strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Minvale and Bodine—low; Fullerton—moderate

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by the slope, crop production is impractical.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- Rock fragments in and on the surface layer and the slope are severe limitations affecting pasture and hay management.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitation affecting most urban uses is the slope. Because of the severity of the limitation, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 6e

NnD3—Nonaburg channery silt loam, 12 to 25 percent slopes, severely eroded, rocky

Setting

Landscape position: Shoulders and side slopes

Major use: Most areas are cleared and used as pasture, or they are idle

Composition

Nonaburg soil and similar components: 60 to 80 percent

Minor components: 10 to 38 percent

Minor Components

Contrasting: Corryton and Townley soils and areas of rock outcrop

Similar: Loyston soils and very shallow soils

Typical Profile

Surface layer:

0 to 1 inch—dark yellowish brown channery silt loam

Subsurface layer:

1 to 3 inches—yellowish brown channery silty clay loam

Subsoil:

3 to 10 inches—yellowish brown channery clay

Substratum:

10 inches—weathered shale bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Strongly acid to neutral

Depth to bedrock: 10 to 20 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the hazard of erosion, the very low available water capacity, and the shallow root zone, crop production is impractical.

Pasture and hay

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting pasture and hay are the slope, very low available water capacity, and shallow root zone.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting urban uses are the shallow depth to bedrock and rock outcrops.

Interpretive Group

Land capability classification: 6e

NnE3—Nonaburg channery silt loam, 25 to 50 percent slopes, severely eroded, rocky

Setting

Landscape position: Side slopes and backslopes

Major use: Most areas are cleared and used as pasture, or they are idle

Composition

Nonaburg soil and similar components: 60 to 85 percent

Minor components: 5 to 30 percent

Minor Components

Contrasting: Corryton and Townley soils and areas of rock outcrop

Similar: Loyston soils and very shallow soils

Typical Profile

Surface layer:

0 to 1 inch—dark yellowish brown channery silt loam

Subsurface layer:

1 to 3 inches—yellowish brown channery silty clay loam

Subsoil:

3 to 10 inches—yellowish brown channery clay

Substratum:

10 inches—weathered shale bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Strongly acid to neutral

Depth to bedrock: 10 to 20 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the hazard of erosion, the very low available water capacity, and the shallow root zone, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- The main limitations affecting pasture are the slope, very low available water capacity, and shallow root zone.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting urban uses are the shallow depth to bedrock and rock outcrops.

Interpretive Group

Land capability classification: 7e

**Ph—Pettyjon-Hamblen complex, 0 to 3 percent slopes,
occasionally flooded**

Setting

Landscape position: Flood plains

Major use: Most areas are used for pasture or hay

Composition

Pettyjon soil and similar components: 50 to 80 percent

Hamblen soil and similar components: 20 to 50 percent

Minor components: 0 to 30 percent

Minor Components

Contrasting: Bloomingdale soils

Similar: Heiskell, Steadman, and Whitwell soils

Typical Profile

Pettyjon

Surface layer:

0 to 6 inches—dark brown silt loam

Subsoil:

6 to 65 inches—dark yellowish brown clay loam

Hamblen

Surface layer:

0 to 6 inches—dark brown silt loam

Subsoil:

6 to 44 inches—brown and light yellowish brown clay loam

44 to 60 inches—yellowish brown and light brownish gray clay loam

Substratum:

60 to 67 inches—yellowish brown and gray clay loam

Soil Properties and Qualities

Drainage class: Pettyjon—well drained; Hamblen—moderately well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: Pettyjon—5 to 6 feet; Hamblen—2 to 3 feet

Flooding: Occasional

Soil reaction: Pettyjon—slightly acid to slightly alkaline; Hamblen—strongly acid to neutral

Depth to bedrock: More than 60 inches
Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- Wetness may delay planting or hinder harvesting operations in some years.
- The flooding hazard and the wetness in the root zone are limitations affecting crops that do not tolerate wetness.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- The wetness and flooding may hinder early hay cutting operations in some years.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The flooding and wetness are limitations that are extremely difficult to overcome.

Interpretive Group

Land capability classification: 3w

Pz—Pits, mines, and dumps

Setting

Landscape position: Upland ridges

Major use: Limestone quarries

Composition

Pits, mines, and dumps, and similar components: 85 to 95 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Areas of Loyston and Talbott soils

Similar: Areas with high walls, spoil piles, and other debris

Soil Properties and Qualities

Soil materials in areas of this map unit are extremely variable. An onsite evaluation is needed to determine the suitability of any area for specific land uses.

Use and Management

- Extensive reclamation, landshaping, and erosion-control measures may be required for most uses.

Interpretive Group

Land capability classification: None assigned

Ro—Rockdell gravelly loam, 0 to 4 percent slopes, rarely flooded

Setting

Landscape position: Flood plains

Major use: Most areas are cleared and used for pasture or hay; a few areas are in woodland

Composition

Rockdell soil and similar components: 70 to 100 percent

Minor components: 0 to 30 percent

Minor Components

Contrasting: Bodine, Etowah, Fullerton, and Minvale soils

Similar: Soils that have more clay in the subsoil

Typical Profile

Surface layer:

0 to 6 inches—dark grayish brown gravelly loam

Subsurface layer:

6 to 10 inches—yellowish brown and dark yellowish brown gravelly fine sandy loam

Subsoil:

10 to 23 inches—yellowish brown very cobbly sandy loam

23 to 31 inches—strong brown very gravelly sand clay loam

31 to 60 inches—yellowish red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Low

Depth to seasonal high water table: 3 to 5 feet

Flooding: Rare

Soil reaction: Moderately acid to neutral

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- Unless removed, rock fragments in the surface layer hinder or prevent tillage in many areas.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- The main limitation affecting pasture or hay is the limited available water capacity. It may significantly lower productivity in dry years.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The major limitation affecting most urban uses is the susceptibility to rare flooding. This limitation may often be overcome by designing structures or facilities that minimize its influence.

Interpretive Group

Land capability classification: 2w

SaC—Salacoa gravelly loam, 5 to 12 percent slopes

Setting

Landscape position: Footslopes, benches, the lower portions of side slopes, and backslopes

Major use: Many areas are cleared and used for pasture or hay; however, significant areas remain in woodland

Composition

Salacoa soil and similar components: 70 to 100 percent

Minor components: 0 to 30 percent

Minor Components

Contrasting: Apison, Corryton, and Montevallo soils

Similar: Soils that have less clay in the subsoil

Typical Profile

Surface layer:

0 to 3 inches—slightly decomposed hardwood litter

3 to 6 inches—dark brown gravelly loam

Subsurface layer:

6 to 14 inches—dark brown loam

Subsoil:

14 to 66 inches—strong brown loam

66 to 75 inches—strong brown very channery loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting most urban uses.

Interpretive Group

Land capability classification: 3e

SaD—Salacoa gravelly loam, 12 to 25 percent slopes

Setting

Landscape position: Footslopes, benches, the lower portions of side slopes, and backslopes

Major use: Many areas are cleared and used for pasture or hay; however, significant areas remain in woodland

Composition

Salacoa soil and similar components: 90 to 100 percent

Minor components: 0 to 10 percent

Minor Components

Contrasting: Apison, Corryton, and Montevallo soils

Similar: Soils that have less clay in the subsoil

Typical Profile

Surface layer:

0 to 3 inches—slightly decomposed hardwood litter

3 to 6 inches—dark brown gravelly loam

Subsurface layer:

6 to 14 inches—dark brown loam

Subsoil:

14 to 66 inches—strong brown loam

66 to 75 inches—strong brown very channery loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Well suited

Management measures and considerations:

- This soil is well suited to most urban uses. The slope is the major limitation, but it can often be overcome by adequate design of structures and facilities.

Interpretive Group

Land capability classification: 4e

SbC—Salacoa-Apison complex, 5 to 12 percent slopes

Setting

Landscape position: Footslopes, benches, and the lower portions of side slopes

Major use: Most areas are cleared and used for pasture or hay

Composition

Salacoa soil and similar components: 60 to 85 percent

Apison soil and similar components: 15 to 30 percent

Minor components: 10 to 25 percent

Minor Components

Contrasting: Corryton and Montevallo soils

Similar: Soils that have less clay in the subsoil

Typical Profile

Salacoa

Surface layer:

0 to 6 inches—dark brown gravelly loam

Subsurface layer:

6 to 14 inches—dark brown loam

Subsoil:

14 to 66 inches—strong brown loam

66 to 75 inches—strong brown very channery loam

Apison

Surface layer:

0 to 4 inches—partially decomposed hardwood litter

4 to 7 inches—dark grayish brown gravelly silt loam

Subsurface layer:

7 to 10 inches—yellowish brown gravelly loam

Subsoil:

10 to 21 inches—yellowish brown gravelly loam

21 to 29 inches—dark yellowish brown very gravelly loam

Substratum:

29 inches—weathered shale bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Salacoa—high; Apison—moderate

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Salacoa—very strongly acid to moderately acid (except in limed areas);

Apison—very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: Salacoa—more than 60 inches; Apison—20 to 40 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- The main limitation affecting pasture and hay is the low available water capacity of the Apison soil.

Urban development

Suitability: Well suited

Management measures and considerations:

- The limitation affecting most urban uses is the limited depth to bedrock of the Apison soil. This limitation can sometimes be overcome with careful design and construction.

Interpretive Group

Land capability classification: 3e

SeC—Salacoa-Udorthents-Urban land complex, 2 to 12 percent slopes

Setting

Landscape position: Upland ridges

Major use: Residential and commercial development

Composition

Salacoa soil and similar components: 50 to 70 percent

Udorthents and similar components: 15 to 20 percent

Urban land and similar components: 15 to 20 percent

Minor components: 10 to 20 percent

Minor Components

Across the survey area, this map unit contains numerous minor components. It was not generally feasible to map built-up areas in detail.

Typical Profile

Salacoa

Surface layer:

0 to 6 inches—dark brown gravelly loam

Subsurface layer:

6 to 14 inches—dark brown loam

Subsoil:

14 to 66 inches—strong brown loam

66 to 75 inches—strong brown very channery loam

Udorthents

Udorthents are soil materials derived from cutting, filling, or other mechanical disturbance of the natural soils. Their properties are strongly influenced by the nature of the original soil materials and the methods of disturbance or placement. Because Udorthents are extremely variable, a typical profile is not given.

Urban land

This part of the map unit consists of buildings, roads, streets, parking lots, and similar structures typical of urban areas. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. Because the underlying soil is not observable, a typical profile is not given.

Properties and Qualities of the Salacoa Soil and Udorthents

Drainage class: Salacoa—well drained; Udorthents—moderately well drained or well drained

Permeability: Salacoa—moderate; Udorthents—very slow to moderate

Available water capacity: Salacoa—high; Udorthents—moderate or high

Depth to seasonal high water table: Salacoa—more than 6 feet; Udorthents—2 to more than 6 feet

Flooding: Salacoa—none; Udorthents—none or rare

Soil reaction: Salacoa—very strongly acid to moderately acid (except in limed areas);

Udorthents—extremely acid to neutral

Depth to bedrock: Salacoa—more than 60 inches; Udorthents—40 to more than 60 inches

Shrink-swell potential: Salacoa—low; Udorthents—low or moderate

Use and Management

This map unit consists of areas where land uses are mostly limited to those typical of residential or commercial developments. These uses include residential or commercial building construction, roads, streets, and lawns and landscaping. Because the distribution of disturbed and undisturbed soil is unpredictable, and numerous minor components may be present, an onsite evaluation is needed to determine the suitability of any area for specific uses.

Interpretive Group

Land capability classification: None assigned

SeD—Salacoa-Udorthents-Urban land complex, 12 to 25 percent slopes

Setting

Landscape position: Upland ridges

Major use: Residential and commercial development

Composition

Salacoa soil and similar components: 50 to 70 percent

Udorthents and similar components: 15 to 20 percent

Urban land and similar components: 15 to 20 percent

Minor components: 10 to 20 percent

Minor Components

Across the survey area, this map unit contains numerous minor components. It was not generally feasible to map built-up areas in detail.

Typical Profile

Salacoa

Surface layer:

0 to 6 inches—dark brown gravelly loam

Subsurface layer:

6 to 14 inches—dark brown loam

Subsoil:

14 to 66 inches—strong brown loam

66 to 75 inches—strong brown very channery loam

Udorthents

Udorthents are soil materials derived from cutting, filling, or other mechanical disturbance of the natural soils. Their properties are strongly influenced by the nature of the original soil materials and the methods of disturbance or placement. Because Udorthents are extremely variable, a typical profile is not given.

Urban land

This part of the map unit consists of buildings, roads, streets, parking lots, and similar structures typical of urban areas. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. Because the underlying soil is not observable, a typical profile is not given.

Properties and Qualities of the Salacoa Soil and Udorthents

Drainage class: Salacoa—well drained; Udorthents—moderately well drained or well drained

Permeability: Salacoa—moderate; Udorthents—very slow to moderate

Available water capacity: Salacoa—high; Udorthents—moderate or high

Depth to seasonal high water table: Salacoa—more than 6 feet; Udorthents—2 to more than 6 feet

Flooding: Salacoa—none; Udorthents—none or rare

Soil reaction: Salacoa—very strongly acid to moderately acid (except in limed areas); Udorthents—extremely acid to neutral

Depth to bedrock: Salacoa—more than 60 inches; Udorthents—40 to more than 60 inches

Shrink-swell potential: Salacoa—low; Udorthents—low or moderate

Use and Management

This map unit consists of areas where land uses are mostly limited to those typical of residential or commercial developments. These uses include residential or commercial building construction, roads, streets, and lawns and landscaping. Because the distribution of disturbed and undisturbed soil is unpredictable, and numerous minor components may be present, an onsite evaluation is needed to determine the suitability of any area for specific uses.

Interpretive Group

Land capability classification: None assigned

ShB—Shady loam, 2 to 5 percent slopes

Setting

Landscape position: Low terraces

Major use: Cropland, pasture, or hay

Composition

Shady soil and similar components: 80 to 95 percent

Minor components: 5 to 20 percent

Minor Components

Contrasting: Whitwell soils

Similar: Etowah soils

Typical Profile

Surface layer:

0 to 8 inches—brown loam

Subsoil:

8 to 45 inches—brown and strong brown clay loam

45 to 65 inches—strong brown sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- This soil is suited to all of the crops, grasses, and legumes that are adapted to the local climate.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting urban uses.

Interpretive Group

Land capability classification: 2e

ShC—Shady loam, 5 to 12 percent slopes

Setting

Landscape position: Low terraces

Major use: Cropland, pasture, or hay

Composition

Shady soil and similar components: 90 to 95 percent

Minor components: 5 to 10 percent

Minor Components

Contrasting: Whitwell soils

Similar: Etowah soils

Typical Profile

Surface layer:

0 to 8 inches—brown loam

Subsoil:

8 to 45 inches—brown and strong brown clay loam

45 to 65 inches—strong brown sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting urban uses.

Interpretive Group

Land capability classification: 3e

**So—Shady-Whitwell complex, 0 to 3 percent slopes,
rarely flooded**

Setting

Landscape position: Low terraces

Major use: Cropland, hay, or pasture

Composition

Shady soil and similar components: 60 to 80 percent

Whitwell soil and similar components: 15 to 30 percent

Minor components: 5 to 25 percent

Minor Components

Contrasting: Bloomingdale and Steadman soils

Similar: Etowah soils

Typical Profile

Shady

Surface layer:

0 to 8 inches—brown loam

Subsoil:

8 to 45 inches—brown and strong brown clay loam

45 to 65 inches—strong brown sandy clay loam

Whitwell

Surface layer:

0 to 9 inches—brown loam

Subsurface layer:

9 to 16 inches—brownish yellow loam

Subsoil:

16 to 47 inches—brownish yellow and pale brown clay loam

47 to 60 inches—grayish brown clay

Substratum:

60 to 65 inches—grayish brown sandy clay loam

Soil Properties and Qualities

Drainage class: Shady—well drained; Whitwell—moderately well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: Shady—more than 6 feet; Whitwell—2 to 3 feet

Flooding: Rare

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- This map unit is suited to most of the crops, grasses, and legumes that are adapted to the local climate. Crop species that can tolerate early season flooding and wetness in the root zone are best suited.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This map unit has few limitations affecting pasture and hay; however, plant species that can tolerate wetness in the root zone are best suited.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The flooding and wetness are limitations that are extremely difficult to overcome.

Interpretive Group

Land capability classification: 2w

**St—Steadman silt loam, 0 to 3 percent slopes,
occasionally flooded**

Setting

Landscape position: Flood plains

Major use: Pasture, hay, or cropland

Composition

Steadman soil and similar components: 55 to 80 percent

Minor components: 20 to 45 percent

Minor Components

Contrasting: Bloomingdale and Pettyjon soils, somewhat poorly drained soils, and soils that have clayey subsoils

Similar: Hamblen soils

Typical Profile

Surface layer:

0 to 5 inches—brown silt loam

Subsoil:

5 to 44 inches—dark yellowish brown and yellowish brown silty clay loam

Substratum:

44 to 54 inches—brownish gray silty clay loam

54 to 65 inches—brownish gray silty clay

Soil Properties and Qualities

Drainage class: Moderately well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: 1.5 to 3.0 feet

Flooding: Occasional

Soil reaction: Moderately acid to slightly alkaline

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- Wetness may delay planting or hinder harvesting operations in some years.
- The flooding hazard and the wetness in the root zone are limitations affecting crops that do not tolerate wetness.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- Wetness may hinder early hay cutting operations in some years.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The flooding and wetness are limitations that are extremely difficult to overcome.

Interpretive Group

Land capability classification: 3w

SwB—Swafford silt loam, 2 to 5 percent slopes

Setting

Landscape position: Low stream terraces, toeslopes, and footslopes

Major use: Most areas are cleared and used for pasture, hay, or cropland

Composition

Swafford soil and similar components: 70 to 90 percent

Minor components: 10 to 30 percent

Minor Components

Contrasting: Apison and Salacoa soils

Similar: Hamblen, Heiskell, and Steadman soils

Typical Profile

Surface layer:

0 to 3 inches—dark brown silt loam

Subsoil:

3 to 17 inches—brown and yellowish brown clay loam

17 to 30 inches—yellowish brown and grayish brown, brittle gravelly clay loam

30 to 42 inches—reddish brown, slightly brittle clay loam

42 to 60 inches—reddish brown clay loam

Soil Properties and Qualities

Drainage class: Moderately well drained

Permeability: Moderately slow

Available water capacity: Low

Depth to seasonal high water table: 1.5 to 3.0 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- Wetness resulting from a perched water table is the limitation affecting most urban uses. Designing structures and facilities that minimize the influence of wetness can sometimes overcome this limitation.

Interpretive Group

Land capability classification: 2e

SwC—Swafford silt loam, 5 to 12 percent slopes

Setting

Landscape position: Low stream terraces, toeslopes, and footslopes

Major use: Most areas are cleared and used for pasture, hay, or cropland

Composition

Swafford soil and similar components: 70 to 90 percent

Minor components: 10 to 30 percent

Minor Components

Contrasting: Apison and Salacoa soils

Similar: Hamblen, Heiskell, and Steadman soils

Typical Profile

Surface layer:

0 to 3 inches—dark brown silt loam

Subsoil:

3 to 17 inches—brown and yellowish brown clay loam

17 to 30 inches—yellowish brown and grayish brown, brittle gravelly clay loam

30 to 42 inches—reddish brown, slightly brittle clay loam

42 to 60 inches—reddish brown clay loam

Soil Properties and Qualities

Drainage class: Moderately well drained

Permeability: Moderately slow

Available water capacity: Low

Depth to seasonal high water table: 1.5 to 3.0 feet

Flooding: None

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- Wetness resulting from a perched water table is the limitation affecting most urban uses. Designing structures and facilities that minimize the influence of wetness can sometimes overcome this limitation.

Interpretive Group

Land capability classification: 3e

TbC2—Talbot-Rock outcrop-Bradyville complex, 5 to 20 percent slopes, eroded

Setting

Landscape position: Upland ridges

Major use: Most areas are cleared and used for pasture, or they remain idle

Composition

Talbot soil and similar components: 33 to 43 percent

Rock outcrop: 23 to 47 percent

Bradyville soil and similar components: 12 to 23 percent

Minor components: 0 to 32 percent

Minor Components

Contrasting: Loyston soils

Similar: Collegedale soils

Typical Profile

Talbot

Surface layer:

0 to 3 inches—brown silty clay loam

Subsoil:

3 to 27 inches—yellowish red clay

Substratum:

27 to 32 inches—mottled red and yellowish brown clay

32 inches—limestone bedrock

Rock outcrop

This part of the map unit consists of rock outcrops of shaly limestone that occur as individual rocks, ledges, or bluffs. Some loose stones and flagstones may also occur scattered on the soil surface in some areas.

Bradyville

Surface layer:

0 to 3 inches—dark yellowish brown silt loam

Subsoil:

3 to 32 inches—yellowish red silty clay

32 to 51 inches—yellowish red clay

Substratum:

51 inches—limestone bedrock

Properties and Qualities of the Talbott and Bradyville Soils

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Talbott—low; Bradyville—moderate

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Talbott—strongly acid to slightly acid; Bradyville—strongly acid or moderately acid (except in limed areas)

Depth to bedrock: Talbott—20 to 40 inches; Bradyville—40 to 60 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The main limitations affecting crop production are the erosion hazard, the low available water capacity of the Talbott soil, and rock outcrops.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability for pasture: Moderately suited

Suitability for hay: Unsited

Management measures and considerations:

- The main limitations affecting pasture and hay are the low available water capacity of the Talbott soil and rock outcrops.
- In many areas, rock outcrops prevent the use of mowers, disks, and other equipment needed for hay cutting or pasture renovation.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the clayey subsoil, the shrink-swell potential, the limited depth to bedrock in the Talbott soil, and rock outcrops. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 6e

Tc—Toccoa fine sandy loam, 0 to 3 percent slopes, rarely flooded

Setting

Landscape position: Flood plains

Major use: Cropland, pasture, or hay

Composition

Toccoa soil: 90 to 95 percent

Minor components: 5 to 10 percent

Minor Components

Contrasting: Shady and Whitwell soils

Typical Profile

Surface layer:

0 to 4 inches—brown fine sandy loam

Subsoil:

4 to 18 inches—dark yellowish brown sandy loam

Substratum:

18 to 39 inches—dark yellowish brown sandy loam

39 to 62 inches—yellowish brown loamy sand

Soil Properties and Qualities

Drainage class: Well drained or moderately well drained

Permeability: Moderately rapid

Available water capacity: Moderate

Depth to seasonal high water table: 2.5 to 5.0 feet

Flooding: Rare

Soil reaction: Moderately acid or slightly acid

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- This soil is suited to most crops, grasses, and legumes that are adapted to the local climate. Crops that are seeded late in spring or that can tolerate early season flooding are best suited.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The flooding and wetness are limitations that are difficult to overcome.

Interpretive Group

Land capability classification: 2w

ToC—Townley silt loam, 5 to 12 percent slopes

Setting

Landscape position: Ridgetops and shoulders

Major use: Most areas are used for pasture or hay

Composition

Townley soil and similar components: 85 to 95 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Corryton, Montevallo, and Nonaburg soils

Similar: Apison soils

Typical Profile

Surface layer:

0 to 4 inches—brown silt loam

Subsoil:

4 to 17 inches—brown and yellowish red clay

17 to 28 inches—yellowish red channery clay

Substratum:

28 to 33 inches—yellowish red extremely channery clay

33 inches—shale bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Extremely acid to strongly acid

Depth to bedrock: 20 to 40 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- The low available water capacity limits crop productivity in dry years.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the

appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The main limitation affecting pasture and hay is the low available water capacity.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the moderately slow permeability, the moderate shrink-swell potential of the subsoil, and the limited depth to bedrock. Because of the severity of the limitations, there can be considerable expense in designing structures and facilities that function properly.

Interpretive Group

Land capability classification: 4e

TsD—Townley-Loyston complex, 12 to 25 percent slopes, rocky

Setting

Landscape position: Shoulders and side slopes of ridges

Major use: Many areas are in woodland; cleared areas are used as pasture or remain idle

Composition

Townley soil and similar components: 40 to 60 percent

Loyston soil and similar components: 10 to 35 percent

Minor components: 5 to 48 percent

Minor Components

Contrasting: Coghill and Corryton soils and areas of rock outcrop

Similar: Nonaburg soils and very shallow soils

Typical Profile

Townley

Surface layer:

0 to 4 inches—brown silt loam

Subsoil:

4 to 17 inches—brown and yellowish red clay

17 to 28 inches—yellowish red channery clay

Substratum:

28 to 33 inches—yellowish red extremely channery clay

33 inches—shale bedrock

Loyston

Surface layer:

0 to 1 inch—brown channery clay

Subsurface layer:

1 to 3 inches—dark yellowish brown channery clay loam

Subsoil:

3 to 10 inches—dark yellowish brown channery clay

Substratum:

10 to 15 inches—weathered shaly limestone bedrock

15 inches—hard shaly limestone bedrock

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: Townley—low; Loyston—very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Townley—extremely acid to strongly acid; Loyston—moderately acid to slightly alkaline

Depth to bedrock: Townley—20 to 40 inches; Loyston—10 to 20 inches

Shrink-swell potential: Moderate

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The main limitations affecting pasture and hay are the low available water capacity and rock outcrops.
- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope, the limited depth to bedrock, and rock outcrops. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 7e

TvD—Townley-Montevallo complex, 12 to 20 percent slopes

Setting

Landscape position: Shoulders and side slopes

Major use: Most areas are cleared and used for pasture, or they remain idle

Composition

Townley soil and similar components: 50 to 60 percent

Montevallo soil and similar components: 30 to 40 percent

Minor components: 0 to 20 percent

Minor Components

Contrasting: Corryton soils

Similar: Apison and Nonaburg soils and very shallow soils

Typical Profile

Townley

Surface layer:

0 to 4 inches—brown silt loam

Subsoil:

4 to 17 inches—brown and yellowish red clay

17 to 28 inches—yellowish red channery clay

Substratum:

28 to 33 inches—yellowish red extremely channery clay

33 inches—shale bedrock

Montevallo

Surface layer:

0 to 1 inch—mat of hardwood leaves and twigs

1 to 3 inches—brown channery silt loam

Subsoil:

3 to 14 inches—brownish yellow very channery silt loam

Substratum:

14 to 19 inches—brownish yellow extremely channery silt loam

19 inches—tilted, moderately soft shale that has yellowish brown silt loam between fractures

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Townley—moderately slow; Montevallo—moderate

Available water capacity: Townley—low; Montevallo—very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Townley—extremely acid to strongly acid; Montevallo—very strongly acid to moderately acid

Depth to bedrock: Townley—20 to 40 inches; Montevallo—7 to 20 inches
Shrink-swell potential: Townley—moderate; Montevallo—low

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- The main limitation affecting pasture and hay is the low available water capacity.
- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope and limited depth to bedrock. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 7e

TvE—Townley-Montevallo complex, 20 to 35 percent slopes

Setting

Landscape position: Side slopes and backslopes

Major use: Most areas are cleared and used as pasture, or they remain idle

Composition

Townley soil and similar components: 50 to 60 percent

Montevallo soil and similar components: 30 to 40 percent

Minor components: 0 to 20 percent

Minor Components

Contrasting: Corryton soils

Similar: Apison and Nonaburg soils and very shallow soils

Typical Profile

Townley

Surface layer:

0 to 4 inches—brown silt loam

Subsoil:

4 to 17 inches—brown and yellowish red clay

17 to 28 inches—yellowish red channery clay

Substratum:

28 to 33 inches—yellowish red extremely channery clay

33 inches—shale bedrock

Montevallo

Surface layer:

0 to 1 inch—mat of hardwood leaves and twigs

1 to 3 inches—brown channery silt loam

Subsoil:

3 to 14 inches—brownish yellow very channery silt loam

Substratum:

14 to 19 inches—brownish yellow extremely channery silt loam

19 inches—tilted, moderately soft shale that has yellowish brown silt loam between fractures

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Townley—moderately slow; Montevallo—moderate

Available water capacity: Townley—low; Montevallo—very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Townley—extremely acid to strongly acid; Montevallo—very strongly acid to moderately acid

Depth to bedrock: Townley—20 to 40 inches; Montevallo—7 to 20 inches

Shrink-swell potential: Townley—moderate; Montevallo—low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of the moisture deficiency caused by the limited depth to bedrock and the equipment use limitation due to the slope, establishing and maintaining pastures is difficult.
- Good pasture management is essential in controlling erosion and maintaining productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope and the limited depth to bedrock. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 7e

TvF—Townley-Montevallo complex, 35 to 60 percent slopes

Setting

Landscape position: Side slopes and backslopes

Major use: Pasture, idle land, or woodland

Composition

Townley soil and similar components: 50 to 60 percent

Montevallo soil and similar components: 30 to 40 percent

Minor components: 0 to 20 percent

Minor Components

Contrasting: Corryton soils

Similar: Apison and Nonaburg soils and very shallow soils

Typical Profile

Townley

Surface layer:

0 to 4 inches—brown silt loam

Subsoil:

4 to 17 inches—brown and yellowish red clay

17 to 28 inches—yellowish red channery clay

Substratum:

28 to 33 inches—yellowish red extremely channery clay

33 inches—shale bedrock

Montevallo

Surface layer:

0 to 1 inch—mat of hardwood leaves and twigs

1 to 3 inches—brown channery silt loam

Subsoil:

3 to 14 inches—brownish yellow very channery silt loam

Substratum:

14 to 19 inches—brownish yellow extremely channery silt loam

19 inches—tilted, moderately soft shale that has yellowish brown silt loam between fractures

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Townley—moderately slow; Montevallo—moderate

Available water capacity: Townley—low; Montevallo—very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Townley—extremely acid to strongly acid; Montevallo—very strongly acid to moderately acid

Depth to bedrock: Townley—20 to 40 inches; Montevallo—7 to 20 inches

Shrink-swell potential: Townley—moderate; Montevallo—low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of the moisture deficiency caused by the limited depth to bedrock and the equipment use limitation due to the slope, establishing and maintaining pastures is difficult.
- Good pasture management is essential in controlling erosion and maintaining productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope and the limited depth to bedrock. Because of the severity of the limitations, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 7e

Ur—Urban land

Setting

Landscape position: Variable, but typically uplands

Major use: Urban development

Composition

Urban land and similar components: 85 to 95 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Udorthents and areas of undisturbed soils

Typical Profile

Urban land consists of buildings, roads, streets, parking lots, and similar structures typical of urban areas. Because the underlying soil is not observable, a typical profile is not given.

Soil Properties and Qualities

Urban land consists of areas that have impervious ground cover such as buildings, concrete, or asphalt. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. The underlying soil material is not observable.

Use and Management

The potential for various land uses in this map unit is mostly predetermined. Uses are limited to urban uses such as construction and renovation, landscaping, and building roads and streets. There is little soil material in most areas. Because of the extreme variability of the materials, an onsite evaluation is recommended to determine the suitability and appropriate management measures for specific uses.

Interpretive Group

Land capability classification: None assigned

Uu—Urban land-Udorthents complex

Setting

Landscape position: Variable, but typically uplands

Major use: Urban or concentrated residential development or major highways and their rights-of-way

Composition

Urban land and similar components: 50 to 75 percent

Udorthents and similar components: 25 to 45 percent

Minor components: 5 to 25 percent

Minor Components

Contrasting: Areas of undisturbed soil materials

Similar: Areas on flood plains or terraces that may be subject to flooding

Note: Golf courses are included in this map unit because the soils on golf courses are often drastically disturbed; areas of this map unit do not have a significant component of Urban land

Typical Profile

Urban land

Urban land consists of buildings, roads, streets, parking lots, and similar structures typical of urban areas. The areas have impervious ground cover such as buildings, concrete, or asphalt. In many places, systems of storm drains, ditches, or similar structures have altered the natural drainage pattern. Because the underlying soil is not observable, a typical profile is not given.

Udorthents

Udorthents are soil materials derived from cutting, filling, or other mechanical disturbance of the natural soils. Their properties are strongly influenced by the nature

of the original soil materials and the methods of disturbance or placement. Because Udorthents are extremely variable, a typical profile is not given.

Properties and Qualities of Udorthents

Drainage class: Moderately well drained or well drained

Permeability: Very slow to moderate

Available water capacity: Moderate or high

Depth to seasonal high water table: 2 to more than 6 feet

Flooding: None or rare

Soil reaction: Extremely acid to neutral

Depth to bedrock: 40 to more than 60 inches

Shrink-swell potential: Low or moderate

Use and Management

The potential for various land uses in this map unit is mostly predetermined. Uses are limited to urban uses such as commercial or residential building, septic tank absorption fields, lawns and landscaping, and building roads and streets. Because of the extreme variability of the materials, an onsite evaluation is recommended to determine the suitability and appropriate management measures for specific uses.

Interpretive Group

Land capability classification: None assigned

W—Water

Setting

Major use: Areas are used for recreation, livestock water, or fish production or as esthetic components of the landscape

Composition

Water: 95 to 100 percent

Minor components: 0 to 5 percent

Minor Components

Contrasting: Areas of shoreline where water levels vary; islands that could not be shown at the mapped scale

Definition

This map unit includes the Holston, French Broad, Tennessee, and Clinch Rivers and Fort Loudoun and Melton Hill Lakes. There are also many smaller farm ponds and other water impoundments scattered throughout the county.

Interpretive Group

Land capability classification: None assigned

WaF—Wallen-Rock outcrop complex, 25 to 75 percent slopes, bouldery

Setting

Landscape position: Ridgetops

Major use: Mixed woodland

Composition

Wallen soil and similar components: 75 to 85 percent

Rock outcrop: 10 to 20 percent

Minor components: 0 to 15 percent

Minor Components

Contrasting: Apison and Montevallo soils

Similar: Soils that have fewer rock fragments

Typical Profile

Wallen

Surface layer:

0 to 2 inches—partially decomposed organic litter

2 to 5 inches—very dark grayish brown very cobbly loam

Subsurface layer:

5 to 10 inches—light yellowish brown gravelly loam

Subsoil:

10 to 17 inches—brownish yellow very cobbly loam

Substratum:

17 to 24 inches—brownish yellow extremely stony loam

24 inches—sandstone bedrock

Rock outcrop

This part of the map unit consists of sandstone rock outcrops that occur as individual rocks, ledges, or bluffs. Some loose stones or boulders also occur scattered on the soil surface in some areas.

Properties and Qualities of the Wallen Soil

Drainage class: Somewhat excessively drained

Permeability: Moderately rapid

Available water capacity: Very low

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Extremely acid or very strongly acid

Depth to bedrock: 20 to 40 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Unsited

Management measures and considerations:

- Because of the severe hazard of erosion and the equipment use limitation caused by the slope, crop production is impractical.

Pasture and hay

Suitability for pasture: Poorly suited

Suitability for hay: Unsited

Management measures and considerations:

- Because of the moisture deficiency due to the limited depth to bedrock and the equipment use limitation caused by extremely steep slopes and rock outcrops, establishing and maintaining hayland or pasture is difficult.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitations affecting most urban uses are the slope, the limited depth to bedrock, and rock outcrops. Because of the severity of the limitations, there can be considerable expense in designing and installing structures or facilities that function properly.

Interpretive Group

Land capability classification: 7s

WeB—Waynesboro loam, 2 to 5 percent slopes

Setting

Landscape position: High terraces

Major use: Hay, pasture, or cropland

Composition

Waynesboro soil and similar components: 85 to 95 percent

Minor components: 5 to 15 percent

Minor Components

Contrasting: Etowah soils

Similar: Soils that have a decrease in clay content in the lower part of the subsoil

Typical Profile

Surface layer:

0 to 6 inches—dark brown loam

Subsurface layer:

6 to 12 inches—yellowish red clay loam

Subsoil:

12 to 62 inches—red and yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Well suited

Management measures and considerations:

- This soil is suited to all of the crops, grasses, and legumes that are adapted to the local climate.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting urban uses.

Interpretive Group

Land capability classification: 2e

WeC—Waynesboro loam, 5 to 12 percent slopes

Setting

Landscape position: High terraces

Major use: Hay, pasture, or cropland

Composition

Waynesboro soil and similar components: 75 to 95 percent

Minor components: 5 to 25 percent

Minor Components

Contrasting: Etowah soils

Similar: Soils that have a decrease in clay content in the lower part of the subsoil

Typical Profile

Surface layer:

0 to 6 inches—dark brown loam

Subsurface layer:

6 to 12 inches—yellowish red clay loam

Subsoil:

12 to 62 inches—red and yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, crop rotations, and

the use of cover crops are important in controlling erosion and maintaining productivity when crops are grown.

- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The slope and the clayey subsoil are limitations affecting urban uses. Designing structures and facilities that minimize the influence of the limitations can often overcome them.

Interpretive Group

Land capability classification: 3e

WeD2—Waynesboro loam, 12 to 25 percent slopes, eroded

Setting

Landscape position: High terraces

Major use: Hay, pasture, or cropland

Composition

Waynesboro soil and similar components: 70 to 90 percent

Minor components: 10 to 30 percent

Minor Components

Contrasting: Etowah soils

Similar: Soils that have a decrease in clay content in the lower part of the subsoil

Typical Profile

Surface layer:

0 to 4 inches—dark brown loam

Subsurface layer:

4 to 15 inches—yellowish red clay loam

Subsoil:

15 to 62 inches—red and yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:

- The hazard of erosion is severe when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, crop rotations, and the use of cover crops are essential in controlling erosion and maintaining productivity when crops are grown.
- The use of contour strips, grassed waterways, field borders, and filter strips in moderately steep areas helps to prevent sediment in runoff water from entering streams and bodies of water.

Pasture and hay

Suitability: Moderately suited

Management measures and considerations:

- Maintaining proper fertility levels and an adequate stand help to increase production and minimize sediment and nutrient runoff on moderately steep pastures and hayland.
- Good pasture management helps to control erosion and maintain productivity. Good management includes liming and fertilizing according to soil test recommendations, controlling weeds, and avoiding overgrazing.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The limitation affecting most urban uses is the slope. Because of the severity of the limitation, there is considerable expense in the design and construction of structures or facilities that function properly.

Interpretive Group

Land capability classification: 4e

WsC—Waynesboro cobbly loam, 5 to 12 percent slopes

Setting

Landscape position: High stream terraces

Major use: Hay, pasture, or cropland

Composition

Waynesboro soil and similar components: 65 to 100 percent

Minor components: 0 to 35 percent

Minor Components

Contrasting: Etowah soils

Similar: Corryton soils and soils that have a decrease in clay content in the lower part of the subsoil

Typical Profile

Surface layer:

0 to 5 inches—dark brown cobbly loam

Subsurface layer:

5 to 15 inches—yellowish red clay loam

Subsoil:

15 to 62 inches—red and yellowish red clay

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: More than 6 feet

Flooding: None

Soil reaction: Very strongly acid or strongly acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- The hazard of erosion is moderate when cultivated crops are grown.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.
- The use of terraces, grassed waterways, field borders, and filter strips in the appropriate places can help to prevent the sediment in runoff water from entering streams and bodies of water.
- Rock fragments in the surface layer may hinder tillage operations in some areas.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Moderately suited

Management measures and considerations:

- The slope and the clayey subsoil are limitations affecting urban uses. Designing structures and facilities that minimize the influence of the limitations can often overcome them.

Interpretive Group

Land capability classification: 3e

WwB—Whitwell loam, 2 to 5 percent slopes, rarely flooded

Setting

Landscape position: Low terraces

Major use: Cropland, pasture, or hay

Composition

Whitwell soil and similar components: 60 to 95 percent

Minor components: 5 to 40 percent

Minor Components

Contrasting: Etowah and Shady soils and somewhat poorly drained soils

Similar: Soils that have more clay in the subsoil

Typical Profile

Surface layer:

0 to 9 inches—brown loam

Subsurface layer:

9 to 16 inches—brownish yellow loam

Subsoil:

16 to 47 inches—brownish yellow and pale brown clay loam

47 to 60 inches—grayish brown clay

Substratum:

60 to 65 inches—grayish brown sandy clay loam

Soil Properties and Qualities

Drainage class: Moderately well drained

Permeability: Moderate

Available water capacity: High

Depth to seasonal high water table: 2 to 3 feet

Flooding: Rare

Soil reaction: Very strongly acid to moderately acid (except in limed areas)

Depth to bedrock: More than 60 inches

Shrink-swell potential: Low

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:

- Erosion is a hazard when cultivated crops are grown.
- This soil is suited to most of the crops, grasses, and legumes that are adapted to the local climate. Crops that are seeded late in spring or that can tolerate wetness and early season flooding are best suited.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration rates, and maintain soil tilth.

Pasture and hay

Suitability: Well suited

Management measures and considerations:

- This soil has few limitations affecting pasture and hay.

Urban development

Suitability: Poorly suited

Management measures and considerations:

- The flooding and wetness are limitations that are difficult to overcome.

Interpretive Group

Land capability classification: 2w

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *well suited*, *moderately suited*, *poorly suited*, and *unsuited* or as *good*, *fair*, and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

In 2000, about 87,000 acres in Knox County was farmland. Knox County was ranked 19th in Tennessee for hay harvested, with 26,000 acres harvested and a total harvest of 65,000 tons. In 1999, 150 harvested acres of tobacco produced 245,000 pounds and 500 harvested acres of corn grain produced 44,000 bushels. Cattle producers had 25,000 head (cattle and calves), among which were 11,500 head of beef cattle and 700 milk cows (8).

In 1997, more than 15 million dollars was generated from all farm enterprises in the county. Almost 9 million dollars came from crops and more than 6 million dollars from livestock. In addition, nursery and greenhouse enterprises produced more than 7 million dollars.

Almost all of the steep to extremely steep areas in Knox County remain in forest consisting of upland oak, yellow-poplar, Virginia pine, white pine, and various minor species. These areas include small areas of pasture. Most pasture mixtures include tall fescue and white clover. A mixture of fescue, orchardgrass, and red clover is the most common hay mixture. The largest acreages of crops are in the rolling valleys, and the primary row crops are corn and tobacco. Corn and small grains are grown for hay, silage, or grain.

Many of the soils in the survey area are suited to pasture, provided that appropriate pasture management techniques are practiced. Legumes should be seeded with grasses when pastures are established. Pastures should be periodically renovated to keep legumes in the stand. Legumes significantly improve the quality of the pasture. More information on pasture seeding and renovation is available at the local office of the Tennessee Agricultural Extension Service or the Natural Resources Conservation Service.

Corryton, Dewey, Emory, Etowah, Fullerton, Shady, and Waynesboro soils are used widely for crop and pasture production. There is also a significant acreage of other soils used for pasture and hay production. Erosion-control measures such as contouring, stripcropping, conservation tillage, filter strips, crop residue management, and conservation cropping systems should be used on agricultural land to minimize erosion and maintain long-term soil productivity.

On livestock farms that require pasture and hay, the use of legume and grass forage crops in crop rotations minimizes erosion on sloping land, provides nitrogen to the soil, and improves tilth for the following crop. Using erosion-control measures improves infiltration rates, conserves moisture, and minimizes surface runoff.

Erosion-control measures help to maintain the level of soil productivity. They also improve water quality by decreasing the amount of sediment and nutrients entering streams and lakes. Information on the design and installation of erosion-control measures and assistance in conservation planning are available at the local office of the Natural Resources Conservation Service.

On all of the soils in the survey area, additions of lime, fertilizer, and pesticides should be based on soil tests, the needs of the crops, expected yield levels, and label directions provided for specific products. The soil testing laboratory of the Tennessee Agricultural Extension Service can help in determining the kinds and amounts of lime, fertilizer, and pesticides to apply.

General management needed for crops and pasture is suggested in this section.

The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

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Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The capability classification of map units in this survey area is given in the section "Detailed Soil Map Units" and in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 6. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (3, 7, 10, 11). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (4). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (5). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (14) and "Keys to Soil Taxonomy" (13) and in the "Soil Survey Manual" (15).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (6).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (6, 7).

- Bd Bloomingdale silt loam, 0 to 2 percent slopes, occasionally flooded
Bh Bloomingdale-Hamblen complex, 0 to 3 percent slopes, occasionally flooded
(Bloomingdale component)

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The following map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

- He Heiskell silt loam, 0 to 2 percent slopes, occasionally flooded
Ph Pettyjon-Hamblen complex, 0 to 3 percent slopes, occasionally flooded
St Steadman silt loam, 0 to 3 percent slopes, occasionally flooded

Forest Productivity and Management

The tables in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forest management.

Forest Productivity

In table 7, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available at the local office of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

In table 8, parts I through V, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires

special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Proper planning for timber harvesting is essential to minimize the potential impact to soil and water quality. A harvest plan should include logging roads, log decks, streamside management zones, stream crossings, skid trails, schedule of activities, and Best Management Practices (BMPs) for each activity. Forests should be managed to increase economic and environmental benefits. A forest stewardship plan should be developed to guide management and utilization of the woodlands.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low*, *moderate*, and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available at the local office of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to

unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreational Development

In table 9, parts I and II, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The

limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in this table can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting the appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 10, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface

stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are goldenrod, beggarweed, and wheatgrass.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, and hickory.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, cedar, and juniper.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are Russian-olive, autumn-olive, crabapple, blackberry, and blueberry.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, muskrat, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use

alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 11, parts I and II, show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil

reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs

can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 12, parts I and II, show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if

fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a

water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Table 13, parts I and II, give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 13, part I, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good*, *fair*, or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In table 13, part II, the rating class terms are *good*, *fair*, and *poor*. The features that limit the soils as sources of reclamation material, roadfill, and topsoil are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of these materials. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5

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feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution and other soil characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, measure properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 15 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (2) and the system adopted by the American Association of State Highway and Transportation Officials (1).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages

are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

Physical and Chemical Properties

Table 16 shows estimates of some physical and chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 16, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $1/3$ - or $1/10$ -bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per

inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $1/3$ - or $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 16, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 16 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Water Features

Table 17 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

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Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 17 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 17 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel,

sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 18 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (13, 14). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 19 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in sol. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, mixed, semiactive, thermic Typic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil that is typical of the series in the survey area is described. The detailed description of each soil horizon follows

standards in the "Soil Survey Manual" (15). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (14) and in "Keys to Soil Taxonomy" (13). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Apison Series

Depth class: Moderately deep (20 to 40 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 5 to 75 percent

Landscape positions: Ridgetops, shoulders, and backslopes

Parent material: Residuum; affected by soil creep in some areas

Taxonomic class: Fine-loamy, siliceous, semiactive, thermic Typic Hapludults

Typical Pedon

Apison gravelly silt loam in an area of Apison-Montevallo complex, 35 to 75 percent slopes, rocky; from Highway I-640 in Knoxville, take Highway 441 south, go 0.9 mile and turn east (right) on Ludow Avenue, go 0.5 mile to Sharps Ridge Memorial Park Drive, go 1.0 mile; site is 1,100 feet south and 70 degrees west of the lookout tower; Fountain City topographic quadrangle; lat. 36 degrees 00 minutes 2 seconds N. and long. 83 degrees 56 minutes 55 seconds W.

Oe—0 to 4 inches; partially decomposed hardwood litter.

A—4 to 7 inches; dark grayish brown (10YR 4/2) gravelly silt loam; moderate fine granular structure; very friable; many very fine, fine, and medium roots; 25 percent shale gravel and channers; strongly acid; abrupt smooth boundary.

BE—7 to 10 inches; yellowish brown (10YR 5/4) gravelly loam; common medium distinct dark grayish brown (10YR 4/2) mottles; weak fine subangular blocky structure; very friable; many fine, medium, and coarse roots; 20 percent shale gravel and channers; very strongly acid; clear smooth boundary.

Bt—10 to 21 inches; yellowish brown (10YR 5/4) gravelly loam; weak medium subangular blocky structure; very friable; common fine and medium roots; 30 percent shale gravel and channers; very strongly acid; clear smooth boundary.

BC—21 to 29 inches; dark yellowish brown (10YR 4/4) very gravelly loam; weak fine subangular blocky structure; very friable; common fine roots; 45 percent shale gravel and channers; very strongly acid; clear irregular boundary.

Cr—29 to 36 inches; weathered shale.

Range in Characteristics

Depth to bedrock: 20 to 40 inches to weathered shale

Rock fragments: Shale fragments as much as 2 inches across

Soil reaction (pH): Strongly acid or very strongly acid

A or Ap horizon:

Hue—10YR

Value—3 to 6

Chroma—dominantly 3 or 4; chroma of 2 occurs in some pedons in wooded areas

Texture of fine-earth fraction—loam or silt loam

Content of rock fragments, by volume—0 to 25 percent

BE horizon (if it occurs):

Hue—10YR

Value—3 to 6

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Chroma—2 to 4
Texture of fine-earth fraction—loam or silt loam
Content of rock fragments, by volume—0 to 25 percent

Bt horizon:

Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—loam, silt loam, clay loam, or silty clay loam
Content of rock fragments, by volume—0 to 25 percent
Mottles—few or common; shades of brown, yellow, or red in the lower part of horizon

BC and C horizons (if they occur):

Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—loam, silt loam, clay loam, or silty clay loam
Content of rock fragments, by volume—0 to 60 percent
Mottles—few or common; shades of brown, yellow, or red

Cr layer:

Bedrock—soft interbedded shale, siltstone, or fine-grained sandstone

Bloomington Series

Depth class: Very deep (more than 60 inches)

Drainage class: Poorly drained

Permeability: Moderate

Slope range: 0 to 2 percent

Landscape positions: Flood plains and depressions

Parent material: Alluvium

Taxonomic class: Fine, mixed, semiactive, nonacid, thermic Typic Endoaquepts

Typical Pedon

Bloomington silt loam, 0 to 2 percent slopes, occasionally flooded; from Highway I-75 in Knoxville take Highway 331 (Emory Road) east to Corryton Road, turn north (left), go 1.0 mile to the intersection with Monday Road; site is 1,500 feet north and 58 degrees west of the intersection; Graveston topographic quadrangle; lat. 36 degrees 9 minutes 39 seconds N. and long. 83 degrees 47 minutes 40 seconds W.

Apg—0 to 4 inches; dark grayish brown (2.5Y 4/2) silt loam; weak coarse granular structure; very friable; many fine, medium, and coarse roots; common medium prominent yellowish red (5YR 5/6) iron accumulations; moderately alkaline; abrupt smooth boundary.

Bg1—4 to 13 inches; grayish brown (5Y 5/2) silty clay; weak coarse subangular blocky structure; friable; few fine and medium roots; 2 percent gravel; common fine prominent brownish yellow (10YR 6/8) and reddish yellow (7.5YR 6/8) iron accumulations lining old root channels; moderately alkaline; gradual smooth boundary.

Bg2—13 to 21 inches; grayish brown (5Y 5/2) silty clay; weak coarse subangular blocky structure; firm; 2 percent shale channers; many fine and medium prominent brownish yellow (10YR 6/8) and reddish yellow (7.5YR 6/8) iron accumulations lining old root channels; moderately alkaline; gradual smooth boundary.

Bg3—21 to 38 inches; gray (5Y 5/1) silty clay; massive; firm; 2 percent shale channers;

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many fine, medium, and coarse prominent brownish yellow (10YR 6/8) and reddish yellow (7.5YR 6/8) iron accumulations lining old root channels; moderately alkaline; gradual smooth boundary.

Cg—38 to 60 inches; gray (5Y 5/1) silty clay; massive; firm; 2 percent shale channers; few fine and medium prominent brownish yellow (10YR 6/8) and reddish yellow (7.5YR 6/8) iron accumulations; moderately alkaline.

Range in Characteristics

Depth to bedrock: More than 60 inches

Depth to dominant chroma of 2 or less: 0 to 5 inches

Rock fragments: Gravel and shale channers

Soil reaction (pH): Moderately acid to moderately alkaline

Ap or Apg horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—2 to 4

Texture of fine-earth fraction—silty clay loam or silt loam

Content of rock fragments, by volume—0 to 5 percent

Mottles and redoximorphic features—shades of gray or brown

Bg horizon:

Hue—10YR to 5Y or neutral

Value—5 to 7

Chroma—0 to 2

Texture of fine-earth fraction—silty clay loam, silty clay, or clay

Content of rock fragments, by volume—0 to 5 percent

Mottles and redoximorphic features—shades of brown, red, yellow, or gray

Cg horizon:

Hue—10YR to 5Y

Value—5 to 7

Chroma—0 to 2

Texture of fine-earth fraction—silty clay, silty clay loam, or clay

Content of rock fragments, by volume—dominantly 0 to 5 percent; as much as 20 percent below a depth of 40 inches

Mottles and redoximorphic features—shades of gray, brown, or red

Bodine Series

Depth class: Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Permeability: Moderately rapid

Slope range: 25 to 50 percent

Landscape positions: Uplands

Parent material: Residuum or colluvium

Taxonomic class: Loamy-skeletal, siliceous, semiactive, thermic Typic Paleudults

Typical Pedon

Bodine extremely gravelly loam in an area of Minvale-Bodine-Fullerton complex, 25 to 50 percent slopes, stony; from Knoxville, take Highway I-40 east to the Strawberry Plains exit, turn left at the end of the exit ramp, go 0.6 mile and turn right on Huckleberry Springs Road, go 2.2 miles to the intersection of Huckleberry Springs Road and Flint Gap Road; site is 2,400 feet north and 42 degrees east of the

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intersection; Shook's Gap topographic quadrangle; lat. 35 degrees 59 minutes 6 seconds N. and long. 83 degrees 45 minutes 7 seconds W.

- Oe—2 inches to 0; slightly decomposed hardwood litter.
Oa—0 to 1 inch; highly decomposed organic matter; abrupt smooth boundary.
E—1 to 4 inches; grayish brown (2.5Y 5/2) extremely gravelly loam; moderate fine granular structure; friable; many fine and medium and common coarse roots; 70 percent gravel; very strongly acid; clear smooth boundary.
BE—4 to 8 inches; brown (10YR 5/3) very gravelly loam; moderate medium granular structure; friable; many fine and medium and common coarse roots; 60 percent gravel; strongly acid; clear smooth boundary.
Bt1—8 to 16 inches; yellowish brown (10YR 5/4) very gravelly loam; many medium distinct yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure; friable; common fine and medium and few coarse roots; few distinct clay films on faces of peds; 60 percent gravel; strongly acid; clear smooth boundary.
Bt2—16 to 28 inches; light yellowish brown (10YR 6/4) extremely gravelly clay loam; many medium distinct yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure; friable; many medium and coarse and common fine roots; few distinct clay films on faces of peds; 75 percent gravel; strongly acid; clear smooth boundary.
2Bt3—28 to 40 inches; strong brown (7.5YR 5/6) very gravelly silty clay loam; common medium distinct yellowish red (5YR 5/6) mottles; weak fine subangular blocky structure; friable; few fine roots; few distinct clay films on faces of peds; 35 percent gravel; very strongly acid; clear smooth boundary.
2Bt4—40 to 60 inches; yellowish red (5YR 5/6) very gravelly silty clay loam; weak fine subangular blocky structure; friable; few fine roots; few distinct clay films on faces of peds; 50 percent gravel; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel, cobbles, and stones of chert

Soil reaction (pH): Extremely acid to strongly acid (except in limed areas)

A or Ap horizon (if it occurs):

Hue—10YR or 2.5Y

Value—3 to 5

Chroma—2 or 3

Texture of fine-earth fraction—loam or silt loam

Content of rock fragments, by volume—20 to 85 percent

E and BE horizons (if they occur):

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture of fine-earth fraction—loam, silt loam, or sandy loam

Content of rock fragments, by volume—20 to 85 percent

Bt horizon:

Hue—dominantly 7.5YR to 2.5Y; including 5YR in the lower part of horizon

Value—dominantly 5 or 6; including 4 in the lower part of horizon

Chroma—4 to 8

Texture of fine-earth fraction—clay loam or silty clay loam

Content of rock fragments, by volume—35 to 85 percent

Mottles (if they occur)—shades of red, yellow, or brown

Bradyville Series

Depth class: Deep (40 to 60 inches)

Drainage class: Well drained

Permeability: Moderately slow

Slope range: 5 to 20 percent

Landscape positions: Uplands

Parent material: Residuum

Taxonomic class: Fine, mixed, semiactive, thermic Typic Hapludalfs

Typical Pedon

Bradyville silt loam in an area of Talbott-Rock outcrop-Bradyville complex, 5 to 20 percent slopes, eroded; from Highway 11W, 0.5 mile south on Fennell Road, 125 feet west of road in woods. (This pedon is in Grainger County, where Bradyville soils occur extensively. The extent of Bradyville soils in Knox County is mainly limited to areas adjoining Grainger County. Data from the soil survey of Grainger County were used to represent this soil in Knox County.)

A—0 to 3 inches; dark yellowish brown (10YR 3/4) silt loam; many fine distinct dark brown (7.5YR 4/4) mottles; weak medium granular structure; friable; many fine and medium roots; few fine pores; 3 percent angular fragments of chert; mildly alkaline; abrupt wavy boundary.

Bt1—3 to 8 inches; yellowish red (5YR 4/6) silty clay; many medium prominent brown (10YR 4/3) mottles; moderate fine subangular blocky structure; friable; common fine and medium roots; common fine pores; few fine black concretions and stains; moderately acid; clear wavy boundary.

Bt2—8 to 32 inches; yellowish red (5YR 4/6) silty clay; moderate medium subangular blocky structure; firm; common fine roots; few fine and medium pores; common distinct clay films on faces of peds; few fine black concretions and stains; moderately acid; clear smooth boundary.

Bt3—32 to 39 inches; yellowish red (5YR 5/6) clay; moderate medium subangular blocky structure; firm; few fine roots; few fine pores; many distinct clay films on faces of peds; few fine black concretions and stains; moderately acid; clear smooth boundary.

BC—39 to 51 inches; yellowish red (5YR 4/8) clay; common medium distinct red (2.5YR 4/8) and common fine and medium prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; few fine black concretions and stains; neutral; abrupt wavy boundary.

R—51 inches; limestone bedrock.

Range in Characteristics

Depth to bedrock: 40 to 60 inches

Rock fragments: Angular to rounded gravel or cobbles

Soil reaction (pH): Strongly acid or moderately acid (except in limed areas)

A or Ap horizon:

Hue—5YR to 10YR

Value—3 or 4

Chroma—3 or 4

Texture of fine-earth fraction—silt loam

Content of rock fragments, by volume—0 to 15 percent

Bt horizon:

Hue—2.5YR or 5YR

Value—4 or 5

Chroma—4 to 8

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Texture of fine-earth fraction—clay or silty clay
Content of rock fragments, by volume—0 to 15 percent

BC or C horizon (if it occurs):

Hue—2.5YR to 7.5YR

Value—4 or 5

Chroma—4 to 8

Texture of fine-earth fraction—clay or silty clay

Content of rock fragments, by volume—0 to 15 percent

Mottles—shades of brown, red, or gray

Coghill Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 5 to 65 percent

Landscape positions: Summits, shoulders, and backslopes

Parent material: Residuum from interbedded, leached, calcareous sandstone and shale

Taxonomic class: Fine, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Coghill loam in an area of Coghill-Corryton complex, 25 to 65 percent slopes, rocky; from Highway I-40 in Knoxville, take Highway 129 south, go 2.0 miles to the Cherokee Trail exit, go 0.5 mile to the intersection with Cherokee Bluff; site is 1,800 feet south and 6 degrees east of the intersection; Knoxville topographic quadrangle; lat. 35 degrees 55 minutes 52 seconds N. and long. 83 degrees 56 minutes 21 seconds W.

Oi—0 to 2 inches; partially decomposed hardwood litter.

A—2 to 6 inches; dark reddish brown (5YR 3/3) loam; weak fine subangular blocky and moderate medium granular structure; very friable; many fine, medium, and coarse roots; strongly acid; abrupt smooth boundary.

BA—6 to 13 inches; reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; very friable; common fine and medium roots; few faint clay films; strongly acid; clear smooth boundary.

Bt—13 to 26 inches; yellowish red (5YR 4/6) clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common distinct clay films; strongly acid; clear smooth boundary.

B Ct—26 to 34 inches; yellowish red (5YR 4/6) sandy clay loam; weak fine subangular blocky structure; friable; many medium and coarse roots; common distinct clay films; strongly acid; abrupt smooth boundary.

2BC—34 to 44 inches; 50 percent yellowish red (5YR 4/6) and 50 percent yellowish brown (10YR 5/6) channery clay loam; moderate thin platy structure; friable; few very fine, fine, and medium roots; 20 percent shale channers; strongly acid; gradual smooth boundary.

2C—44 to 61 inches; 70 percent yellowish brown (10YR 5/6) and 30 percent yellowish red (5YR 4/6) clay loam; moderate thin platy structure; firm; 15 percent shale channers; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel and channers of decalcified sandstone and shale

Soil reaction (pH): Very strongly acid to moderately acid (except in limed areas)

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A horizon:

Hue—5YR to 10YR

Value—3 to 5

Chroma—3 or 4

Texture of fine-earth fraction—loam, sandy loam, or fine sandy loam

Content of rock fragments, by volume—0 to 15 percent

BA horizon (if it occurs):

Hue—5YR or 7.5YR

Value—4 to 6

Chroma—4 to 8

Texture of fine-earth fraction—clay loam, sandy clay loam, or loam

Content of rock fragments, by volume—0 to 15 percent

Mottles—shades of red, yellow, or brown

Bt horizon:

Hue—2.5YR to 10YR

Value—4 to 6

Chroma—4 to 8

Texture of fine-earth fraction—clay, sandy clay, sandy clay loam, or clay loam

Content of rock fragments, by volume—0 to 15 percent

Mottles—shades of red, yellow, or brown

BC and C horizons (if they occur):

Hue—5YR to 10YR

Value—4 to 6

Chroma—4 to 8

Texture of fine-earth fraction—sandy loam, loam, loamy sand, clay loam, or sandy clay loam

Content of rock fragments, by volume—0 to 25 percent

Mottles—shades of red, yellow, or brown

Collegedale Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderately slow

Slope range: 2 to 25 percent

Landscape positions: Uplands

Parent material: Residuum weathered from limestone or limestone interbedded with shale

Taxonomic class: Fine, mixed, semiactive, thermic Typic Paleudults

Typical Pedon

Collegedale silty clay loam, 2 to 5 percent slopes, severely eroded; from Knoxville take Highway I-75 north to the Callahan Road exit, turn right at the end of the exit ramp, turn left at the first traffic light on Central Avenue, go 0.7 mile to East Beaver Creek Drive; site is 5,200 feet north and 25 degrees east of the intersection of Central Avenue and East Beaver Creek Drive; Fountain City topographic quadrangle; lat. 36 degrees 2 minutes 53 seconds N. and long. 83 degrees 59 minutes 24 seconds W.

Ap—0 to 3 inches; dark brown (7.5YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common fine roots; neutral; abrupt smooth boundary.

BA—3 to 7 inches; brown (7.5YR 4/4) silty clay loam; common medium distinct yellowish red (5YR 5/6) mottles; moderate fine and medium subangular blocky

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structure; friable; many fine and very fine roots; slightly acid; clear smooth boundary.

Bt1—7 to 16 inches; yellowish red (5YR 4/6) clay; few fine prominent brownish yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on faces of peds; few medium manganese concentrations; strongly acid; gradual smooth boundary.

Bt2—16 to 37 inches; yellowish red (5YR 5/6) clay; common coarse prominent brownish yellow (10YR 6/8) and common medium distinct red (2.5YR 4/6) mottles; strong fine subangular blocky structure; firm; few fine roots; many distinct clay films on faces of peds; strongly acid; gradual smooth boundary.

Bt3—37 to 62 inches; yellowish red (5YR 5/6) clay; common coarse prominent brownish yellow (10YR 6/8), common medium distinct red (2.5YR 4/6), and few medium prominent white (5Y 8/2) mottles; strong fine and medium subangular blocky structure; firm; many distinct clay films on faces of peds; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Chert or shale fragments as much as 2 inches across

Soil reaction (pH): Strongly acid or very strongly acid (except in limed areas)

A horizon:

Hue—dominantly 10YR or 7.5YR; 5YR in eroded areas

Value—4 or 5

Chroma—3 or 4

Texture of fine-earth fraction—silty clay loam, silt loam, silty clay, or clay

Content of rock fragments, by volume—0 to 10 percent

BA horizon (if it occurs):

Hue—5YR to 10YR

Value—4 or 5

Chroma—4 to 6

Texture of fine-earth fraction—silty clay loam or silt loam

Content of rock fragments, by volume—0 to 10 percent

Bt horizon:

Hue—2.5YR or 5YR

Value—4 or 5

Chroma—6 to 8

Texture of fine-earth fraction—dominantly silty clay or clay; the upper few inches of horizon is silty clay loam in some pedons

Content of rock fragments, by volume—0 to 10 percent

Mottles—shades of red, yellow, brown, or olive; gray lithochromic mottles occur in the lower part of horizon

Corryton Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderately slow

Slope range: 2 to 65 percent

Landscape positions: Ridgetops, shoulders, and side slopes

Parent material: Residuum from shale; in some areas interbedded with seams of limestone or sandstone

Taxonomic class: Fine, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Corryton loam in an area of Corryton-Townley complex, 2 to 5 percent slopes; from Highway I-640 in Knoxville, take Washington Pike north, go 1.2 miles past Roberts Road to the intersection of Washington Pike and Flat Creek Lane; site is 800 feet south and 10 degrees west from the intersection; Graveston topographic quadrangle; lat. 36 degrees 7 minutes 35 seconds N. and long. 83 degrees 47 minutes 16 seconds W.

Ap—0 to 6 inches; yellowish brown (10YR 5/4) loam; moderate fine granular structure; very friable; common very fine and fine roots; slightly acid; clear smooth boundary.

BA—6 to 13 inches; yellowish brown (10YR 5/6) clay loam; moderate fine subangular blocky structure; friable; common fine and medium roots; 5 percent soft shale channers; few fine and medium reddish black (2.5YR 2.5/1) manganese concretions; slightly acid; clear smooth boundary.

Bt1—13 to 20 inches; yellowish brown (10YR 5/8) clay; common medium distinct strong brown (7.5YR 5/8) and few fine distinct pale yellow (2.5Y 7/4) mottles; moderate medium subangular blocky structure; firm; few very fine roots; common faint clay films on faces of peds; common medium and coarse reddish black (2.5YR 5/1) manganese concretions and soft masses; strongly acid; clear smooth boundary.

Bt2—20 to 33 inches; strong brown (7.5YR 5/8) clay; common medium distinct brownish yellow (10YR 6/8) and common coarse prominent red (2.5YR 5/8) mottles; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds and lining pores; few medium reddish black (2.5YR 2.5/1) soft manganese masses; very strongly acid; clear smooth boundary.

Bt3—33 to 43 inches; strong brown (7.5YR 5/8) silty clay; many coarse prominent red (2.5YR 5/8), common medium distinct brownish yellow (10YR 6/8), and few medium distinct light gray (10YR 7/2) mottles; strong fine subangular blocky structure; firm; many distinct clay films on faces of peds and lining pores; very strongly acid; gradual smooth boundary.

BC—43 to 61 inches; mottled strong brown (7.5YR 5/6), red (2.5YR 5/8), brownish yellow (10YR 6/8), and light gray (10YR 7/2) clay; moderate medium platy relict rock structure parting to moderate fine subangular blocky; firm; 10 percent soft shale channers; very strongly acid; gradual smooth boundary.

C—61 to 71 inches; reddish yellow (7.5YR 6/8) highly weathered shale that rubs easily to clay; moderate thin platy relict rock structure; firm; many coarse prominent red (2.5YR 5/8), common medium distinct brownish yellow (10YR 6/8), and few medium distinct very pale brown (10YR 7/3) seams indicating bedding planes; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches to soft bedrock

Rock fragments: Channers or gravel of shale

Soil reaction (pH): Very strongly acid to moderately acid (except in limed areas or in areas where limestone strata occur)

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture of fine-earth fraction—loam, silt loam, or clay loam in eroded areas

Content of rock fragments, by volume—0 to 15 percent

BA horizon:

Hue—10YR

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Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—loam or clay loam
Content of rock fragments, by volume—0 to 15 percent

Bt horizon:

Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—clay, silty clay, clay loam, or silty clay loam
Content of rock fragments, by volume—0 to 15 percent
Mottles (if they occur)—shades of brown, red, yellow, or gray

BC horizon:

Hue—2.5YR to 10YR
Value—3 to 7
Chroma—2 to 8
Texture of fine-earth fraction—clay, silty clay, or clay loam
Content of rock fragments, by volume—0 to 50 percent
Mottles (if they occur)—shades of brown, red, yellow, or gray; in some pedons, the horizon is profusely mottled in these colors and has no dominant matrix color
Other features—evidence of relict rock structure can be identified in most pedons

C horizon:

Hue—5YR to 10YR
Value—5 to 7
Chroma—4 to 8
Texture of fine-earth fraction—dominantly highly weathered shale having relict rock structure; rubs easily to clay, silty clay, silty clay loam, clay loam, or loam
Content of rock fragments, by volume—0 to 50 percent
Mottles (if they occur)—shades of brown, red, yellow, or gray; typically occurring as thin bands; in some pedons, the horizon is profusely mottled or thinly banded in these colors and has no dominant matrix color

Dewey Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 2 to 60 percent

Landscape positions: Ridgetops, shoulders, and side slopes

Parent material: Residuum from limestone or dolomite

Taxonomic class: Fine, kaolinitic, thermic Typic Paleudults

Typical Pedon

Dewey silt loam, 5 to 12 percent slopes, eroded; from Highway 11W go 0.75 mile east from the intersection with Ellistown Road to the gravel drive on the right, go 0.5 mile on the gravel road to a field on the right; site is 1,000 feet west of Strong Cemetery; John Sevier topographic quadrangle; lat. 36 degrees 3 minutes 2 seconds N. and long. 83 degrees 47 minutes 13 seconds W.

A—0 to 2 inches; brown (10YR 4/3) silt loam; moderate fine granular structure; friable; many very fine, fine, and medium roots; slightly acid; abrupt smooth boundary.

Ap—2 to 9 inches; dark brown (7.5YR 4/3) silty clay loam; few medium distinct yellowish red (5YR 4/6) mottles; moderate fine subangular blocky and moderate

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fine granular structure; friable; common fine and medium roots; slightly acid; clear smooth boundary.

Bt1—9 to 27 inches; red (2.5YR 4/6) clay; common medium prominent reddish yellow (7.5YR 6/8) mottles; moderate medium subangular blocky structure; firm; few very fine and fine roots; common distinct clay films on faces of peds and lining pores; 2 percent chert gravel; very strongly acid; gradual smooth boundary.

Bt2—27 to 43 inches; red (2.5YR 4/6) clay; common fine prominent very pale brown (10YR 7/3) mottles; strong medium subangular blocky structure; firm; many distinct clay films on faces of peds and lining pores; very strongly acid; gradual smooth boundary.

Bt3—43 to 57 inches; yellowish red (5YR 5/6) clay; many coarse distinct red (2.5YR 4/6) and common coarse prominent yellow (10YR 7/8) mottles; moderate fine and medium subangular blocky structure; firm; many distinct clay films on faces of peds and lining pores; very strongly acid; clear smooth boundary.

Bt4—57 to 66 inches; yellowish red (5YR 5/6) clay; common medium prominent yellow (10YR 7/8) mottles; moderate fine subangular blocky structure; firm; common distinct clay films on faces of peds and lining pores; 5 percent chert gravel; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Chert gravel

Soil reaction (pH): Very strongly acid or strongly acid (except in limed areas)

Ap and A horizons:

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—3 to 6

Texture of fine-earth fraction—dominantly silt loam or loam; clay loam in eroded areas

Content of rock fragments, by volume—0 to 15 percent

Bt horizon:

Hue—dominantly 2.5YR or 5YR; 7.5YR in the upper few inches of horizon in some pedons

Value—3 to 5

Chroma—6 to 8

Texture of fine-earth fraction—dominantly silty clay or clay; silty clay loam or clay loam in the upper few inches of horizon

Content of rock fragments, by volume—0 to 15 percent

Mottles (if they occur)—shades of brown, yellow, or red

Emory Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 2 to 12 percent

Landscape positions: Areas along intermittent drainageways, on toeslopes, and in bottoms of upland depressions

Parent material: Local alluvium and the underlying buried soil

Taxonomic class: Fine-silty, siliceous, active, thermic Fluventic Humic Dystrudepts

Typical Pedon

Emory silt loam, 2 to 5 percent slopes; from Highway I-40 in Knoxville take the Watt

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Road exit south to Kingston Pike, go east (left) on Kingston Pike 1.4 miles to Old Stage Road, turn south (right) and go 0.3 mile to the intersection with McFee Road; site is 1,500 feet south and 23 degrees east of the intersection; Concord topographic quadrangle; lat. 35 degrees 51 minutes 27 seconds N. and long. 84 degrees 11 minutes 56 seconds W.

- Ap—0 to 5 inches; dark brown (7.5YR 3/2) silt loam; moderate medium granular structure; very friable; many very fine and fine roots; strongly acid; clear smooth boundary.
- Bw—5 to 14 inches; dark brown (7.5YR 3/4) silty clay loam; moderate fine subangular blocky structure; very friable; common fine and very fine roots; strongly acid; clear smooth boundary.
- Ab—14 to 21 inches; very dark gray (7.5YR 3/1) silt loam; moderate fine and medium subangular blocky structure; very friable; few very fine and fine roots; moderately acid; clear smooth boundary.
- Bwb—21 to 32 inches; reddish brown (5YR 4/3) silty clay loam; common fine distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable; 2 percent gravel; moderately acid; clear smooth boundary.
- Btb1—32 to 44 inches; yellowish red (5YR 4/6) clay loam; many medium distinct reddish brown (5YR 4/3) mottles; moderate fine subangular blocky structure; friable; few distinct clay films; many fine black (5YR 2.5/1) manganese concretions; moderately acid; clear smooth boundary.
- Btb2—44 to 62 inches; yellowish red (5YR 4/6) clay; weak medium subangular blocky structure; friable; few distinct clay films; common fine black (5YR 2.5/1) manganese concretions; slightly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Rock fragments: Pebbles and cobbles
Soil reaction (pH): Strongly acid to slightly acid

Ap horizon:

Hue—5YR to 10YR
Value—3
Chroma—2 to 4
Texture of fine-earth fraction—silt loam or, rarely, silty clay loam
Content of rock fragments, by volume—0 to 10 percent

Bw horizon:

Hue—2.5YR to 10YR
Value—3 to 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments, by volume—0 to 10 percent

Ab and Bwb horizons:

Hue—5YR to 10YR
Value—3 or 4
Chroma—2 to 4
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments, by volume—0 to 10 percent

Btb horizon:

Hue—2.5YR to 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—silty clay loam, clay loam, silty clay, or clay

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Content of rock fragments, by volume—0 to 20 percent
Mottles—shades of red, yellow, or brown

Etowah Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 2 to 35 percent

Landscape positions: High stream terraces, alluvial fans, and footslopes

Parent material: Alluvium or colluvium that is commonly underlain by limestone residuum

Taxonomic class: Fine-loamy, siliceous, semiactive, thermic Typic Paleudults

Typical Pedon

Etowah loam, 2 to 5 percent slopes; from Highway 441 (Chapman Highway) south in Knoxville, go 1.2 miles past the intersection with John Sevier Highway and turn left on Hendrons Chapel Road (which becomes Kimberlin Heights Road), go 6.5 miles and turn left on Huffaker Ferry Road, go 1.1 miles to the intersection with Seven Islands Drive; site is 3,200 feet north and 14 degrees west of the intersection; Boyd's Creek topographic quadrangle; lat. 35 degrees 57 minutes 51 seconds N. and long. 83 degrees 43 minutes 54 seconds W.

Ap—0 to 10 inches; brown (10YR 4/3) loam; moderate medium granular structure; very friable; common fine and medium roots; few fine mica flakes; moderately acid; abrupt smooth boundary.

BA—10 to 17 inches; strong brown (7.5YR 5/6) clay loam; common medium distinct brown (10YR 4/3) mottles; weak fine subangular blocky structure; friable; many very fine, fine, and medium roots; few fine mica flakes; neutral; clear smooth boundary.

Bt1—17 to 29 inches; yellowish red (5YR 5/6) clay loam; many coarse distinct brownish yellow (10YR 6/6), common medium faint strong brown (7.5YR 5/6), and common medium distinct red (2.5YR 4/6) mottles; moderate fine subangular blocky structure; friable; few fine roots; many distinct clay films; few fine manganese masses; common very fine mica flakes; moderately acid; clear smooth boundary.

Bt2—29 to 47 inches; yellowish red (5YR 5/6) clay loam; many coarse distinct red (2.5YR 5/6) and few fine faint strong brown (7.5YR 5/6) mottles; moderate fine subangular blocky structure; friable; common distinct clay films; common very fine mica flakes; strongly acid; clear smooth boundary.

Bt3—47 to 64 inches; yellowish red (5YR 5/6) clay loam; weak fine subangular blocky structure; friable; common distinct clay films; common very fine mica flakes; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel of chert, sandstone, or quartzite

Soil reaction (pH): Strongly acid or very strongly acid (except in limed areas)

Other characteristics: In some pedons, a lithologic discontinuity (2Bt horizon) occurs below a depth of 40 inches where the soil is underlain by older, clayey residuum

Ap horizon:

Hue—7.5YR or 10YR

Value—3 or 4

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Chroma—2 to 4
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments, by volume—0 to 20 percent

BA horizon (if it occurs):

Hue—5YR or 7.5YR
Value—4 or 5
Chroma—6 to 8
Texture of fine-earth fraction—clay loam or silty clay loam
Content of rock fragments, by volume—0 to 15 percent

Bt horizon:

Hue—2.5YR to 7.5YR
Value—4 or 5
Chroma—6 to 8
Texture of fine-earth fraction—silty clay loam or clay loam
Content of rock fragments, by volume—0 to 15 percent
Mottles—shades of red, yellow, or brown

2Bt horizon (if it occurs):

Hue—2.5YR to 7.5YR
Value—4 or 5
Chroma—6 to 8
Texture of fine-earth fraction—silty clay or clay

Fullerton Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 5 to 60 percent

Landscape positions: Uplands

Parent material: Residuum weathered from cherty limestone or dolomite

Taxonomic class: Fine, kaolinitic, thermic Typic Paleudults

Typical Pedon

Fullerton gravelly loam in an area of Minvale-Fullerton complex, 12 to 25 percent slopes, stony; from Highway I-40 in Knoxville, take Campbell Station Road north, go 1.9 miles to Yarnell Drive, turn left and go 1.7 miles to Marietta Church Road, turn right and go 0.9 mile; site is 1,200 feet south and 82 degrees east of Marietta Church; Lovell topographic quadrangle; lat. 35 degrees 54 minutes 45 seconds N. and long. 84 degrees 12 minutes 23 seconds W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) gravelly loam; moderate fine and medium granular structure; very friable; many fine, medium, and coarse roots; 20 percent chert gravel; moderately acid; clear smooth boundary.

BE—4 to 20 inches; yellowish brown (10YR 5/4) gravelly fine sandy loam; common medium and coarse distinct pale brown (10YR 6/3) and common medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; many fine, medium, and coarse roots; 20 percent chert gravel; strongly acid; abrupt smooth boundary.

Bt1—20 to 41 inches; yellowish red (5YR 4/6) gravelly clay; many medium prominent brownish yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; friable; many distinct clay films on faces of peds and on rock fragments; 15 percent chert gravel; strongly acid; gradual smooth boundary.

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Bt2—41 to 51 inches; yellowish red (5YR 5/6) clay; many coarse prominent brownish yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; friable; many distinct clay films on faces of peds and on rock fragments; 10 percent chert gravel; strongly acid; gradual smooth boundary.

Bt3—51 to 60 inches; yellowish red (5YR 5/6) gravelly clay; many coarse prominent brownish yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; friable; many distinct clay films on faces of peds and on rock fragments; 25 percent chert gravel; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Chert gravel

Soil reaction (pH): Strongly acid or very strongly acid (except in limed areas)

A horizon:

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—2 to 4

Texture of fine-earth fraction—loam, silt loam, or fine sandy loam

Content of rock fragments, by volume—10 to 45 percent

BE or E horizon (if it occurs):

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—2 to 6

Texture of fine-earth fraction—fine sandy loam, loam, or silt loam

Content of rock fragments, by volume—10 to 45 percent

Bt horizon:

Hue—dominantly 2.5YR or 5YR; including 7.5YR in the upper part of horizon

Value—4 or 5

Chroma—4 to 8

Texture of fine-earth fraction—clay or silty clay

Content of rock fragments, by volume—10 to 45 percent

Mottles—common; shades of red, yellow, or brown

Hamblen Series

Depth class: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Permeability: Moderate

Slope range: 0 to 3 percent

Landscape positions: Flood plains

Parent material: Loamy alluvium from limestone, sandstone, or shale

Taxonomic class: Fine-loamy, siliceous, semiactive, thermic Fluvaquentic Eutrudepts

Typical Pedon

Hamblen silt loam in an area of Pettyjon-Hamblen complex, 0 to 3 percent slopes, occasionally flooded; from Knoxville take Highway I-75 north to the Emory Road exit, turn left on Emory Road and go 0.7 mile to Heiskell Road, turn right and go 3.2 miles to the intersection with Bull Run Valley Drive to the west (left); site is 7,800 feet south and 35 degrees west of the intersection; Powell topographic quadrangle; lat. 36 degrees 3 minutes 23 seconds N. and long. 84 degrees 3 minutes 47 seconds W.

Ap—0 to 6 inches; brown (10YR 4/3) silt loam; moderate fine subangular blocky

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- structure; friable; common very fine and fine roots; common fine distinct strong brown (7.5YR 5/8) iron accumulations in pores; slightly acid; clear smooth boundary.
- Bw1—6 to 12 inches; brown (10YR 5/3) clay loam; weak medium subangular blocky structure; friable; common very fine and fine roots; common fine manganese concretions; few fine faint grayish brown (10YR 5/2) iron depletions; slightly acid; clear smooth boundary.
- Bw2—12 to 33 inches; brown (10YR 5/3) clay loam; common fine faint dark yellowish brown (10YR 4/6) mottles; weak medium and coarse subangular blocky structure; friable; few fine roots; common fine manganese stains; few fine faint light brownish gray (10YR 6/2) iron depletions; moderately acid; clear smooth boundary.
- Bw3—33 to 44 inches; light yellowish brown (10YR 6/4) clay loam; weak medium subangular blocky structure; friable; common fine manganese stains; common coarse distinct yellowish brown (10YR 5/8) iron accumulations and many coarse faint light brownish gray (10YR 6/2) iron depletions; moderately acid; clear smooth boundary.
- BC—44 to 60 inches; 50 percent yellowish brown (10YR 5/8) and 50 percent light brownish gray (10YR 6/2) clay loam; weak coarse subangular blocky structure; friable; common fine manganese stains; moderately acid; gradual smooth boundary.
- C—60 to 67 inches; 60 percent yellowish brown (10YR 5/8) and 40 percent gray (2.5Y 6/1) clay loam; massive; friable; many fine manganese stains; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel of quartzite, chert, or sandstone

Soil reaction (pH): Strongly acid to neutral

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture of fine-earth fraction—loam or silt loam

Content of rock fragments, by volume—0 to 15 percent

Bw horizon:

Hue—7.5YR to 2.5Y

Value—4 or 5

Chroma—dominantly 3 to 6; chroma of 2 or less occurs below a depth of 20 inches in some pedons

Texture of fine-earth fraction—clay loam, silt loam, loam, or silty clay loam

Content of rock fragments, by volume—0 to 15 percent

Mottles and redoximorphic features—shades of brown, yellow, or gray

BC and C horizons (if they occur):

Hue—7.5YR to 5Y

Value—4 to 6

Chroma—0 to 6

Texture of fine-earth fraction—clay loam, silty clay loam, silt loam, sandy loam, loam, or fine sandy loam

Content of rock fragments, by volume—dominantly 0 to 15 percent; ranging to as much as 50 percent below a depth of 40 inches in some areas

Mottles and redoximorphic features—shades of yellow, brown, and gray; in some pedons, horizon is profusely mottled and has no dominant matrix color

Heiskell Series

Depth class: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Permeability: Moderately slow

Slope range: 0 to 5 percent

Landscape positions: Upland drainageways

Parent material: Mixed alluvium from limestone and shale

Taxonomic class: Fine-loamy, mixed, semiactive, thermic Aquic Hapludalfs

Typical Pedon

Heiskell silt loam, 2 to 5 percent slopes; from Knoxville take Highway I-40 west to exit 376 north (Pellissippi Parkway), go 3.4 miles to the Hardin Valley exit, turn right off the exit ramp and go 0.75 mile to Reagan Road; site is 2,000 feet north and 32 degrees west of the intersection; Lovell topographic quadrangle; lat. 35 degrees 57 minutes 36 seconds N. and long. 84 degrees 8 minutes 55 seconds W.

Ap—0 to 4 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; very friable; common fine and medium roots; neutral; abrupt smooth boundary.

AB—4 to 12 inches; dark yellowish brown (10YR 4/4) silt loam; common coarse faint yellowish brown (10YR 5/6) and few fine distinct pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; very friable; common fine roots; few fine manganese concretions; moderately acid; clear wavy boundary.

BA—12 to 18 inches; yellowish brown (10YR 4/6) silt loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; common fine iron and manganese concretions; many medium distinct grayish brown (10YR 5/2) and dark grayish brown (10YR 4/2) iron depletions; moderately acid; abrupt smooth boundary.

Bt1—18 to 27 inches; yellowish brown (10YR 5/6) silty clay loam; common medium distinct brown (7.5YR 5/4) mottles; moderate medium subangular blocky structure; friable; few very fine roots; few faint clay films lining faces of peds; common fine iron and manganese concretions; strongly acid; clear smooth boundary.

Bt2—27 to 46 inches; 70 percent yellowish brown (10YR 5/4) and 30 percent gray (2.5Y 6/1) silty clay loam; moderate medium and coarse subangular blocky structure; friable; few very fine roots; few faint clay films lining faces of peds; common fine iron concretions; many medium and coarse strong brown (7.5YR 5/8) iron accumulations; strongly acid; gradual smooth boundary.

BCg—46 to 67 inches; 80 percent gray (2.5Y 6/1) and 20 percent light yellowish brown (10YR 6/4) silt loam; moderate coarse subangular blocky structure; firm; 2 percent chert gravel; common fine iron and manganese concretions; many medium and coarse strong brown (7.5YR 5/8) iron accumulations; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Rounded and subangular gravel; mainly chert

Soil reaction (pH): Strongly acid to slightly alkaline

Ap horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—2 to 4

Texture of fine-earth fraction—silt loam or loam

Content of rock fragments, by volume—0 to 15 percent

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AB and BA horizons (if they occur):

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture of fine-earth fraction—silt loam, loam, or silty clay loam

Content of rock fragments, by volume—0 to 15 percent

Bt horizon:

Hue—7.5YR to 2.5Y

Value—4 to 6

Chroma—3 to 8

Texture of fine-earth fraction—silty clay loam or clay loam

Content of rock fragments, by volume—0 to 15 percent

Mottles and redoximorphic features—shades of gray, brown, yellow, or red

Btg horizon (if it occurs):

Hue—7.5YR to 2.5Y

Value—5 or 6

Chroma—0 to 2

Texture of fine-earth fraction—clay loam or silty clay loam

Content of rock fragments, by volume—0 to 15 percent

Mottles and redoximorphic features—shades of red, yellow, gray, or brown

BCg and Cg horizons (if they occur):

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—1 to 6

Texture of fine-earth fraction—silt loam, silty clay loam, silty clay, or clay

Content of rock fragments, by volume—0 to 15 percent

Mottles and redoximorphic features—shades of gray, yellow, brown, or red

Other features—the BCg and Cg horizons typically consist of 2 or more colors, and 50 percent or more of horizons has chroma of 1 or 2

Loyston Series

Depth class: Shallow (7 to 20 inches)

Drainage class: Well drained

Permeability: Moderately slow

Slope range: 2 to 80 percent

Landscape positions: Shoulders, backslopes, and toeslopes

Parent material: Residuum derived from interbedded limestone and shale, weathered calcareous siltstone, shale, or mudstone

Taxonomic class: Clayey, mixed, active, thermic Lithic Hapludalfs

Typical Pedon

Loyston flaggy clay in an area of Loyston-Nonaburg-Rock outcrop complex, 35 to 80 percent slopes, flaggy; from the intersection of Highways 441 and 33 (Broadway and Maynardville Pike), take Highway 33 north 5.7 miles and turn left on Loyston Road, go 0.9 mile and turn left on Thomas Weaver Road, from the intersection go 1.1 miles to where the powerline crosses the road; site is 2,200 feet south and 75 degrees east; Big Ridge Park topographic quadrangle; lat. 36 degrees 9 minutes 11 seconds N. and long. 83 degrees 56 minutes 2 seconds W.

A—0 to 1 inch; brown (10YR 4/3) flaggy clay; weak fine granular structure; friable; few very fine and fine roots; 20 percent flagstones and channers; slightly alkaline; abrupt smooth boundary.

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BA—1 to 3 inches; dark yellowish brown (10YR 4/4) channery clay; weak fine subangular blocky structure; friable; few fine, medium, and coarse roots; 20 percent channers; slightly alkaline; abrupt smooth boundary.

Bt—3 to 10 inches; dark yellowish brown (10YR 4/4) channery clay; moderate fine subangular blocky structure; friable; common fine, medium, and coarse roots; few faint clay films on faces of peds; 30 percent channers and flagstones; slightly alkaline; abrupt smooth boundary.

Cr—10 to 15 inches; weathered shaly limestone.

R—15 inches; hard shaly limestone.

Range in Characteristics

Depth to bedrock: 7 to 20 inches

Rock fragments: Channers, gravel, flagstones, or cobbles of shale, shaly limestone, or limestone

Soil reaction (pH): Moderately acid to slightly alkaline

A horizon:

Hue—5YR to 10YR

Value—3 to 6

Chroma—1 to 4

Texture of fine-earth fraction—clay, clay loam, silty clay loam, or silt loam

Content of rock fragments, by volume—0 to 50 percent

BA horizon (if it occurs):

Hue—5YR to 10YR

Value—3 to 5

Chroma—4 to 8

Texture of fine-earth fraction—clay, clay loam, silty clay loam, or silty clay

Content of rock fragments, by volume—5 to 35 percent

Bt horizon:

Hue—2.5YR to 10YR

Value—3 to 5

Chroma—4 to 8

Texture of fine-earth fraction—clay or silty clay

Content of rock fragments, by volume—5 to 35 percent

Mottles—shades of brown, red, olive, or gray

Cr layer (if it occurs):

Bedrock—weathered bedrock that can be removed with hand tools

R layer:

Bedrock—hard bedrock

Minvale Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 2 to 50 percent

Landscape positions: Sharply dissected uplands and drainageways

Parent material: Colluvium and the underlying residuum from cherty limestone

Taxonomic class: Fine-loamy, siliceous, subactive, thermic Typic Paleudults

Typical Pedon

Minvale loam in an area of Minvale-Bodine-Fullerton complex, 25 to 50 percent slopes,

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stony; from Knoxville take Highway I-40 east to the Strawberry Plains exit, turn left at the end of the exit ramp, go 0.6 mile and turn right on Huckleberry Springs Road, go 2.2 miles to the intersection with Flint Gap Road; site is 3,200 feet north and 38 degrees east of the intersection; Shook's Gap topographic quadrangle; lat. 35 degrees 59 minutes 13 seconds N. and long. 83 degrees 45 minutes 3 seconds W.

Oe—4 inches to 0; leaf litter.

A—0 to 4 inches; dark yellowish brown (10YR 4/4) loam; moderate fine granular structure; very friable; many fine and medium roots; 10 percent gravel; strongly acid; abrupt smooth boundary.

BE—4 to 9 inches; yellowish brown (10YR 5/4) gravelly loam; weak fine subangular blocky structure; very friable; many fine and medium and common coarse roots; 20 percent gravel; strongly acid; clear wavy boundary.

Bt1—9 to 22 inches; yellowish brown (10YR 5/6) gravelly clay loam; common medium faint pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; common fine and medium roots; few distinct clay films on faces of peds; 25 percent gravel and cobbles; strongly acid; clear smooth boundary.

Bt2—22 to 41 inches; yellowish red (5YR 5/6) gravelly clay loam; many medium prominent reddish yellow (7.5YR 6/8) mottles; moderate medium subangular blocky structure; friable; few fine and medium roots; common distinct clay films on faces of peds; 30 percent gravel and cobbles; very strongly acid; gradual smooth boundary.

Bt3—41 to 60 inches; 50 percent strong brown (7.5YR 5/6), 30 percent yellowish red (5YR 4/6), and 20 percent brownish yellow (10YR 6/8) very gravelly clay loam; moderate fine subangular blocky structure; friable; few fine roots; common distinct clay films on faces of peds; 45 percent gravel and cobbles; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel, cobbles, and stones of chert

Soil reaction (pH): Strongly acid or very strongly acid

A horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—2 to 4

Texture of fine-earth fraction—silt loam, loam, or, rarely, clay loam

Content of rock fragments, by volume—10 to 35 percent

E and BE horizons (if they occur):

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—2 to 4

Texture of fine-earth fraction—loam or silt loam

Content of rock fragments, by volume—15 to 35 percent

Bt horizon:

Hue—2.5YR to 10YR

Value—4 or 5

Chroma—4 to 8

Texture of fine-earth fraction—dominantly clay loam, loam, or silty clay loam; including clay in the lower part of horizon

Content of rock fragments, by volume—dominantly 15 to 35 percent; ranging to 50 percent below a depth of 40 inches

Mottles—occurring in the lower part of horizon in many pedons; shades of red, yellow, gray, or brown

Montevallo Series

Depth class: Shallow (7 to 20 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 5 to 75 percent

Landscape positions: Ridgetops, shoulders, and side slopes

Parent material: Residuum weathered from shale

Taxonomic class: Loamy-skeletal, mixed, subactive, thermic, shallow Typic Dystrudepts

Typical Pedon

Montevallo channery silt loam, 20 to 35 percent slopes; 1,500 feet northeast of Salem Church on Log Mountain Road. (This pedon is in Grainger County and is in a map unit not recognized in Knox County. Montevallo soils occur extensively in both counties, and this pedon is typical for both. Data from the soil survey of Grainger County were used to supplement data collected on Montevallo soils in Knox County.)

O_i—0 to 1 inch; mat of leaves and twigs in various stages of decomposition.

A—1 to 3 inches; brown (10YR 4/3) channery silt loam; weak fine granular structure; very friable; common fine and medium roots; 35 percent shale channers; strongly acid; abrupt smooth boundary.

B_w—3 to 14 inches; brownish yellow (10YR 6/6) very channery silt loam; weak fine subangular blocky structure; very friable; common fine and medium roots; 45 percent shale channers; strongly acid; clear wavy boundary.

C—14 to 19 inches; brownish yellow (10YR 6/6) extremely channery silt loam; massive; very friable; few fine roots; strongly acid; clear smooth boundary.

Cr—19 to 40 inches; tilted, moderately soft shale that has lenses of yellowish brown silt loam between layers and fractures.

Range in Characteristics

Depth to bedrock: 7 to 20 inches

Rock fragments: Shale channers

Soil reaction (pH): Very strongly acid to moderately acid (except in limed areas)

A horizon:

Hue—10YR

Value—3 to 5

Chroma—3 or 4

Texture of fine-earth fraction—silt loam

Content of rock fragments, by volume—40 to 60 percent

B_w horizon:

Hue—5YR to 10YR

Value—4 or 5

Chroma—6

Texture of fine-earth fraction—silt loam or silty clay loam

Content of rock fragments, by volume—50 to 85 percent

C horizon (if it occurs):

Hue—5YR to 10YR

Value—4 or 5

Chroma—6

Texture of fine-earth fraction—silt loam or loam

Content of rock fragments, by volume—50 to 85 percent

Cr layer:

Bedrock—moderately soft, tilted and fractured shale

Nonaburg Series

Depth class: Shallow (7 to 20 inches)

Drainage class: Well drained

Permeability: Moderately slow

Slope range: 12 to 80 percent

Landscape positions: Shoulders, side slopes, and backslopes

Parent material: Residuum from calcareous shale; interbedded with limestone in some places

Taxonomic class: Clayey, mixed, active, thermic, shallow Inceptic Hapludalfs

Typical Pedon

Nonaburg channery silt loam, 12 to 25 percent slopes, severely eroded, rocky; take Tazewell Pike from Knoxville about 9 miles to East Emory Road and turn right, follow East Emory Road to where it crosses Big Flat Creek; site is 1,200 feet south and 75 degrees west; Graveston topographic quadrangle; lat. 36 degrees 9 minutes 2 seconds N. and long. 83 degrees 45 minutes 21 seconds W.

A—0 to 1 inch; dark yellowish brown (10YR 4/4) channery silt loam; weak fine granular structure; very friable; many very fine and fine roots; 5 percent shale channers; strongly acid; abrupt smooth boundary.

BA—1 to 3 inches; yellowish brown (10YR 5/4) channery silty clay loam; weak fine subangular blocky structure; very friable; many very fine and fine roots; 20 percent shale channers; moderately acid; abrupt smooth boundary.

Bt—3 to 10 inches; yellowish brown (10YR 5/6) channery clay; common medium distinct strong brown (7.5YR 5/6) mottles; moderate fine subangular blocky structure; friable; few very fine and fine roots; few distinct clay films on faces of peds and some rock fragments; few fine soft manganese masses; 35 percent shale channers; moderately acid; clear wavy boundary.

Cr—10 to 39 inches; weathered shale that has few fine roots in some fractures.

Range in Characteristics

Depth to bedrock: 8 to 20 inches to soft bedrock

Rock fragments: Channers and gravel of shale or shaly limestone

Soil reaction (pH): Strongly acid to neutral

A horizon:

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 4

Texture of fine-earth fraction—silt loam or silty clay loam

Content of rock fragments, by volume—2 to 45 percent

BA horizon (if it occurs):

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 8

Texture of fine-earth fraction—silty clay loam

Content of rock fragments, by volume—2 to 35 percent

Bt horizon:

Hue—7.5YR to 2.5Y

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Value—4 or 5

Chroma—4 to 8

Texture of fine-earth fraction—clay, silty clay, or silty clay loam

Content of rock fragments, by volume—2 to 35 percent

Cr layer:

Bedrock—brownish, yellowish, or olive, tilted and fractured shale

Pettyjon Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 0 to 3 percent

Landscape positions: Flood plains

Parent material: Loamy alluvium from shale and limestone

Taxonomic class: Fine-loamy, mixed, active, thermic Dystric Fluventic Eutrudepts

Typical Pedon

Pettyjon silt loam in an area of Pettyjon-Hamblen complex, 0 to 3 percent slopes, occasionally flooded; from Knoxville take Highway I-75 north to the Emory Road exit, turn left on Emory Road and go 0.7 mile to Heiskell Road, turn right and go 3.2 miles to the intersection with Bull Run Valley Drive to the west (left); site is 7,400 feet south and 36 degrees west of the intersection; Powell topographic quadrangle; lat. 36 degrees 3 minutes 26 seconds N. and long. 84 degrees 3 minutes 43 seconds W.

Ap—0 to 6 inches; dark brown (10YR 3/3) silt loam; moderate medium granular and subangular blocky structure; very friable; common fine and medium roots; neutral; clear smooth boundary.

Bw1—6 to 20 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; friable; few very fine and fine roots; neutral; clear smooth boundary.

Bw2—20 to 42 inches; dark yellowish brown (10YR 4/4) clay loam; common medium faint brown (10YR 5/3) mottles; weak medium subangular blocky structure; friable; few very fine roots; neutral; gradual smooth boundary.

BC—42 to 65 inches; dark yellowish brown (10YR 4/4) clay loam; common medium and coarse faint brown (10YR 5/3) mottles; massive; friable; few fine manganese stains; neutral.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel of quartzite, chert, or sandstone

Soil reaction (pH): Slightly acid to slightly alkaline

Ap horizon:

Hue—7.5YR or 10YR

Value—4

Chroma—3 or 4

Texture of fine-earth fraction—silt loam, loam, or fine sandy loam

Content of rock fragments, by volume—0 to 5 percent

Bw horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

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Texture of fine-earth fraction—silt loam, loam, silty clay loam, clay loam, or fine sandy loam

Content of rock fragments, by volume—0 to 5 percent

Mottles—shades of brown

BC and C horizons (if they occur):

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Texture of fine-earth fraction—silt loam, silty clay loam, clay loam, sandy loam, loam, or fine sandy loam

Content of rock fragments, by volume—0 to 5 percent

Mottles and redoximorphic features—shades of yellow, brown, or gray; in some pedons, the horizon is profusely mottled and has no dominant matrix color

Rockdell Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 0 to 4 percent

Landscape positions: Flood plains and footslopes

Parent material: Cherty alluvium or colluvium

Taxonomic class: Loamy-skeletal, siliceous, active, thermic Dystric Fluventic Eutrudepts

Typical Pedon

Rockdell gravelly loam, 0 to 4 percent slopes, rarely flooded; from Highway I-40 in Knoxville, take the Campbell Station Road north, go 1.9 miles to Yarnell Drive, turn left and go 1.7 miles to Marietta Church Road, turn right and go 0.9 mile; site is 2,400 feet north and 77 degrees east of the Marietta Church; Lovell topographic quadrangle; lat. 35 degrees 54 minutes 51 seconds N. and long. 84 degrees 12 minutes 11 seconds W.

A—0 to 6 inches; dark grayish brown (10YR 4/2) gravelly loam; moderate fine granular structure; very friable; many fine and medium roots; 15 percent gravel; slightly acid; clear smooth boundary.

BA—6 to 10 inches; 60 percent yellowish brown (10YR 5/4) and 40 percent dark yellowish brown (10YR 4/4) gravelly fine sandy loam; moderate fine and medium subangular blocky structure; very friable; common fine, medium, and coarse roots; 25 percent gravel; slightly acid; clear smooth boundary.

Bw1—10 to 23 inches; yellowish brown (10YR 5/4) very cobbly sandy loam; weak medium subangular blocky structure; very friable; few fine and medium roots; 60 percent cobbles and gravel; slightly acid; clear smooth boundary.

Bw2—23 to 31 inches; strong brown (7.5YR 5/6) very gravelly sandy clay loam; common medium prominent pale brown (10YR 6/3) mottles; weak fine subangular blocky structure; very friable; 50 percent gravel; slightly acid; abrupt smooth boundary.

2Bt—31 to 60 inches; yellowish red (5YR 5/6) gravelly clay; common coarse prominent brownish yellow (10YR 6/8) mottles; strong fine subangular blocky structure; firm; 25 percent chert gravel; slightly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel and cobbles; dominantly chert with some sandstone and shale

Soil reaction (pH): Moderately acid to neutral

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A or Ap horizon:

Hue—10YR or 2.5Y

Value—3 to 6

Chroma—2 to 4

Texture of fine-earth fraction—loam, silt loam, or fine sandy loam

Content of rock fragments, by volume—10 to 40 percent

BA horizon (if it occurs):

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—3 or 4

Texture of fine-earth fraction—fine sandy loam, loam, or silt loam

Content of rock fragments, by volume—10 to 40 percent

Bw horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture of fine-earth fraction—sandy loam, sandy clay loam, loam, silt loam, clay loam, or silty clay loam

Content of rock fragments, by volume—15 to 75 percent

2Bt horizon (if it occurs):

Hue—2.5YR to 10YR

Value—4 to 6

Chroma—4 to 8

Texture of fine-earth fraction—loam, clay loam, silty clay, or clay

Content of rock fragments, by volume—15 to 75 percent

Mottles—shades of brown, yellow, or gray

C horizon (if it occurs):

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 8

Texture of fine-earth fraction—loam, silt loam, sandy loam, clay loam, or silty clay loam

Content of rock fragments, by volume—15 to 75 percent

Mottles—shades of brown, yellow, red, or gray

Salacoa Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 5 to 25 percent

Landscape positions: Toeslopes, footslopes, benches, and the lower portions of side slopes and backslopes

Parent material: Colluvium derived from shale, siltstone, and sandstone

Taxonomic class: Fine-loamy, mixed, active, thermic Typic Hapludalfs

Typical Pedon

Salacoa gravelly loam, 12 to 25 percent slopes; from Knoxville take Highway I-75 north to the Emory Road exit, turn left on Emory Road and go 0.7 mile to Heiskell Road, turn right and go 3.1 miles to the intersection with Bull Run Valley Drive to the east (right); site is 1,200 feet north and 37 degrees east of the intersection; Powell topographic

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quadrangle; lat. 36 degrees 4 minutes 38 seconds N. and long. 84 degrees 2 minutes 29 seconds W.

- Oe—0 to 3 inches; slightly decomposed hardwood litter.
- A—3 to 6 inches; dark brown (7.5YR 3/2) gravelly loam; moderate medium granular structure; very friable; many fine, medium, and coarse roots; 20 percent gravel and channers; very strongly acid; abrupt smooth boundary.
- BA—6 to 14 inches; dark brown (7.5YR 4/4) loam; weak fine subangular blocky structure; friable; many fine and medium roots; 5 percent gravel and channers; moderately acid; clear smooth boundary.
- Bt1—14 to 23 inches; strong brown (7.5YR 4/6) loam; common medium distinct brownish yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; friable; few fine and medium and common coarse roots; common distinct clay films on faces of peds; common fine black and red concretions; 5 percent gravel and channers; moderately acid; clear smooth boundary.
- Bt2—23 to 54 inches; strong brown (7.5YR 5/6) loam; common medium distinct brownish yellow (10YR 6/8) and yellowish red (5YR 4/6) mottles; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; common fine black and red concretions; 5 percent gravel and channers; strongly acid; gradual smooth boundary.
- Bt3—54 to 66 inches; strong brown (7.5YR 5/6) loam; common medium distinct brownish yellow (10YR 6/8) mottles; weak fine subangular blocky structure; friable; few distinct clay films on faces of peds; common fine black and red concretions; 10 percent gravel and channers; strongly acid; clear smooth boundary.
- BC—66 to 75 inches; strong brown (7.5YR 4/6) very channery loam; many medium distinct brownish yellow (10YR 6/8) mottles; weak fine subangular blocky structure; friable; few fine black and red concretions; 45 percent channers and gravel; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel and channers of sandstone or shale

Soil reaction (pH): Very strongly acid to moderately acid (except in limed areas)

A horizon:

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 to 5

Texture of fine-earth fraction—loam or silt loam

Content of rock fragments, by volume—5 to 35 percent

BA horizon (if it occurs):

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—3 to 5

Texture of fine-earth fraction—loam, silt loam, or clay loam

Content of rock fragments, by volume—5 to 35 percent

Bt horizon:

Hue—5YR to 10YR

Value—4 to 6

Chroma—4 to 8

Texture of fine-earth fraction—dominantly loam, silty clay loam, or clay loam; including clay in the lower part of horizon

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Content of rock fragments, by volume—dominantly 5 to 35 percent; as much as 50 percent in individual subhorizons

Mottles—shades of red, yellow, or brown

BC and C horizons (if they occur):

Hue—5YR to 10YR

Value—4 to 6

Chroma—4 to 8

Texture of fine-earth fraction—loam, clay loam, or silty clay loam

Content of rock fragments, by volume—5 to 50 percent

Mottles—shades of red, yellow, or brown

Shady Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 0 to 12 percent

Landscape positions: Stream terraces

Parent material: Alluvium weathered from sandstone, limestone, and shale

Taxonomic class: Fine-loamy, mixed, subactive, thermic Typic Hapludults

Typical Pedon

Shady loam, 2 to 5 percent slopes; from Highway I-40 in Knoxville take the Asheville Highway exit, go 1.8 miles east and turn north on Ruggles Ferry Pike, go 0.5 mile to the intersection with Bagwell Lane and turn left, go 1.0 mile to where Bagwell Lane makes a sharp turn and intersects a private drive; site is 1,400 feet north and 54 degrees west of the intersection; John Sevier topographic quadrangle; lat. 36 degrees 2 minutes 10 seconds N. and long. 83 degrees 48 minutes 19 seconds W.

Ap—0 to 8 inches; brown (10YR 4/3) loam; weak medium granular and moderate fine subangular blocky structure; very friable; common fine and medium roots; common very fine mica flakes; moderately alkaline; abrupt smooth boundary.

Bt1—8 to 22 inches; brown (7.5YR 5/4) clay loam; common medium faint brown (7.5YR 4/3) mottles; weak fine and medium subangular blocky structure; friable; few fine roots; few faint clay films; common very fine mica flakes; moderately alkaline; clear smooth boundary.

Bt2—22 to 33 inches; strong brown (7.5YR 5/6) clay loam; few fine distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; common distinct clay films; common very fine mica flakes; neutral; gradual smooth boundary.

Bt3—33 to 45 inches; strong brown (7.5YR 5/8) clay loam; many coarse distinct yellowish brown (10YR 5/8) mottles; weak fine and medium subangular blocky structure; friable; common very fine mica flakes; moderately acid; gradual smooth boundary.

BC—45 to 65 inches; strong brown (7.5YR 5/6) sandy clay loam; many coarse distinct brownish yellow (10YR 6/6) mottles; weak fine and medium subangular blocky structure; friable; common very fine mica flakes; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel or cobbles

Soil reaction (pH): Very strongly acid to moderately acid (except in limed areas)

Other characteristics: Content of mica flakes ranges from none to common

Soil Survey of Knox County, Tennessee

Ap horizon:

Hue—10YR
Value—3 or 4
Chroma—3 or 4
Texture of fine-earth fraction—loam or fine sandy loam
Content of rock fragments, by volume—0 to 15 percent

Bt horizon:

Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—sandy clay loam, clay loam, or loam
Content of rock fragments, by volume—0 to 15 percent
Mottles—shades of brown

BC and C horizons (if they occur):

Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—sandy clay loam, sandy loam, fine sandy loam, or loam
Content of rock fragments, by volume—5 to 40 percent
Mottles—shades of brown, yellow, or gray

Steadman Series

Depth class: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Permeability: Moderate

Slope range: 0 to 3 percent

Landscape positions: Flood plains and low terraces

Parent material: Mixed alluvium from shale and limestone

Taxonomic class: Fine-silty, mixed, active, thermic Fluvaquentic Eutrudepts

Typical Pedon

Steadman silt loam, 0 to 3 percent slopes, occasionally flooded; from Highway I-640 in Knoxville, take Washington Pike north, go 1.2 miles past Roberts Road to the intersection of Washington Pike and Flat Creek Lane; site is 1,300 feet north and 29 degrees east of the intersection; Graveston topographic quadrangle; lat. 36 degrees 7 minutes 55 seconds N. and long. 83 degrees 47 minutes 6 seconds W.

Ap—0 to 5 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; many fine and medium roots; neutral; clear smooth boundary.

Bw1—5 to 29 inches; dark yellowish brown (10YR 4/4) silty clay loam; few fine distinct brown (10YR 5/3) and strong brown (7.5YR 5/6) mottles; moderate fine subangular blocky structure; friable; common medium and few very fine and fine roots; common fine manganese concretions; neutral; clear smooth boundary.

Bw2—29 to 44 inches; yellowish brown (10YR 5/4) silty clay loam; common fine and medium distinct pale brown (10YR 6/3) mottles; weak fine subangular blocky structure; friable; few very fine roots; few fine manganese masses; common medium distinct light brownish gray (10YR 6/2) and brownish gray (10YR 5/2) iron depletions; neutral; clear smooth boundary.

Cg1—44 to 54 inches; brownish gray (10YR 5/2) silty clay loam; common medium distinct pale brown (10YR 6/3) and dark yellowish brown (10YR 4/4) mottles; massive; friable; few very fine roots; few fine manganese masses; common

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medium distinct strong brown (7.5YR 5/8) iron accumulations; 2 percent gravel; neutral; clear smooth boundary.

Cg2—54 to 65 inches; brownish gray (10YR 5/2) silty clay; many coarse distinct bluish gray (10B 6/1) mottles; massive; friable; few very fine roots; few fine manganese masses; many coarse distinct brown (7.5YR 4/4) and strong brown (7.5YR 5/6) iron accumulations; 2 percent gravel; neutral.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Rounded gravel

Soil reaction (pH): Moderately acid to slightly alkaline

Ap horizon:

Hue—10YR

Value—4 to 6

Chroma—3 or 4

Texture of fine-earth fraction—silt loam, silty clay loam, or loam

Content of rock fragments, by volume—0 to 5 percent

Bw horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Texture of fine-earth fraction—silty clay loam or clay loam

Content of rock fragments, by volume—0 to 5 percent

Mottles and redoximorphic features—shades of gray, red, yellow, or brown

C horizon:

Hue—10YR

Value—4 to 6

Chroma—dominantly 3 to 6; including 2 or less below a depth of 40 inches

Texture of fine-earth fraction—silt loam, loam, clay loam, silty clay loam, or silty clay

Content of rock fragments, by volume—0 to 35 percent

Mottles and redoximorphic features—shades of gray, red, yellow, or brown

The Steadman soils in Knox County are considered taxadjuncts to the series because the depth to redoximorphic features with low chroma is more than is typical for the series. This difference, however, does not affect soil use and management.

Swafford Series

Depth class: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Permeability: Moderately slow

Slope range: 2 to 12 percent

Landscape positions: Low stream terraces, toeslopes, and footslopes

Parent material: Alluvium and/or colluvium weathered from sandstone, limestone, or shale

Taxonomic class: Fine-loamy, siliceous, semiactive, thermic Fragiaquic Paleudults

Typical Pedon

Swafford silt loam, 5 to 12 percent slopes; from Knoxville take the Chapman Highway south, go 2.7 miles past the intersection with John Sevier Highway, turn right on Highland View Drive, take the first left on Simpson Road, go to the end of Simpson Road and turn right on Allen Lane; site is 1,200 feet south and 47 degrees west of the

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intersection; Shook's Gap topographic quadrangle; lat. 35 degrees 52 minutes 60 seconds N. and long. 83 degrees 48 minutes 34 seconds W.

- Ap**—0 to 3 inches; dark brown (10YR 3/3) silt loam; moderate medium granular structure; very friable; many very fine and fine roots; few fine black manganese concretions; moderately acid; abrupt smooth boundary.
- Bt1**—3 to 13 inches; brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common fine and medium roots; few fine black manganese concretions and stains; 5 percent gravel; moderately acid; clear smooth boundary.
- Bt2**—13 to 17 inches; yellowish brown (10YR 5/6) clay loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; common distinct clay films; few fine and medium black manganese concretions; common medium distinct light brownish gray (10YR 6/2) iron depletions; 10 percent gravel; strongly acid; abrupt smooth boundary.
- 2Btx1**—17 to 30 inches; 70 percent yellowish brown (10YR 5/6) and 30 percent grayish brown (10YR 5/2) gravelly clay loam; many fine distinct brownish yellow (10YR 6/8) mottles; moderate fine subangular blocky structure; friable; few fine roots; few fine black manganese concretions; 60 percent brittle, by volume; 30 percent gravel; strongly acid; clear smooth boundary.
- 2Btx2**—30 to 42 inches; reddish brown (5YR 4/4) clay loam; common coarse prominent brownish yellow (10YR 6/8) and common medium prominent red (2.5YR 4/6) mottles; moderate fine subangular blocky structure; firm; few medium black manganese concretions; 30 percent brittle, by volume; 5 percent gravel; strongly acid; gradual smooth boundary.
- 2Bt**—42 to 60 inches; reddish brown (5YR 4/4) clay loam; common coarse prominent brownish yellow (10YR 6/8) and common medium prominent red (2.5YR 4/6) mottles; moderate fine subangular blocky structure; firm; few medium black manganese concretions; few fine prominent light brownish gray (10YR 6/2) iron depletions; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Gravel or channers of sandstone, chert, or shale

Soil reaction (pH): Moderately acid to very strongly acid (except in limed areas)

Ap horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Texture of fine-earth fraction—loam or silt loam

Content of rock fragments, by volume—0 to 10 percent

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 8

Texture of fine-earth fraction—loam or clay loam

Content of rock fragments, by volume—0 to 10 percent

Mottles and redoximorphic features—colors with chroma of 2 or less; typically within a depth of 30 inches

2Btx and 2Bt horizons:

Hue—5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Texture of fine-earth fraction—loam or clay loam

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Content of rock fragments, by volume—0 to 10 percent
Mottles and redoximorphic features—shades of brown, yellow, or gray

Talbott Series

Depth class: Moderately deep (20 to 40 inches)
Drainage class: Well drained
Permeability: Moderately slow
Slope range: 2 to 60 percent
Landscape positions: Ridgetops, shoulders, and backslopes
Parent material: Residuum weathered from limestone
Taxonomic class: Fine, mixed, semiactive, thermic Typic Hapludalfs

Typical Pedon

Talbott silty clay loam in an area of Talbott-Rock outcrop-Bradyville complex, 5 to 20 percent slopes, eroded; from Highway 11W, 0.5 mile south on Fennell Road, 150 feet west of road in woods. (This pedon is in Grainger County. Talbott soils occur extensively in both Knox and Grainger Counties, and this pedon is typical for both. Data from the soil survey of Grainger County were used to supplement data collected on Talbott soils in Knox County.)

Ap—0 to 3 inches; brown (7.5YR 4/3) silty clay loam; weak medium granular structure; friable; common very fine, fine, and medium roots; few fine pores; 3 percent angular chert fragments; slightly acid; abrupt wavy boundary.
Bt1—3 to 9 inches; yellowish red (5YR 5/8) clay; moderate medium subangular blocky structure; firm; common very fine and few fine roots; few distinct clay films on faces of peds; slightly acid; clear smooth boundary.
Bt2—9 to 22 inches; yellowish red (5YR 5/8) clay; common medium distinct red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; firm; common fine and medium and few very fine roots; few fine pores; few distinct clay films on faces of peds and in some larger pores; few medium manganese concentrations; slightly acid; clear smooth boundary.
Bt3—22 to 27 inches; yellowish red (5YR 5/8) clay; many medium distinct red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; firm; few fine pores; slightly acid; clear wavy boundary.
CB—27 to 32 inches; mottled red (2.5YR 4/8) and yellowish brown (10YR 5/6) clay; weak medium subangular blocky structure; firm; few faint clay films on faces of peds; slightly alkaline; abrupt wavy boundary.
R—32 inches; limestone bedrock.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Rock fragments: Chert gravel
Soil reaction (pH): Dominantly strongly acid to slightly acid (except in limed areas); ranging to slightly alkaline in the horizon directly above the bedrock

A horizon:

Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—silty clay loam
Content of rock fragments, by volume—0 to 10 percent

Bt horizon:

Hue—dominantly 2.5YR to 7.5YR; 10YR in the lower part of horizon in some pedons
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—dominantly clay or silty clay; silty clay loam in the upper few inches of horizon in some pedons
Content of rock fragments, by volume—0 to 10 percent
Mottles—shades of red, yellow, or brown

CB and C horizons (if they occur):

Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—clay or silty clay
Content of rock fragments, by volume—0 to 10 percent
Mottles—shades of red, yellow, or brown

R layer:

Bedrock—hard limestone bedrock

Toccoa Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderately rapid

Slope range: 0 to 3 percent

Landscape positions: Flood plains

Parent material: Alluvium

Taxonomic class: Coarse-loamy, mixed, active, nonacid, thermic Typic Udifluvents

Typical Pedon

Toccoa fine sandy loam, 0 to 3 percent slopes, rarely flooded; from Highway 441 (Chapman Highway) in Knoxville, go south 1.2 miles past the intersection with John Sevier Highway and turn east (left) on Hendrons Chapel Road (which turns into Kimberlin Heights Road), go 6.5 miles and turn north (left) on Huffaker Ferry Road, go 1.1 miles to the intersection with Seven Islands Drive; site is 2,400 feet north and 53 degrees west of the intersection; Boyd's Creek topographic quadrangle; lat. 35 degrees 57 minutes 32 seconds N. and long. 83 degrees 44 minutes 6 seconds W.

Ap—0 to 4 inches; dark brown (10YR 3/3) fine sandy loam; moderate medium granular structure; many fine and medium roots; common fine mica flakes; neutral; abrupt smooth boundary.

Bw—4 to 18 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; common fine and medium roots; common fine mica flakes; slightly acid; clear smooth boundary.

C1—18 to 39 inches; dark yellowish brown (10YR 4/6) sandy loam; single grain; very friable; few fine roots; many fine and medium mica flakes; neutral; clear smooth boundary.

C2—39 to 62 inches; yellowish brown (10YR 5/4) loamy sand; single grain; loose; many fine and medium mica flakes; neutral.

Range in Characteristics

Depth to bedrock: More than 60 inches

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Rock fragments: Gravel; typically sandstone
Soil reaction (pH): Strongly acid to slightly acid

Ap horizon:

Hue—10YR
Value—3 to 5
Chroma—2 to 5
Texture of fine-earth fraction—fine sandy loam, sandy loam, or loam
Content of rock fragments, by volume—0 to 5 percent

Bw horizon:

Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 5
Texture of fine-earth fraction—sandy loam or fine sandy loam
Content of rock fragments, by volume—0 to 5 percent

C horizon:

Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—sandy loam or loamy sand
Content of rock fragments—gravelly or very gravelly strata occur in some pedons, typically below a depth of 40 inches
Mottles—few or common gray mottles occur below a depth of 20 inches

The Toccoa soils in Knox County are considered taxadjuncts to the series because the Bw horizon in the upper part of the subsoil is not typical for the series. This difference, however, does not affect soil use and management.

Townley Series

Depth class: Moderately deep (20 to 40 inches)
Drainage class: Well drained
Permeability: Slow
Slope range: 2 to 60 percent
Landscape positions: Ridgetops, shoulders, and side slopes
Parent material: Residuum weathered from shale
Taxonomic class: Fine, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Townley silt loam in an area of Townley-Montevallo complex, 20 to 35 percent slopes; 1 mile north from the William Harrell Bridge on Tom Long Road, directly east of the road, in woods. (This pedon is in Grainger County. Townley soils occur extensively in both Knox and Grainger Counties, and this pedon is typical for both. Data from the soil survey of Grainger County were used to supplement data collected on Townley soils in Knox County.)

Ap—0 to 4 inches; brown (10YR 4/3) silt loam; few fine faint brownish yellow (10YR 6/8) mottles; weak fine granular structure; very friable; many fine and medium roots; 10 percent shale channers; moderately acid; clear wavy boundary.
Bt1—4 to 9 inches; brown (7.5YR 5/4) clay; common medium distinct yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; many fine, medium, and coarse roots; many fine and medium pores; 10 percent shale channers; strongly acid; clear wavy boundary.
Bt2—9 to 17 inches; yellowish red (5YR 4/6) clay; common fine distinct strong brown

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(7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; many fine, medium, and coarse roots; many distinct clay films on faces of peds and in pores; few fine black concentrations; 10 percent shale channers; very strongly acid; gradual smooth boundary.

Bt3—17 to 28 inches; yellowish red (5YR 4/6) channery clay; common fine distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; common fine and medium roots; many distinct clay films on faces of peds and in pores; few fine black concretions; 25 percent shale channers; very strongly acid; abrupt irregular boundary.

C—28 to 33 inches; yellowish red (5YR 4/6) extremely channery clay; massive; friable; common distinct clay films on faces of shale fragments; 85 percent shale channers; very strongly acid; gradual wavy boundary.

Cr—33 to 50 inches; tilted and fractured, moderately hard shale bedrock.

Range in Characteristics

Depth to bedrock: 20 to 40 inches

Rock fragments: Shale channers

Soil reaction (pH): Extremely acid to strongly acid (except in limed areas)

Ap horizon:

Hue—10YR

Value—4 to 6

Chroma—3 or 4

Texture of fine-earth fraction—silt loam

Content of rock fragments, by volume—0 to 30 percent

Bt horizon:

Hue—5YR or 7.5YR

Value—4 or 5

Chroma—4 to 8

Texture of fine-earth fraction—clay, silty clay, or silty clay loam

Content of rock fragments, by volume—0 to 30 percent

C horizon (if it occurs):

Hue—5YR or 7.5YR

Value—4 or 5

Chroma—4 to 8

Texture of fine-earth fraction—clay, silty clay, or silty clay loam

Content of rock fragments, by volume—30 to 85 percent

Cr layer:

Bedrock—weathered shale that can be removed with hand tools

Wallen Series

Depth class: Moderately deep (20 to 40 inches)

Drainage class: Somewhat excessively drained

Permeability: Moderately rapid

Slope range: 25 to 75 percent

Landscape positions: Summits, shoulders, and backslopes

Parent material: Residuum from sandstone; affected by soil creep in the upper part

Taxonomic class: Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts

Typical Pedon

Wallen very cobbly loam in an area of Wallen-Rock outcrop complex, 25 to 75 percent slopes, bouldery; site is on top of House Mountain, in eastern Knox County, 200 feet

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south and 5 degrees west of the old lookout tower; John Sevier topographic quadrangle; lat. 36 degrees 5 minutes 40 seconds N. and long. 83 degrees 46 minutes 3 seconds W.

Oe—0 to 2 inches; slightly decomposed hardwood leaf litter.

A—2 to 5 inches; very dark grayish brown (10YR 3/2) very cobbly loam; weak fine granular structure; very friable; many fine and medium roots; 40 percent cobbles and gravel; very strongly acid; abrupt smooth boundary.

BE—5 to 10 inches; light yellowish brown (10YR 6/4) gravelly loam; weak medium granular structure; very friable; many fine, medium, and coarse roots; 30 percent gravel and cobbles; very strongly acid; clear smooth boundary.

Bw—10 to 17 inches; brownish yellow (10YR 6/6) very cobbly loam; weak fine subangular blocky structure; very friable; common fine and medium roots; 60 percent cobbles and gravel; extremely acid; clear smooth boundary.

C—17 to 24 inches; brownish yellow (10YR 6/6) extremely stony loam; massive; very friable; few fine and medium roots; 75 percent stones and cobbles; extremely acid; abrupt wavy boundary.

R—24 inches; hard sandstone.

Range in Characteristics

Depth to bedrock: 20 to 40 inches to hard bedrock

Rock fragments: Sandstone gravel, cobbles, or stones

Soil reaction (pH): Extremely acid or very strongly acid

A horizon:

Hue—10YR

Value—3 to 6

Chroma—1 to 4

Texture of fine-earth fraction—loam or fine sandy loam

Content of rock fragments, by volume—15 to 45 percent

BE horizon (if it occurs):

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—3 to 6

Texture of fine-earth fraction—loam or fine sandy loam

Content of rock fragments, by volume—35 to 65 percent

Bw horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 6

Texture of fine-earth fraction—loam or fine sandy loam

Content of rock fragments, by volume—35 to 65 percent

C horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 6

Texture of fine-earth fraction—loam or fine sandy loam

Content of rock fragments, by volume—35 to 80 percent

R layer:

Bedrock—hard sandstone bedrock

Waynesboro Series

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained

Permeability: Moderate

Slope range: 2 to 25 percent

Landscape positions: High stream terraces

Parent material: Old alluvium

Taxonomic class: Fine, kaolinitic, thermic Typic Paleudults

Typical Pedon

Waynesboro loam, 5 to 12 percent slopes; from Highway I-40 in Knoxville, take the James White Parkway exit, go 0.5 mile to the Summit Hill exit, go east on Summit Hill Drive 0.6 mile to where it turns into Dandridge Avenue, go 1.4 miles on Dandridge Avenue to Riverside Drive, go east 1.9 miles to the end of Riverside Drive to where it turns into Kreis Road, go 0.4 mile to the end of the road; site is 1,000 feet south and 58 degrees west of the end of the road; Shook's Gap topographic quadrangle; lat. 35 degrees 57 minutes 31 seconds N. and long. 83 degrees 51 minutes 30 seconds W.

Ap—0 to 6 inches; dark brown (7.5YR 3/3) loam; moderate fine granular and weak fine subangular blocky structure; common fine and medium roots; neutral; abrupt smooth boundary.

BA—6 to 12 inches; yellowish red (5YR 4/6) clay loam; common coarse distinct dark brown (7.5YR 3/3) mottles; weak fine subangular blocky structure; common fine and medium roots; slightly acid; clear smooth boundary.

Bt1—12 to 30 inches; red (2.5YR 4/6) clay; common medium prominent brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; few fine roots; common distinct clay films; slightly acid; gradual smooth boundary.

Bt2—30 to 43 inches; red (2.5YR 4/6) clay; few medium prominent brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; many distinct clay films; very strongly acid; gradual smooth boundary.

Bt3—43 to 62 inches; yellowish red (5YR 4/6) clay; few medium prominent brownish yellow (10YR 6/6) mottles; weak and moderate fine subangular blocky structure; common distinct clay films; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments: Chert or quartzite pebbles and sandstone cobbles

Soil reaction (pH): Strongly acid or very strongly acid

Ap horizon:

Hue—7.5YR to 10YR

Value—3 or 4

Chroma—3 or 4

Texture of fine-earth fraction—fine sandy loam, loam, silt loam, or clay loam

Content of rock fragments, by volume—0 to 25 percent

BA horizon (if it occurs):

Hue—5YR or 7.5YR

Value—4 or 5

Chroma—6 to 8

Texture of fine-earth fraction—clay loam or loam

Content of rock fragments, by volume—0 to 15 percent

Bt horizon:

- Hue—dominantly 2.5YR or 5YR; 7.5YR in the upper few inches of horizon in some pedons
- Value—4 or 5
- Chroma—6 to 8
- Texture of fine-earth fraction—clay or clay loam
- Content of rock fragments, by volume—0 to 15 percent
- Mottles—shades of red, yellow, or brown

Whitwell Series

Depth class: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Permeability: Moderate

Slope range: 0 to 5 percent

Landscape positions: Low stream terraces

Parent material: Loamy alluvium

Taxonomic class: Fine-loamy, siliceous, semiactive, thermic Aquic Hapludults

Typical Pedon

Whitwell loam, 2 to 5 percent slopes, rarely flooded; from Highway I-75 in Knoxville, take the Emory Road exit, turn southwest and go 0.7 mile to Heiskell Road, turn right on Heiskell and go 3.2 miles to the intersection with Bull Run Valley Drive to the west (left); site is 6,900 feet south and 37 degrees west of the intersection; Powell topographic quadrangle; lat. 36 degrees 3 minutes 29 seconds N. and long. 84 degrees 3 minutes 42 seconds W.

Ap—0 to 9 inches; brown (10YR 4/3) loam; few medium faint light yellowish brown (10YR 4/4) mottles; moderate fine subangular blocky structure; very friable; common fine and medium roots; few very fine manganese concretions; slightly acid; clear smooth boundary.

BA—9 to 16 inches; brownish yellow (10YR 6/6) loam; common medium distinct dark yellowish brown (10YR 4/4) mottles; weak fine subangular blocky structure; very friable; few fine and medium roots; slightly acid; clear smooth boundary.

Bt1—16 to 29 inches; brownish yellow (10YR 6/8) clay loam; common fine and medium distinct pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; few very fine roots; few distinct clay films; common medium distinct light brownish gray (10YR 6/2) iron depletions; strongly acid; clear smooth boundary.

Bt2—29 to 47 inches; pale brown (10YR 6/3) clay loam; weak medium subangular blocky structure; friable; few distinct clay films; common fine and medium faint grayish brown (10YR 5/2) iron depletions and many medium and coarse strong brown (7.5YR 5/6) iron accumulations; strongly acid; clear smooth boundary.

BCg—47 to 60 inches; grayish brown (10YR 5/2) clay; weak medium subangular blocky structure; firm; many coarse prominent brownish yellow (10YR 6/8) and coarse strong brown (7.5YR 5/6) iron accumulations; strongly acid; clear smooth boundary.

Cg—60 to 65 inches; grayish brown (10YR 5/2) sandy clay; massive; friable; many coarse black (10YR 2/1) manganese masses; many coarse prominent brown (7.5YR 4/4) iron accumulations; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Soil Survey of Knox County, Tennessee

Rock fragments: Rounded gravel

Soil reaction (pH): Strongly acid or very strongly acid (except in limed areas)

A and Ap horizons:

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 4

Texture of fine-earth fraction—loam, silt loam, or sandy loam

Content of rock fragments, by volume—0 to 15 percent

BA horizon (if it occurs):

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Texture of fine-earth fraction—loam, clay loam, silt loam, or silty clay loam

Content of rock fragments, by volume—0 to 15 percent

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 8

Texture of fine-earth fraction—loam, clay loam, silt loam, or silty clay loam

Content of rock fragments, by volume—0 to 15 percent

Mottles and redoximorphic features—shades of brown, yellow, or gray

BC and C horizons (if they occur):

Hue—7.5YR to 2.5Y

Value—5 or 6

Chroma—2 to 8

Texture of fine-earth fraction—clay, sandy clay, sandy clay loam, sandy loam, or loam

Content of rock fragments, by volume—0 to 15 percent

Mottles and redoximorphic features—shades of brown, yellow, or gray

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 40-inch profile or to a limiting layer is expressed as:

Very low	0 to 2 inches
Low	2 to 4 inches
Moderate	4 to 6 inches
High	more than 6 inches

Backslope. The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Backslopes in profile are commonly steep, are linear, and may or may not include cliff segments.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

- Breast height.** An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Cable yarding.** A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.
- Canopy.** The leafy crown of trees or shrubs.
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Channery soil material.** Soil material that is, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.
- Chemical treatment.** Control of unwanted vegetation through the use of chemicals.
- Chert.** A form of silica often found as an impurity in limestone or dolomite. It has the chemical composition of quartz, but lacks a crystal structure. Flint is a specific type of chert.
- Chiseling.** Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.
- Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay depletions.** Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.
- Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- Coarse textured soil.** Sand or loamy sand.
- Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
- Cobbly soil material.** Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.
- Colluvium.** Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.
- Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
- Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such

an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane that typically takes the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Crystalline rock. A term describing both igneous and metamorphic rocks such as granite, gneiss, or schist.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

- Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.
- Dense layer** (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.
- Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep soils, 20 to 40 inches; shallow soils, 10 to 20 inches; and very shallow soils, less than 10 inches.
- Depth to rock** (in tables). Bedrock is too near the surface for the specified use.
- Dip slope.** A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.
- Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.
- Drainage class (natural).** Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, through either drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained*. These classes are defined in the “Soil Survey Manual.”
- Drainage, surface.** Runoff, or surface flow of water, from an area.
- Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
- Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
- Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.
- Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.
- Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.
- Excess fines** (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.
- Fallow.** Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.
- Fast intake** (in tables). The rapid movement of water into the soil.
- Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
- Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the

field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

- Fill slope.** A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.
- Fine textured soil.** Sandy clay, silty clay, or clay.
- Firebreak.** An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designed roads also serve as firebreaks.
- First bottom.** The normal flood plain of a stream, subject to frequent or occasional flooding.
- Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.
- Flood plain.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.
- Fluvial.** Of or pertaining to rivers; produced by river action, as a fluvial plain.
- Foothill.** A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.
- Footslope.** The inclined surface at the base of a hill.
- Forb.** Any herbaceous plant not a grass or a sedge.
- Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.
- Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.
- Fragile** (in tables). A soil that is easily damaged by use or disturbance.
- Fragipan.** A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.
- Frost action** (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.
- Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.
- Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.
- Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.
- Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.
- Gravelly soil material.** Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.
- Green manure crop (agronomy).** A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.
- Ground water.** Water filling all the unblocked pores of the material below the water table.
- Gully.** A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

- Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.
- Hardpan.** A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.
- High-residue crops.** Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.
- Hill.** A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.
- Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:
- O horizon.*—An organic layer of fresh and decaying plant residue.
- A horizon.*—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.
- E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
- B horizon.*—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.
- C horizon.*—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.
- Cr layer.*—Soft, weathered, or partially consolidated bedrock beneath the soil.
- R layer.*—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.
- Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.
- Hydrologic soil groups.** Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.
- Igneous rock.** Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.
- Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Lithochromic. Used to describe mottles whose color is inherited from the parent material in which the soil formed.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate,

gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Metasedimentary rock. Sedimentary rock such as shale, siltstone, or sandstone that has been slightly altered by metamorphic processes such as heat and pressure. Such rocks retain much of their original appearance and physical properties but have altered mineralogical characteristics. Examples are metasandstone and arkose.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of

decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, hardpan, fragipan, claypan, plowpan, and traffic pan.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipe-like cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Extremely acid	less than 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

- Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.
- Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.
- Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.
- Root zone.** The part of the soil that can be penetrated by plant roots.
- Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.
- Sand.** As a soil separate, individual rock or mineral fragments ranging from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.
- Sandstone.** Sedimentary rock containing dominantly sand-sized particles.
- Saprolite.** Unconsolidated residual material underlying the soil and grading to hard bedrock below.
- Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.
- Second bottom.** The first terrace above the normal flood plain (or first bottom) of a river.
- Sedimentary rock.** Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.
- Seepage** (in tables). The movement of water through the soil. Seepage adversely affects the specified use.
- Sequum.** A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)
- Series, soil.** A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.
- Shale.** Sedimentary rock formed by the hardening of a clay deposit.
- Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.
- Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.
- Silica.** A combination of silicon and oxygen. The mineral form is called quartz.
- Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.
- Siltstone.** Sedimentary rock made up of dominantly silt-sized particles.
- Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
- Sinkhole.** A depression in the landscape where limestone has been dissolved.
- Site index.** A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height

attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percent slope is vertical distance divided by horizontal distance, then multiplied by 100. Thus, a 20 percent slope is a vertical change of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are listed below. (Other slope breaks are used for some of the map units in this survey. This is done to facilitate joining soil maps with adjacent survey areas.)

Nearly level	0 to 2 percent slopes (0 to 3 percent slopes on flood plains and low terraces)
Gently sloping	2 to 5 percent
Sloping	5 to 12 percent
Moderately steep	12 to 25 percent
Steep	25 to 35 percent
Very steep	35 to 50 percent
Extremely steep	more than 50 percent

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless soils* are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The outermost inclined surface at the base of a hill; part of a footslope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse-grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Soil Survey of Knox County, Tennessee

Table 1.—Temperature and Precipitation
(Recorded in the period 1961-90 at Knoxville, Tennessee)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snow-fall
				Maximum temp. higher than--	Minimum temp. lower than--			Less than--	More than--		
	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>Units</u>	<u>In</u>	<u>In</u>	<u>In</u>		<u>In</u>
January--	45.9	27.5	36.7	70	-2	15	4.17	2.58	5.59	8	5.4
February-	50.9	30.6	40.7	75	6	31	4.06	2.40	5.55	7	4.0
March----	61.3	39.0	50.1	82	17	121	5.09	2.99	6.97	8	1.3
April----	70.4	46.9	58.6	87	27	281	3.72	2.23	5.05	7	0.7
May-----	77.6	55.4	66.5	90	37	513	4.13	2.22	5.81	7	0.0
June-----	84.5	63.5	74.0	95	48	719	3.97	2.11	5.60	7	0.0
July-----	87.1	67.6	77.4	97	56	849	4.67	2.65	6.46	8	0.0
August---	86.7	67.0	76.8	97	56	832	3.13	2.01	4.15	6	0.0
September	81.2	60.6	70.9	93	42	627	3.07	1.47	4.45	5	0.0
October--	70.6	47.7	59.2	85	30	297	2.84	1.67	4.07	5	0.0
November-	59.9	39.1	49.5	79	19	101	3.75	2.51	4.89	6	0.2
December-	50.1	31.4	40.8	73	8	31	4.54	2.49	6.34	7	1.9
Yearly: Average	68.8	48.0	58.4	---	---	---	---	---	---	---	---
Extreme	102	-24	---	98	-4	---	---	---	---	---	---
Total--	---	---	---	---	---	4,416	47.14	40.37	53.64	81	13.5

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Soil Survey of Knox County, Tennessee

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Knoxville, Tennessee)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 28	Apr. 12	Apr. 19
2 years in 10 later than--	Mar. 20	Apr. 5	Apr. 14
5 years in 10 later than--	Mar. 6	Mar. 22	Apr. 4
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 12	Oct. 26	Oct. 18
2 years in 10 earlier than--	Nov. 17	Nov. 1	Oct. 23
5 years in 10 earlier than-	Nov. 27	Nov. 12	Nov. 3

Table 3.—Growing Season

(Recorded in the period 1961-90 at Knoxville, Tennessee)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	236	206	187
8 years in 10	245	215	196
5 years in 10	264	233	212
2 years in 10	282	251	228
1 year in 10	292	261	237

Soil Survey of Knox County, Tennessee

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AmC	Apison-Montevallo complex, 5 to 12 percent slopes-----	2,362	0.7
AmD	Apison-Montevallo complex, 12 to 25 percent slopes-----	4,429	1.3
AmE	Apison-Montevallo complex, 25 to 35 percent slopes, rocky-----	5,271	1.6
AmF	Apison-Montevallo complex, 35 to 75 percent slopes, rocky-----	11,741	3.5
Bd	Bloomingtondale silt loam, 0 to 2 percent slopes, occasionally flooded--	2,323	0.7
Bh	Bloomingtondale-Hamblen complex, 0 to 3 percent slopes, occasionally flooded-----	3,395	1.0
CcC	Coghill-Corryton complex, 5 to 12 percent slopes-----	3,270	1.0
CcD	Coghill-Corryton complex, 12 to 25 percent slopes-----	3,432	1.0
CcE	Coghill-Corryton complex, 25 to 65 percent slopes, rocky-----	11,005	3.3
CeB3	Collegedale silty clay loam, 2 to 5 percent slopes, severely eroded--	291	*
CeC3	Collegedale silty clay loam, 5 to 12 percent slopes, severely eroded--	327	*
CeD3	Collegedale silty clay loam, 12 to 25 percent slopes, severely eroded	175	*
CgB	Collegedale-Loyston-Rock outcrop complex, 2 to 5 percent slopes-----	285	*
CkC	Collegedale-Talbott complex, 5 to 12 percent slopes, rocky-----	3,014	0.9
CkD	Collegedale-Talbott complex, 12 to 25 percent slopes, rocky-----	1,335	0.4
CoB	Corryton loam, 2 to 5 percent slopes-----	3,070	0.9
CoC	Corryton loam, 5 to 12 percent slopes-----	2,519	0.7
CoD	Corryton loam, 12 to 25 percent slopes-----	932	0.3
CtB	Corryton-Townley complex, 2 to 5 percent slopes-----	6,039	1.8
CtC	Corryton-Townley complex, 5 to 12 percent slopes-----	11,928	3.5
CzC	Corryton-Udorthents-Urban land complex, 2 to 12 percent slopes-----	7,744	2.3
CzD	Corryton-Udorthents-Urban land complex, 12 to 25 percent slopes-----	2,450	0.7
DeB	Dewey silt loam, 2 to 5 percent slopes-----	2,469	0.7
DeC2	Dewey silt loam, 5 to 12 percent slopes, eroded-----	12,614	3.7
DeD2	Dewey silt loam, 12 to 25 percent slopes, eroded-----	10,798	3.2
DeE2	Dewey loam, 25 to 40 percent slopes, eroded-----	8,089	2.4
DgE3	Dewey-Coghill complex, 25 to 60 percent slopes, severely eroded-----	868	0.3
DwD	Dewey-Etowah complex, 12 to 20 percent slopes-----	129	*
DwE	Dewey-Etowah complex, 20 to 35 percent slopes-----	116	*
DyC	Dewey-Udorthents-Urban land complex, 2 to 12 percent slopes-----	12,056	3.6
DyD	Dewey-Udorthents-Urban land complex, 12 to 25 percent slopes-----	6,163	1.8
Dz	Dumps, landfills-----	53	*
EmB	Emory silt loam, 2 to 5 percent slopes-----	4,939	1.5
EmC	Emory silt loam, 5 to 12 percent slopes-----	740	0.2
EtB	Etowah loam, 2 to 5 percent slopes-----	1,133	0.3
EvB	Etowah-Minvale complex, 2 to 5 percent slopes-----	10,243	3.0
FuC2	Fullerton gravelly silt loam, 5 to 12 percent slopes, eroded-----	862	0.3
FuD2	Fullerton gravelly silt loam, 12 to 25 percent slopes, eroded-----	92	*
FuE2	Fullerton gravelly silt loam, 25 to 60 percent slopes, eroded-----	57	*
FvC	Fullerton-Minvale complex, 5 to 12 percent slopes-----	12,552	3.7
FzC	Fullerton-Udorthents-Urban land complex, 2 to 12 percent slopes-----	1,940	0.6
FzD	Fullerton-Udorthents-Urban land complex, 12 to 25 percent slopes-----	2,578	0.8
He	Heiskell silt loam, 0 to 2 percent slopes, occasionally flooded-----	1,143	0.3
HeB	Heiskell silt loam, 2 to 5 percent slopes-----	14,749	4.4
LoC	Loyston-Rock outcrop complex, 5 to 12 percent slopes-----	738	0.2
LoE	Loyston silt loam, 25 to 65 percent slopes, rocky-----	1,538	0.5
LrF	Loyston-Nonaburg-Rock outcrop complex, 35 to 80 percent slopes, flaggy-----	2,266	0.7
LtC	Loyston-Talbott-Rock outcrop complex, 2 to 15 percent slopes-----	7,768	2.3
LtD	Loyston-Talbott-Rock outcrop complex, 15 to 50 percent slopes-----	9,812	2.9
MfD	Minvale-Fullerton complex, 12 to 25 percent slopes, stony-----	12,855	3.8
MfE	Minvale-Bodine-Fullerton complex, 25 to 50 percent slopes, stony-----	22,143	6.6
NnD3	Nonaburg channery silt loam, 12 to 25 percent slopes, severely eroded, rocky-----	11,541	3.4
NnE3	Nonaburg channery silt loam, 25 to 50 percent slopes, severely eroded, rocky-----	7,528	2.2
Ph	Pettyjon-Hamblen complex, 0 to 3 percent slopes, occasionally flooded	2,145	0.6
Pz	Pits, mines, and dumps-----	1,159	0.3
Ro	Rockdell gravelly loam, 0 to 4 percent slopes, rarely flooded-----	1,772	0.5
SaC	Salacoa gravelly loam, 5 to 12 percent slopes-----	781	0.2

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
SaD	Salacoa gravelly loam, 12 to 25 percent slopes-----	1,204	0.4
SbC	Salacoa-Apison complex, 5 to 12 percent slopes-----	3,671	1.1
SeC	Salacoa-Udorthents-Urban land complex, 2 to 12 percent slopes-----	1,324	0.4
SeD	Salacoa-Udorthents-Urban land complex, 12 to 25 percent slopes-----	329	*
ShB	Shady loam, 2 to 5 percent slopes-----	1,786	0.5
ShC	Shady loam, 5 to 12 percent slopes-----	157	*
So	Shady-Whitwell complex, 0 to 3 percent slopes, rarely flooded-----	1,946	0.6
St	Steadman silt loam, 0 to 3 percent slopes, occasionally flooded-----	9,824	2.9
SwB	Swafford silt loam, 2 to 5 percent slopes-----	2,213	0.7
SwC	Swafford silt loam, 5 to 12 percent slopes-----	1,317	0.4
TbC2	Talbott-Rock outcrop-Bradyville complex, 5 to 20 percent slopes, eroded-----	138	*
Tc	Toccoa fine sandy loam, 0 to 3 percent slopes, rarely flooded-----	248	*
ToC	Townley silt loam, 5 to 12 percent slopes-----	639	0.2
TsD	Townley-Loyston complex, 12 to 25 percent slopes, rocky-----	676	0.2
TvD	Townley-Montevallo complex, 12 to 20 percent slopes-----	205	*
TvE	Townley-Montevallo complex, 20 to 35 percent slopes-----	181	*
TvF	Townley-Montevallo complex, 35 to 60 percent slopes-----	526	0.2
Ur	Urban land-----	5,459	1.6
Uu	Urban land-Udorthents complex-----	12,643	3.8
W	Water-----	12,800	3.8
WaF	Wallen-Rock outcrop complex, 25 to 75 percent slopes, bouldery-----	71	*
WeB	Waynesboro loam, 2 to 5 percent slopes-----	473	0.1
WeC	Waynesboro loam, 5 to 12 percent slopes-----	2,351	0.7
WeD2	Waynesboro loam, 12 to 25 percent slopes, eroded-----	1,625	0.5
Wsc	Waynesboro cobbly loam, 5 to 12 percent slopes-----	353	0.1
WwB	Whitwell loam, 2 to 5 percent slopes, rarely flooded-----	572	0.2
	Total-----	336,600	100.0

* Less than 0.1 percent.

Soil Survey of Knox County, Tennessee

Table 5.—Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Corn silage	Grass-legume hay	Grass-legume pasture	Tobacco
		<u>Bu</u>	<u>Tons</u>	<u>Tons</u>	<u>AUM</u>	<u>Lbs</u>
AmC----- Apison-Montevallo	4e	70.00	---	2.50	5.20	---
AmD----- Apison-Montevallo	6e	60.00	---	2.00	5.20	---
AmE----- Apison-Montevallo	7s	---	---	---	---	---
AmF----- Apison-Montevallo	7s	---	---	---	---	---
Bd----- Bloomingdale	4w	---	---	3.00	7.60	---
Bh----- Bloomingdale-Hamblen	4w	80.00	18.00	3.00	7.50	---
CcC----- Coghill-Corryton	3e	85.00	16.50	3.00	7.60	---
CcD----- Coghill-Corryton	4e	75.00	---	2.60	6.60	---
CcE----- Coghill-Corryton	7e	---	---	---	---	---
CeB3----- Collegedale	3e	75.00	15.00	2.50	5.50	2,050.00
CeC3----- Collegedale	4e	70.00	14.00	2.20	5.50	1,950.00
CeD3----- Collegedale	6e	65.00	---	2.00	5.00	---
CgB----- Collegedale-Loyston-Rock outcrop	6e	---	---	2.00	5.00	---
CkC----- Collegedale-Talbott	6e	---	---	2.20	5.00	1,900.00
CkD----- Collegedale-Talbott	6e	---	---	2.00	5.00	---
CoB----- Corryton	2e	90.00	18.00	3.20	8.10	2,100.00
CoC----- Corryton	3e	80.00	16.00	3.00	7.60	2,000.00
CoD----- Corryton	4e	75.00	---	2.20	7.00	---

Soil Survey of Knox County, Tennessee

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Grass-legume hay	Grass-legume pasture	Tobacco
		Bu	Tons	Tons	AUM	Lbs
CtB----- Corryton-Townley	3e	85.00	17.00	2.60	7.50	2,000.00
CtC----- Corryton-Townley	4e	75.00	15.00	2.40	7.00	1,900.00
CzC, CzD. Corryton-Udorthents- Urban land						
DeB----- Dewey	2e	105.00	21.00	3.50	8.70	2,300.00
DeC2----- Dewey	3e	90.00	18.00	3.20	8.10	2,200.00
DeD2----- Dewey	4e	85.00	---	2.80	7.10	---
DeE2----- Dewey	6e	---	---	---	6.00	---
DgE3----- Dewey-Coghill	6e	---	---	---	6.00	---
DwD----- Dewey-Etowah	4e	85.00	---	2.80	7.10	---
DwE----- Dewey-Etowah	6e	---	---	---	6.00	---
DyC, DyD. Dewey-Udorthents-Urban land						
Dz. Dumps						
EmB----- Emory	2e	110.00	22.00	3.50	8.80	2,200.00
EmC----- Emory	3e	95.00	19.00	3.20	8.50	2,100.00
EtB----- Etowah	2e	110.00	22.00	3.50	8.80	2,300.00
EvB----- Etowah-Minvale	2e	95.00	19.00	3.20	8.00	2,200.00
FuC2----- Fullerton	3e	70.00	14.00	2.60	5.00	1,700.00
FuD2----- Fullerton	4e	---	---	2.10	4.50	---
FuE2----- Fullerton	6e	---	---	---	4.00	---
FvC----- Fullerton-Minvale	3e	75.00	15.00	2.60	6.60	1,700.00

Soil Survey of Knox County, Tennessee

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Grass-legume hay	Grass-legume pasture	Tobacco
		Bu	Tons	Tons	AUM	Lbs
FzC, FzD. Fullerton-Udorthents- Urban land						
He, HeB----- Heiskell	2w	95.00	19.00	3.00	7.50	2,000.00
LoC----- Loyston-Rock outcrop	7s	---	---	---	4.00	---
LoE----- Loyston	7e	---	---	---	3.50	---
LrF----- Loyston-Nonaburg-Rock outcrop	7e	---	---	---	3.00	---
LtC----- Loyston-Talbott-Rock outcrop	7s	---	---	---	4.00	---
LtD----- Loyston-Talbott-Rock outcrop	7e	---	---	---	2.50	---
MfD----- Minvale-Fullerton	4e	60.00	---	2.50	6.00	---
MfE----- Minvale-Bodine-Fullerton	6e	---	---	---	5.00	---
NnD3----- Nonaburg	6e	---	---	---	4.00	---
NnE3----- Nonaburg	7e	---	---	---	3.00	---
Ph----- Pettyjon-Hamblen	3w	100.00	20.00	3.20	7.50	2,100.00
Pz. Pits, mines, and dumps						
Ro----- Rockdell	2w	65.00	13.00	2.60	6.60	---
SaC----- Salacoa	3e	85.00	17.00	2.60	6.50	2,000.00
SaD----- Salacoa	4e	80.00	---	2.30	6.00	---
SbC----- Salacoa-Apison	3e	85.00	17.00	2.50	6.50	1,900.00
SeC, SeD. Salacoa-Udorthents- Urban land						
ShB----- Shady	2e	120.00	24.00	3.20	8.00	2,500.00

Soil Survey of Knox County, Tennessee

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Grass-legume hay	Grass-legume pasture	Tobacco
		Bu	Tons	Tons	AUM	Lbs
ShC----- Shady	3e	110.00	22.00	3.00	7.50	2,300.00
So----- Shady-Whitwell	2w	100.00	20.00	3.00	8.00	1,900.00
St----- Steadman	3w	120.00	24.00	3.50	8.50	2,300.00
SwB----- Swafford	2e	105.00	21.00	3.20	8.00	2,200.00
SwC----- Swafford	3e	95.00	19.00	2.75	7.00	2,000.00
TbC2----- Talbott-Rock outcrop- Bradyville	6e	---	---	2.00	5.00	---
Tc----- Toccoa	2w	110.00	22.00	3.20	8.00	---
ToC----- Townley	4e	---	---	2.20	5.50	---
TsD----- Townley-Loyston	7e	---	---	2.00	4.20	---
TvD----- Townley-Montevallo	7e	---	---	---	4.00	---
TvE----- Townley-Montevallo	7e	---	---	---	3.00	---
TvF----- Townley-Montevallo	7e	---	---	---	2.50	---
Ur. Urban land						
Uu. Urban land-Udorthents						
W. Water						
WaF----- Wallen-Rock outcrop	7s	---	---	---	---	---
WeB----- Waynesboro	2e	90.00	18.00	3.20	8.10	2,400.00
WeC----- Waynesboro	3e	85.00	17.00	3.00	7.50	2,300.00
WeD2----- Waynesboro	4e	80.00	---	2.50	6.50	---
WsC----- Waynesboro	3e	90.00	18.00	2.75	7.00	2,300.00
WwB----- Whitwell	2w	100.00	20.00	3.00	7.50	1,700.00

Soil Survey of Knox County, Tennessee

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland)

Map symbol	Soil name
CoB	Corryton loam, 2 to 5 percent slopes
CtB	Corryton-Townley complex, 2 to 5 percent slopes
DeB	Dewey silt loam, 2 to 5 percent slopes
EmB	Emory silt loam, 2 to 5 percent slopes
EtB	Etowah loam, 2 to 5 percent slopes
EvB	Etowah-Minvale complex, 2 to 5 percent slopes
He	Heiskell silt loam, 0 to 2 percent slopes, occasionally flooded
HeB	Heiskell silt loam, 2 to 5 percent slopes
Ph	Pettyjon-Hamblen complex, 0 to 3 percent slopes, occasionally flooded
ShB	Shady loam, 2 to 5 percent slopes
So	Shady-Whitwell complex, 0 to 3 percent slopes, rarely flooded
St	Steadman silt loam, 0 to 3 percent slopes, occasionally flooded
SwB	Swafford silt loam, 2 to 5 percent slopes
Tc	Toccoa fine sandy loam, 0 to 3 percent slopes, rarely flooded
WeB	Waynesboro loam, 2 to 5 percent slopes
WwB	Whitwell loam, 2 to 5 percent slopes, rarely flooded

Soil Survey of Knox County, Tennessee

Table 7.--Forestland Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
AmC:				
Apison-----	loblolly pine-----	80	---	loblolly pine, shortleaf pine
	northern red oak----	70	---	
	shortleaf pine-----	70	---	
	Virginia pine-----	70	---	
	yellow-poplar-----	90	---	
Montevallo-----	loblolly pine-----	66	86	loblolly pine, shortleaf pine, Virginia pine
	shortleaf pine-----	61	86	
	Virginia pine-----	61	86	
AmD, AmE, AmF:				
Apison-----	loblolly pine-----	80	---	loblolly pine, shortleaf pine
	northern red oak----	70	---	
	shortleaf pine-----	70	---	
	Virginia pine-----	70	---	
	yellow-poplar-----	90	---	
Montevallo-----	loblolly pine-----	61	72	loblolly pine, Virginia pine
	shortleaf pine-----	61	86	
	Virginia pine-----	61	86	
Bd:				
Bloomington-----	American sycamore----	---	---	American sycamore, sweetgum
	sweetgum-----	80	---	
Bh:				
Bloomington-----	American sycamore----	---	---	American sycamore, sweetgum
	sweetgum-----	80	---	
Hamblen-----	loblolly pine-----	90	129	loblolly pine, yellow-poplar
	northern red oak----	80	57	
	yellow-poplar-----	100	114	
CcC:				
Coghill-----	chestnut oak-----	---	---	eastern white pine, loblolly pine, shortleaf pine, white oak, yellow- poplar
	northern red oak----	70	---	
	white oak-----	75	---	
	yellow-poplar-----	85	---	
Corryton-----	loblolly pine-----	80	---	black walnut, eastern white pine, loblolly pine, shortleaf pine, white oak, yellow-poplar
	shortleaf pine-----	71	---	
	Virginia pine-----	70	---	
CcD, CcE:				
Coghill-----	chestnut oak-----	---	---	eastern white pine, loblolly pine, shortleaf pine, white oak, yellow- poplar
	northern red oak----	70	---	
	white oak-----	75	---	
	yellow-poplar-----	85	---	
Corryton-----	loblolly pine-----	80	114	---
	shortleaf pine-----	71	114	
	Virginia pine-----	70	114	

Soil Survey of Knox County, Tennessee

Table 7.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
CeB3, CeC3, CeD3: Collegedale-----	loblolly pine----- shortleaf pine----- southern red oak---- Virginia pine----- white oak----- yellow-poplar-----	80 70 70 70 70 90	114 114 57 114 57 86	loblolly pine, shortleaf pine, Virginia pine, yellow-poplar
CgB: Collegedale-----	loblolly pine----- shortleaf pine----- southern red oak---- Virginia pine----- white oak----- yellow-poplar-----	80 70 70 70 70 90	114 114 57 114 57 86	loblolly pine, shortleaf pine, Virginia pine, yellow-poplar
Loyston-----	American elm----- black cherry----- black locust----- black walnut----- boxelder----- chinkapin oak----- common hackberry---- eastern redcedar---- honeylocust----- white ash-----	--- --- --- 71 --- --- --- 42 --- 75	--- --- --- --- --- --- --- --- --- 43	eastern redcedar, Virginia pine, white ash, white oak
Rock outcrop.				
CkC, CkD: Collegedale-----	loblolly pine----- shortleaf pine----- southern red oak---- Virginia pine----- white oak----- yellow-poplar-----	80 70 70 70 70 90	114 114 57 114 57 86	loblolly pine, shortleaf pine, Virginia pine, yellow-poplar
Talbott-----	eastern redcedar---- loblolly pine----- northern red oak---- shortleaf pine-----	46 80 65 64	57 114 43 100	eastern redcedar, loblolly pine, shortleaf pine
CoB: Corryton-----	loblolly pine----- white oak----- yellow-poplar-----	80 70 90	--- --- ---	black walnut, eastern white pine, loblolly pine, shortleaf pine, white oak, yellow-poplar
CoC: Corryton-----	loblolly pine----- shortleaf pine----- Virginia pine-----	80 71 70	--- --- ---	black walnut, eastern white pine, loblolly pine, shortleaf pine, white oak, yellow-poplar

Soil Survey of Knox County, Tennessee

Table 7.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
CoD:				
Corryton-----	loblolly pine-----	80	114	---
	shortleaf pine-----	71	114	
	Virginia pine-----	70	114	
CtB:				
Corryton-----	loblolly pine-----	80	---	black walnut,
	white oak-----	70	---	eastern white
	yellow-poplar-----	90	---	pine, loblolly
				pine, shortleaf
				pine, white oak,
				yellow-poplar
Townley-----	loblolly pine-----	70	86	loblolly pine,
	shortleaf pine-----	60	86	Virginia pine
	Virginia pine-----	70	114	
CtC:				
Corryton-----	loblolly pine-----	80	---	black walnut,
	shortleaf pine-----	71	---	eastern white
	Virginia pine-----	70	---	pine, loblolly
				pine, shortleaf
				pine, white oak,
				yellow-poplar
Townley-----	loblolly pine-----	70	86	loblolly pine,
	shortleaf pine-----	60	86	Virginia pine
	Virginia pine-----	70	114	
CzC:				
Corryton-----	loblolly pine-----	80	---	black walnut,
	shortleaf pine-----	71	---	eastern white
	Virginia pine-----	70	---	pine, loblolly
				pine, shortleaf
				pine, white oak,
				yellow-poplar
Udorthents.				
Urban land.				
CzD:				
Corryton-----	loblolly pine-----	80	114	---
	shortleaf pine-----	71	114	
	Virginia pine-----	70	114	
Udorthents.				
Urban land.				
DeB, DeC2, DeD2:				
Dewey-----	loblolly pine-----	78	---	black walnut,
	shortleaf pine-----	73	---	eastern white
	southern red oak----	70	---	pine, loblolly
	Virginia pine-----	70	---	pine, yellow-
	white oak-----	70	---	poplar
	yellow-poplar-----	90	---	

Soil Survey of Knox County, Tennessee

Table 7.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
DeE2: Dewey-----	loblolly pine----- northern red oak---- shortleaf pine----- southern red oak---- Virginia pine----- white oak----- yellow-poplar-----	78 70 73 70 70 70 90	114 57 114 57 114 57 86	eastern redcedar, eastern white pine, loblolly pine
DgE3: Dewey-----	loblolly pine----- northern red oak---- shortleaf pine----- southern red oak---- Virginia pine----- white oak----- yellow-poplar-----	78 70 73 70 70 70 90	114 57 114 57 114 57 86	eastern redcedar, eastern white pine, loblolly pine
Coghill-----	chestnut oak----- northern red oak---- white oak----- yellow-poplar-----	--- 70 75 85	--- --- --- ---	eastern white pine, loblolly pine, shortleaf pine, white oak, yellow- poplar
DwD, DwE: Dewey-----	loblolly pine----- northern red oak---- shortleaf pine----- southern red oak---- Virginia pine----- white oak----- yellow-poplar-----	78 70 73 70 70 70 90	114 57 114 57 114 57 86	black walnut, eastern white pine, loblolly pine, yellow- poplar
Etowah-----	loblolly pine----- northern red oak---- shortleaf pine----- southern red oak---- yellow-poplar-----	90 80 80 80 90	129 57 129 57 86	black walnut, loblolly pine, yellow-poplar
DyC, DyD: Dewey-----	loblolly pine----- shortleaf pine----- southern red oak---- Virginia pine----- white oak----- yellow-poplar-----	78 73 70 70 70 90	--- --- --- --- --- ---	black walnut, eastern white pine, loblolly pine, yellow- poplar
Udorthents.				
Urban land.				
Dz. Dumps				

Soil Survey of Knox County, Tennessee

Table 7.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
EmB, EmC: Emory-----	black cherry----- black walnut----- loblolly pine----- northern red oak---- white ash----- yellow-poplar-----	--- --- 90 80 --- 104	--- --- 129 57 --- 114	black walnut, loblolly pine, yellow-poplar
EtB: Etowah-----	loblolly pine----- shortleaf pine----- southern red oak---- yellow-poplar-----	90 80 80 90	--- --- --- ---	black walnut, loblolly pine, white oak, yellow- poplar
EvB: Etowah-----	loblolly pine----- shortleaf pine----- southern red oak---- yellow-poplar-----	90 80 80 90	--- --- --- ---	black walnut, loblolly pine, white oak, yellow- poplar
Minvale-----	loblolly pine----- shortleaf pine----- Virginia pine----- white oak----- yellow-poplar-----	80 70 70 70 90	114 114 114 57 86	black walnut, loblolly pine, yellow-poplar
FuC2, FuD2, FuE2: Fullerton-----	shortleaf pine----- southern red oak---- yellow-poplar-----	67 70 90	100 57 86	loblolly pine, yellow-poplar
FvC: Fullerton-----	chestnut oak----- loblolly pine----- shortleaf pine----- southern red oak---- yellow-poplar-----	--- 80 67 70 90	--- --- --- --- ---	eastern white pine, loblolly pine, southern red oak, yellow-poplar
Minvale-----	loblolly pine----- shortleaf pine----- Virginia pine----- white oak----- yellow-poplar-----	80 70 70 70 90	--- --- --- --- ---	black walnut, eastern white pine, loblolly pine, shortleaf pine, white oak, yellow-poplar
FzC, FzD: Fullerton-----	chestnut oak----- loblolly pine----- shortleaf pine----- southern red oak---- yellow-poplar-----	--- 80 67 70 90	--- --- --- --- ---	eastern white pine, loblolly pine, southern red oak, yellow-poplar
Udorthents.				
Urban land.				

Soil Survey of Knox County, Tennessee

Table 7.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
He, HeB: Heiskell-----	loblolly pine----- northern red oak---- yellow-poplar-----	90 80 100	129 57 114	loblolly pine, yellow-poplar
LoC: Loyston-----	American elm----- black cherry----- black locust----- black walnut----- boxelder----- chinkapin oak----- common hackberry---- eastern redcedar---- honeylocust----- white ash-----	--- --- --- 71 --- --- --- 42 --- 75	--- --- --- --- --- --- --- --- --- 43	eastern redcedar, Virginia pine, white ash, white oak
Rock outcrop.				
LoE: Loyston-----	American elm----- black cherry----- black locust----- black walnut----- boxelder----- chinkapin oak----- common hackberry---- eastern redcedar---- honeylocust----- white ash-----	--- --- --- 71 --- --- --- 42 --- 75	--- --- --- --- --- --- --- --- --- 43	eastern redcedar, Virginia pine, white ash, white oak
LrF: Loyston-----	American elm----- black cherry----- black locust----- black walnut----- boxelder----- chinkapin oak----- common hackberry---- eastern redcedar---- honeylocust----- white ash-----	--- --- --- 71 --- --- --- 42 --- 75	--- --- --- --- --- --- --- --- --- 43	eastern redcedar, Virginia pine, white ash, white oak
Nonaburg-----	chestnut oak----- eastern redcedar----	--- 40	--- ---	eastern redcedar, Virginia pine
Rock outcrop.				
LtC, LtD: Loyston-----	American elm----- black cherry----- black locust----- black walnut----- boxelder----- chinkapin oak----- common hackberry---- eastern redcedar---- honeylocust----- white ash-----	--- --- --- 71 --- --- --- 42 --- 75	--- --- --- --- --- --- --- --- --- 43	eastern redcedar, Virginia pine, white ash, white oak

Soil Survey of Knox County, Tennessee

Table 7.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
LtC, LtD:				
Talbott-----	eastern redcedar----	46	57	eastern redcedar,
	loblolly pine-----	80	114	loblolly pine,
	northern red oak----	65	43	shortleaf pine
	shortleaf pine-----	64	100	
Rock outcrop.				
MfD:				
Minvale-----	loblolly pine-----	80	---	black walnut,
	shortleaf pine-----	70	---	eastern white
	Virginia pine-----	70	---	pine, loblolly
	white oak-----	70	---	pine, shortleaf
	yellow-poplar-----	90	---	pine, white oak,
				yellow-poplar
Fullerton-----	chestnut oak-----	---	---	eastern white pine,
	loblolly pine-----	80	---	loblolly pine,
	shortleaf pine-----	67	---	southern red oak,
	southern red oak----	70	---	yellow-poplar
	yellow-poplar-----	90	---	
MfE:				
Minvale-----	loblolly pine-----	80	---	black walnut,
	shortleaf pine-----	70	---	eastern white
	Virginia pine-----	70	---	pine, loblolly
	white oak-----	70	---	pine, white oak,
	yellow-poplar-----	90	---	yellow-poplar
Bodine-----	chestnut oak-----	---	---	loblolly pine,
	loblolly pine-----	---	---	shortleaf pine
	red maple-----	---	---	
	shortleaf pine-----	70	---	
	southern red oak----	70	---	
Fullerton-----	chestnut oak-----	---	---	eastern white pine,
	loblolly pine-----	80	---	loblolly pine,
	shortleaf pine-----	67	---	southern red oak,
	southern red oak----	70	---	yellow-poplar
	yellow-poplar-----	90	---	
NnD3, NnE3:				
Nonaburg-----	chestnut oak-----	---	---	eastern redcedar,
	eastern redcedar----	40	---	Virginia pine
Ph:				
Pettyjon-----	American sycamore---	---	---	black walnut, white
	white oak-----	80	---	oak, yellow-poplar
	yellow-poplar-----	100	---	
Hamblen-----	loblolly pine-----	90	129	loblolly pine,
	northern red oak----	80	57	yellow-poplar
	yellow-poplar-----	100	114	
Pz.				
Pits, mines, and dumps				

Soil Survey of Knox County, Tennessee

Table 7.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
Ro:				
Rockdell-----	American sycamore---	98	---	black walnut, loblolly pine, white oak, yellow- poplar
	common hackberry----	---	---	
	sweetgum-----	90	---	
	yellow-poplar-----	100	---	
SaC, SaD:				
Salacoa-----	eastern white pine--	80	143	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	loblolly pine-----	80	114	
	northern red oak----	70	57	
	yellow-poplar-----	90	86	
SbC:				
Salacoa-----	eastern white pine--	80	143	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	loblolly pine-----	80	114	
	northern red oak----	70	57	
	yellow-poplar-----	90	86	
Apison-----	loblolly pine-----	80	---	loblolly pine, shortleaf pine
	northern red oak----	70	---	
	shortleaf pine-----	70	---	
	Virginia pine-----	70	---	
	yellow-poplar-----	90	---	
SeC, SeD:				
Salacoa-----	eastern white pine--	80	143	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	loblolly pine-----	80	114	
	northern red oak----	70	57	
	yellow-poplar-----	90	86	
Udorthents.				
Urban land.				
ShB, ShC:				
Shady-----	hickory-----	---	---	black walnut, loblolly pine, yellow-poplar
	northern red oak----	80	57	
	southern red oak----	80	57	
	white oak-----	80	57	
	yellow-poplar-----	100	114	
So:				
Shady-----	hickory-----	---	---	black walnut, loblolly pine, yellow-poplar
	northern red oak----	80	57	
	southern red oak----	80	57	
	white oak-----	80	57	
	yellow-poplar-----	100	114	
Whitwell-----	eastern white pine--	90	172	eastern white pine, loblolly pine, sweetgum
	loblolly pine-----	90	129	
	northern red oak----	75	57	
	sweetgum-----	90	100	
	yellow-poplar-----	95	100	

Soil Survey of Knox County, Tennessee

Table 7.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
St:				
Steadman-----	northern red oak----	86	72	eastern white pine, northern red oak, shortleaf pine, Virginia pine
	white oak-----	85	72	
	yellow-poplar-----	95	100	
SwB, SwC:				
Swafford-----	northern red oak----	75	57	loblolly pine, sweetgum, yellow- poplar
	sweetgum-----	90	100	
	yellow-poplar-----	95	100	
TbC2:				
Talbott-----	eastern redcedar----	46	57	eastern redcedar, loblolly pine, shortleaf pine
	loblolly pine-----	80	114	
	northern red oak----	65	43	
	shortleaf pine-----	64	100	
Rock outcrop.				
Bradyville-----	eastern redcedar----	40	43	eastern redcedar, loblolly pine, shortleaf pine
	northern red oak----	70	57	
	white oak-----	70	57	
	yellow-poplar-----	90	86	
Tc:				
Toccoa-----	American sycamore----	---	---	American sycamore, loblolly pine, shortleaf pine, yellow-poplar
	loblolly pine-----	90	---	
	southern red oak----	---	---	
	sweetgum-----	100	---	
	yellow-poplar-----	107	---	
ToC:				
Townley-----	loblolly pine-----	70	86	loblolly pine, Virginia pine
	shortleaf pine-----	60	86	
	Virginia pine-----	70	114	
TsD:				
Townley-----	loblolly pine-----	70	86	loblolly pine, Virginia pine
	shortleaf pine-----	60	86	
	Virginia pine-----	70	114	
Loyston-----	American elm-----	---	---	eastern redcedar, Virginia pine, white ash, white oak
	black cherry-----	---	---	
	black locust-----	---	---	
	black walnut-----	71	---	
	boxelder-----	---	---	
	chinkapin oak-----	---	---	
	common hackberry-----	---	---	
	eastern redcedar----	42	---	
	honeylocust-----	---	---	
	white ash-----	75	43	
TvD, TvE, TvF:				
Townley-----	loblolly pine-----	70	86	loblolly pine, Virginia pine
	shortleaf pine-----	60	86	
	Virginia pine-----	70	114	

Soil Survey of Knox County, Tennessee

Table 7.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
TvD, TvE, TvF: Montevallo-----	loblolly pine----- shortleaf pine----- Virginia pine-----	61 61 61	72 86 86	loblolly pine, Virginia pine
Ur. Urban land.				
Uu. Urban land-Udorthents				
W. Water				
WaF: Wallen-----	northern red oak---- shortleaf pine----- Virginia pine-----	60 60 65	43 86 100	shortleaf pine, Virginia pine
Rock outcrop.				
WeB: Waynesboro-----	loblolly pine----- southern red oak---- white oak----- yellow-poplar-----	80 70 70 90	--- --- --- ---	black walnut, eastern white pine, loblolly pine, shortleaf pine, yellow- poplar
WeC, WeD2, WsC: Waynesboro-----	loblolly pine----- northern red oak---- southern red oak---- white oak----- yellow-poplar-----	80 70 70 70 90	114 57 57 57 86	black walnut, loblolly pine, shortleaf pine, yellow-poplar
WwB: Whitwell-----	eastern white pine-- loblolly pine----- northern red oak---- sweetgum----- yellow-poplar-----	90 90 75 90 95	172 129 57 100 100	eastern white pine, loblolly pine, sweetgum

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC: Apison-----	50	Moderate Low strength Landslides	0.50 0.10	Moderately suited Low strength Slope Landslides	0.50 0.50 0.10	Severe Low strength	1.00
Montevallo-----	25	Slight Landslides	0.10	Moderately suited Slope Landslides	0.50 0.10	Moderate Low strength	0.50
AmD: Apison-----	72	Severe Landslides Slope	1.00 0.50	Poorly suited Landslides Slope Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Montevallo-----	20	Severe Landslides Slope	1.00 0.50	Poorly suited Landslides Slope	1.00 1.00	Moderate Low strength	0.50
AmE: Apison-----	55	Severe Landslides Slope	1.00 0.50	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Montevallo-----	35	Severe Landslides Slope Stoniness	1.00 0.50 0.50	Poorly suited Slope Landslides Rock fragments	1.00 1.00 1.00	Moderate Low strength	0.50
AmF: Apison-----	58	Severe Slope Landslides Low strength	1.00 1.00 0.50	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Montevallo-----	25	Severe Slope Landslides Stoniness	1.00 1.00 0.50	Poorly suited Slope Landslides Rock fragments	1.00 1.00 1.00	Moderate Low strength	0.50
Bd: Bloomingdale, drained-----	55	Severe Flooding Low strength	1.00 0.50	Poorly suited Flooding Wetness Low strength	1.00 0.50 0.50	Severe Low strength	1.00

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bd: Bloomingdale, undrained-----	30	Moderate Low strength	0.50	Poorly suited Ponding Wetness Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Bh: Bloomingdale----	60	Severe Flooding Low strength	1.00 0.50	Poorly suited Flooding Wetness Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Hamblen-----	30	Moderate Flooding Low strength	0.50 0.50	Moderately suited Flooding Low strength	0.50 0.50	Severe Low strength	1.00
CcC: Coghill-----	50	Moderate Low strength Landslides	0.50 0.10	Moderately suited Slope Landslides	0.50 0.10	Moderate Low strength	0.50
Corryton-----	35	Moderate Low strength Landslides	0.50 0.10	Moderately suited Low strength Slope Landslides	0.50 0.50 0.10	Severe Low strength	1.00
CcD: Coghill-----	75	Moderate Landslides Slope	0.50 0.50	Poorly suited Slope Landslides	1.00 0.50	Moderate Low strength	0.50
Corryton-----	20	Moderate Landslides Slope	0.50 0.50	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50	Severe Low strength	1.00
CcE: Coghill-----	45	Severe Landslides Slope Stoniness Low strength	1.00 1.00 0.50 0.50	Poorly suited Slope Landslides Rock fragments	1.00 1.00 1.00	Moderate Low strength	0.50
Corryton-----	30	Severe Landslides Slope Low strength	1.00 1.00 0.50	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50	Severe Low strength	1.00
CeB3: Collegedale----	88	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
CeC3: Collegedale----	83	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CeD3: Collegedale-----	88	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
CgB: Collegedale-----	58	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Loyston-----	25	Severe Restrictive layer Low strength	1.00 0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Rock outcrop----	17	Not rated		Not rated		Not rated	
CkC: Collegedale-----	63	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
Talbott-----	23	Moderate Low strength Stoniness Restrictive layer	0.50 0.50 0.50	Poorly suited Rock fragments Low strength Slope	1.00 0.50 0.50	Severe Low strength	1.00
CkD: Collegedale-----	55	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Talbott-----	38	Moderate Restrictive layer Slope Stoniness	0.50 0.50 0.50	Poorly suited Slope Rock fragments Low strength	1.00 1.00 0.50	Severe Low strength	1.00
CoB: Corryton-----	85	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
CoC: Corryton-----	85	Moderate Low strength Landslides	0.50 0.10	Moderately suited Low strength Slope Landslides	0.50 0.50 0.10	Severe Low strength	1.00
CoD: Corryton-----	85	Moderate Landslides Slope	0.50 0.50	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50	Severe Low strength	1.00
CtB: Corryton-----	60	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Townley-----	35	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CtC:							
Corryton-----	73	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Landslides	0.10	Slope	0.50		
				Landslides	0.10		
Townley-----	22	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Landslides	0.10	Slope	0.50		
				Landslides	0.10		
CzC:							
Corryton-----	50	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Landslides	0.10	Slope	0.50		
				Landslides	0.10		
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
CzD:							
Corryton-----	50	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
				Landslides	0.50		
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DeB:							
Dewey-----	90	Slight		Moderately suited		Severe	
				Low strength	0.50	Low strength	1.00
DeC2:							
Dewey-----	68	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Slope	0.50		
DeD2:							
Dewey-----	88	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
DeE2:							
Dewey-----	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
DgE3:							
Dewey-----	45	Severe		Poorly suited		Severe	
		Landslides	1.00	Slope	1.00	Low strength	1.00
		Slope	1.00	Landslides	1.00		
		Low strength	0.50	Low strength	0.50		
Coghill-----	25	Severe		Poorly suited		Moderate	
		Landslides	1.00	Slope	1.00	Low strength	0.50
		Slope	1.00	Landslides	1.00		
		Low strength	0.50				

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DwD, DwE: Dewey-----	47	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Etowah-----	42	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
DyC: Dewey-----	50	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DyD: Dewey-----	50	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated		Not rated	
EmB: Emory-----	83	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
EmC: Emory-----	83	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
EtB: Etowah-----	93	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
EvB: Etowah-----	55	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Minvale-----	30	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
FuC2: Fullerton-----	90	Slight		Moderately suited Slope	0.50	Moderate Low strength	0.50
FuD2: Fullerton-----	90	Moderate Slope	0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FuE2: Fullerton-----	90	Severe Slope Low strength	1.00 0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50
FvC: Fullerton-----	53	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
Minvale-----	38	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
FzC: Fullerton-----	50	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD: Fullerton-----	50	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
He: Heiskell-----	75	Moderate Flooding Low strength	0.50 0.50	Moderately suited Flooding Low strength	0.50 0.50	Severe Low strength	1.00
HeB: Heiskell-----	70	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
LoC: Loyston-----	70	Severe Restrictive layer Low strength	1.00 0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
Rock outcrop----	30	Not rated		Not rated		Not rated	
LoE: Loyston-----	70	Severe Landslides Slope Stoniness Low strength	1.00 1.00 0.50 0.50	Poorly suited Slope Landslides Rock fragments Low strength	1.00 1.00 1.00 0.50	Severe Low strength	1.00

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LrF:							
Loyston-----	35	Severe Slope Landslides Low strength Stoniness	 1.00 1.00 0.50 0.50	Poorly suited Slope Landslides Low strength Rock fragments	 1.00 1.00 0.50 0.50	Severe Low strength	 1.00
Nonaburg-----	28	Severe Slope Landslides Low strength	 1.00 1.00 0.50	Poorly suited Slope Landslides Low strength	 1.00 1.00 0.50	Severe Low strength	 1.00
Rock outcrop----	15	Not rated		Not rated		Not rated	
LtC:							
Loyston-----	33	Severe Restrictive layer Low strength Landslides	 1.00 0.50 0.10	Moderately suited Slope Low strength Landslides	 0.50 0.50 0.10	Severe Low strength	 1.00
Talbott-----	23	Moderate Restrictive layer Low strength Landslides	 0.50 0.50 0.10	Moderately suited Slope Low strength Landslides	 0.50 0.50 0.10	Severe Low strength	 1.00
Rock outcrop----	22	Not rated		Not rated		Not rated	
LtD:							
Loyston-----	33	Severe Landslides Slope Low strength	 1.00 1.00 0.50	Poorly suited Slope Landslides Low strength	 1.00 1.00 0.50	Severe Low strength	 1.00
Talbott-----	23	Severe Landslides Slope Low strength	 1.00 1.00 0.50	Poorly suited Slope Landslides Low strength	 1.00 1.00 0.50	Severe Low strength	 1.00
Rock outcrop----	22	Not rated		Not rated		Not rated	
MfD:							
Minvale-----	70	Moderate Slope Stoniness	 0.50 0.50	Poorly suited Slope Low strength Rock fragments	 1.00 0.50 0.50	Severe Low strength	 1.00
Fullerton-----	23	Moderate Slope	 0.50	Poorly suited Slope Low strength	 1.00 0.50	Severe Low strength	 1.00
MfE:							
Minvale-----	48	Severe Landslides Slope Stoniness Low strength	 1.00 1.00 0.50 0.50	Poorly suited Slope Landslides Low strength Rock fragments	 1.00 1.00 0.50 0.50	Severe Low strength	 1.00

Soil Survey of Knox County, Tennessee

Table 8.--Forest Management, Part I--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MfE:							
Bodine-----	25	Severe Landslides Slope	1.00 1.00	Poorly suited Slope Landslides	1.00 1.00	Moderate Low strength	0.50
Fullerton-----	20	Severe Landslides Slope Low strength	1.00 1.00 0.50	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50	Severe Low strength	1.00
NnD3:							
Nonaburg-----	60	Severe Landslides Slope	1.00 0.50	Poorly suited Landslides Slope Low strength	1.00 1.00 0.50	Severe Low strength	1.00
NnE3:							
Nonaburg-----	60	Severe Landslides Slope Low strength	1.00 1.00 0.50	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Ph:							
Pettyjon-----	60	Moderate Flooding Low strength	0.50 0.50	Moderately suited Flooding Low strength	0.50 0.50	Severe Low strength	1.00
Hamblen-----	32	Moderate Flooding Low strength	0.50 0.50	Moderately suited Flooding Low strength	0.50 0.50	Severe Low strength	1.00
Pz:							
Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	
Ro:							
Rockdell-----	80	Slight		Well suited		Slight Strength	0.10
SaC:							
Salacoa-----	78	Slight		Moderately suited Slope	0.50	Moderate Low strength	0.50
SaD:							
Salacoa-----	90	Moderate Landslides Slope	0.50 0.50	Poorly suited Slope Landslides	1.00 0.50	Moderate Low strength	0.50
SbC:							
Salacoa-----	75	Slight		Moderately suited Slope	0.50	Moderate Low strength	0.50
Apison-----	25	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SeC:							
Salacoa-----	50	Slight		Moderately suited Slope	0.50	Moderate Low strength	0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
SeD:							
Salacoa-----	50	Moderate Landslides Slope	0.50 0.50	Poorly suited Slope Landslides	1.00 0.50	Moderate Low strength	0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
ShB:							
Shady-----	88	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
ShC:							
Shady-----	93	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
So:							
Shady-----	75	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Whitwell-----	25	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
St:							
Steadman-----	68	Moderate Flooding Low strength	0.50 0.50	Moderately suited Flooding Low strength	0.50 0.50	Severe Low strength	1.00
SwB:							
Swafford-----	80	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
SwC:							
Swafford-----	80	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
TbC2:							
Talbott-----	40	Moderate Restrictive layer Low strength	0.50 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Rock outcrop----	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Moderate Low strength	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Tc: Toccoa-----	90	Slight		Moderately suited Low strength	0.50	Severe Low strength	1.00
ToC: Townley-----	100	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
TsD: Townley-----	50	Moderate Landslides Slope Stoniness	0.50 0.50 0.50	Poorly suited Rock fragments Slope Low strength Landslides	1.00 1.00 0.50 0.50	Severe Low strength	1.00
Loyston-----	25	Severe Restrictive layer Landslides Slope	1.00 0.50 0.50	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50	Severe Low strength	1.00
TvD: Townley-----	55	Moderate Landslides Slope	0.50 0.50	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50	Severe Low strength	1.00
Montevallo-----	35	Moderate Landslides Slope	0.50 0.50	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50	Severe Low strength	1.00
TvE: Townley-----	55	Severe Landslides Slope	1.00 0.50	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Montevallo-----	35	Severe Landslides Slope	1.00 0.50	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50	Severe Low strength	1.00
TvF: Townley-----	55	Severe Slope Landslides Low strength	1.00 1.00 0.50	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Montevallo-----	35	Severe Slope Landslides	1.00 1.00	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Ur: Urban land-----	90	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Severe Slope Landslides	1.00 0.50	Poorly suited Slope Landslides	1.00 0.50	Slight Strength	0.10
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
WeC: Waynesboro-----	93	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
WeD2: Waynesboro-----	85	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
WsC: Waynesboro-----	80	Moderate Low strength	0.50	Moderately suited Slope	0.50	Moderate Low strength	0.50
WwB: Whitwell-----	78	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC: Apison-----	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope Landslides	0.50 0.50 0.10
Montevallo-----	25	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Landslides	0.50 0.10
AmD: Apison-----	72	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Landslides Slope Low strength	1.00 1.00 0.50
Montevallo-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Landslides Slope	1.00 1.00
AmE: Apison-----	55	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Montevallo-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Rock fragments	1.00 1.00 1.00
AmF: Apison-----	58	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Montevallo-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Rock fragments	1.00 1.00 1.00
Bd: Bloomingdale, drained-----	55	Slight		Slight		Poorly suited Flooding Wetness Low strength	1.00 0.50 0.50
Bloomingdale, undrained-----	30	Slight		Slight		Poorly suited Ponding Wetness Low strength	1.00 1.00 0.50

Soil Survey of Knox County, Tennessee

Table 8.--Forest Management, Part II--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bh: Bloomingdale----	60	Slight		Slight		Poorly suited Flooding Wetness Low strength	1.00 1.00 0.50
Hamblen-----	30	Slight		Slight		Moderately suited Flooding Low strength	0.50 0.50
CcC: Coghill-----	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Landslides	0.50 0.10
Corryton-----	35	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope Landslides	0.50 0.50 0.10
CcD: Coghill-----	75	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides	1.00 0.50
Corryton-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50
CcE: Coghill-----	45	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Rock fragments	1.00 1.00 1.00
Corryton-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
CeB3: Collegedale----	88	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
CeC3: Collegedale----	83	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
CeD3: Collegedale----	88	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Knox County, Tennessee

Table 8.--Forest Management, Part II--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CgB: Collegedale-----	58	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Loyston-----	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Rock outcrop----	17	Not rated		Not rated		Not rated	
CkC: Collegedale-----	63	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
Talbott-----	23	Slight		Severe Slope/erodibility	0.95	Poorly suited Rock fragments Low strength Slope	1.00 0.50 0.50
CkD: Collegedale-----	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Talbott-----	38	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 1.00 0.50
CoB: Corryton-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
CoC: Corryton-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope Landslides	0.50 0.50 0.10
CoD: Corryton-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50
CtB: Corryton-----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Townley-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
CtC: Corryton-----	73	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope Landslides	0.50 0.50 0.10

Soil Survey of Knox County, Tennessee

Table 8.--Forest Management, Part II--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CtC: Townley-----	22	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope Landslides	0.50 0.50 0.10
CzC: Corryton-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope Landslides	0.50 0.50 0.10
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
CzD: Corryton-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DeB: Dewey-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
DeC2: Dewey-----	68	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
DeD2: Dewey-----	88	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
DeE2: Dewey-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
DgE3: Dewey-----	45	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Coghill-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides	1.00 1.00
DwD, DwE: Dewey-----	47	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Knox County, Tennessee

Table 8.--Forest Management, Part II--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DwD, DwE: Etowah-----	42	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
DyC: Dewey-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DyD: Dewey-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated		Not rated	
EmB: Emory-----	83	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
EmC: Emory-----	83	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
EtB: Etowah-----	93	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
EvB: Etowah-----	55	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Minvale-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
FuC2: Fullerton-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
FuD2: Fullerton-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
FuE2: Fullerton-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Soil Survey of Knox County, Tennessee

Table 8.--Forest Management, Part II--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FvC: Fullerton-----	53	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Minvale-----	38	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
FzC: Fullerton-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD: Fullerton-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
He: Heiskell-----	75	Slight		Slight		Moderately suited Flooding Low strength	0.50 0.50
HeB: Heiskell-----	70	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
LoC: Loyston-----	70	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
Rock outcrop----	30	Not rated		Not rated		Not rated	
LoE: Loyston-----	70	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Rock fragments Low strength	1.00 1.00 1.00 0.50
LrF: Loyston-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength Rock fragments	1.00 1.00 0.50 0.50

Soil Survey of Knox County, Tennessee

Table 8.--Forest Management, Part II--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LrF: Nonaburg-----	28	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Rock outcrop----	15	Not rated		Not rated		Not rated	
LtC: Loyston-----	33	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength Landslides	0.50 0.50 0.10
Talbott-----	23	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength Landslides	0.50 0.50 0.10
Rock outcrop----	22	Not rated		Not rated		Not rated	
LtD: Loyston-----	33	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Talbott-----	23	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Rock outcrop----	22	Not rated		Not rated		Not rated	
MfD: Minvale-----	70	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Rock fragments	1.00 0.50 0.50
Fullerton-----	23	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
MfE: Minvale-----	48	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength Rock fragments	1.00 1.00 0.50 0.50
Bodine-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides	1.00 1.00
Fullerton-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NnD3: Nonaburg-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Landslides Slope Low strength	1.00 1.00 0.50
NnE3: Nonaburg-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Ph: Pettyjon-----	60	Slight		Slight		Moderately suited Flooding Low strength	0.50 0.50
Hamblen-----	32	Slight		Slight		Moderately suited Flooding Low strength	0.50 0.50
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	
Ro: Rockdell-----	80	Slight		Slight		Well suited	
SaC: Salacoa-----	78	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
SaD: Salacoa-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides	1.00 0.50
SbC: Salacoa-----	75	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
Apison-----	25	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
SeC: Salacoa-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
SeD: Salacoa-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides	1.00 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 8.--Forest Management, Part II--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ShB: Shady-----	88	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
ShC: Shady-----	93	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
So: Shady-----	75	Slight		Slight		Moderately suited Low strength	0.50
Whitwell-----	25	Slight		Slight		Moderately suited Low strength	0.50
St: Steadman-----	68	Slight		Slight		Moderately suited Flooding Low strength	0.50 0.50
SwB: Swafford-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
SwC: Swafford-----	80	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
TbC2: Talbott-----	40	Slight		Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop----	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Tc: Toccoa-----	90	Slight		Slight		Moderately suited Low strength	0.50
ToC: Townley-----	100	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
TsD: Townley-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Low strength Landslides	1.00 1.00 0.50 0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TsD: Loyston-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50
TvD: Townley-----	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50
Montevallo-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Landslides	1.00 0.50 0.50
TvE: Townley-----	55	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Montevallo-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
TvF: Townley-----	55	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Montevallo-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides Low strength	1.00 1.00 0.50
Ur: Urban land-----	90	Not rated		Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides	1.00 0.50
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50

Soil Survey of Knox County, Tennessee

Table 8.--Forest Management, Part II--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WeC: Waynesboro-----	93	Slight		Severe Slope/erodibility	0.95	Moderately suited Low strength Slope	0.50 0.50
WeD2: Waynesboro-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
WsC: Waynesboro-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
WwB: Whitwell-----	78	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC: Apison-----	50	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderately suited Low strength	0.50
Montevallo-----	25	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Well suited	
AmD: Apison-----	72	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Low strength	0.50
Montevallo-----	20	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Well suited	
AmE: Apison-----	55	Well suited		Unsuited Slope Rock fragments	1.00 0.50	Moderately suited Low strength Slope	0.50 0.50
Montevallo-----	35	Moderately suited Rock fragments	0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Rock fragments Slope	1.00 0.50
AmF: Apison-----	58	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
Montevallo-----	25	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Rock fragments Slope	1.00 1.00
Bd: Bloomingdale, drained-----	55	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
Bloomingdale, undrained-----	30	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
Bh: Bloomingdale----	60	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
Hamblen-----	30	Well suited		Well suited		Moderately suited Low strength	0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CcC: Coghill-----	50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Well suited	
Corryton-----	35	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
CcD: Coghill-----	75	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Well suited	
Corryton-----	20	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
CcE: Coghill-----	45	Moderately suited Stickiness; high plasticity index Slope Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.75 0.50	Poorly suited Rock fragments Slope	1.00 1.00
Corryton-----	30	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
CeB3: Collegedale-----	88	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
CeC3: Collegedale-----	83	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Moderately suited Low strength	0.50
CeD3: Collegedale-----	88	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength	0.50
CgB: Collegedale-----	58	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
Loyston-----	25	Unsuited Restrictive layer Stickiness; high plasticity index	1.00 0.50	Moderately suited Restrictive layer Rock fragments Stickiness; high plasticity index	0.50 0.50 0.50	Moderately suited Low strength	0.50
Rock outcrop----	17	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CkC: Collegedale-----	63	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Moderately suited Low strength	0.50
Talbott-----	23	Poorly suited Stickiness; high plasticity index Rock fragments	0.75 0.50	Poorly suited Stickiness; high plasticity index Rock fragments Slope	0.75 0.75 0.50	Poorly suited Rock fragments Low strength	1.00 0.50
CkD: Collegedale-----	55	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength	0.50
Talbott-----	38	Poorly suited Stickiness; high plasticity index Rock fragments	0.75 0.50	Poorly suited Slope Stickiness; high plasticity index Rock fragments	0.75 0.75 0.75	Poorly suited Rock fragments Low strength	1.00 0.50
CoB: Corryton-----	85	Well suited		Well suited		Moderately suited Low strength	0.50
CoC: Corryton-----	85	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
CoD: Corryton-----	85	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
CtB: Corryton-----	60	Well suited		Well suited		Moderately suited Low strength	0.50
Townley-----	35	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
CtC: Corryton-----	73	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Townley-----	22	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Moderately suited Low strength	0.50
CzC: Corryton-----	50	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CzD: Corryton-----	50	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DeB: Dewey-----	90	Well suited		Well suited		Moderately suited Low strength	0.50
DeC2: Dewey-----	68	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
DeD2: Dewey-----	88	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
DeE2: Dewey-----	85	Well suited		Unsuited Slope	1.00	Moderately suited Slope Low strength	0.50 0.50
DgE3: Dewey-----	45	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
Coghill-----	25	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope	1.00
DwD: Dewey-----	47	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
Etowah-----	42	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength	0.50
DwE: Dewey-----	47	Well suited		Unsuited Slope	1.00	Moderately suited Low strength Slope	0.50 0.50
Etowah-----	42	Moderately suited Stickiness; high plasticity index	0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Moderately suited Low strength Slope	0.50 0.50
DyC: Dewey-----	50	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DyD: Dewey-----	50	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated		Not rated	
EmB: Emory-----	83	Well suited		Well suited		Moderately suited Low strength	0.50
EmC: Emory-----	83	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
EtB: Etowah-----	93	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
EvB: Etowah-----	55	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
Minvale-----	30	Well suited		Moderately suited Rock fragments	0.50	Moderately suited Low strength	0.50
FuC2: Fullerton-----	90	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
FuD2: Fullerton-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Well suited	
FuE2: Fullerton-----	90	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
FvC: Fullerton-----	53	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderately suited Low strength	0.50
Minvale-----	38	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderately suited Low strength	0.50
FzC: Fullerton-----	50	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderately suited Low strength	0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FzC:							
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD:							
Fullerton-----	50	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Low strength	0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
He:							
Heiskell-----	75	Well suited		Well suited		Moderately suited Low strength	0.50
HeB:							
Heiskell-----	70	Well suited		Well suited		Moderately suited Low strength	0.50
LoC:							
Loyston-----	70	Unsuited Restrictive layer Stickiness; high plasticity index	1.00 0.50	Moderately suited Restrictive layer Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50	Moderately suited Low strength	0.50
Rock outcrop----	30	Not rated		Not rated		Not rated	
LoE:							
Loyston-----	70	Unsuited Restrictive layer Slope Stickiness; high plasticity index Rock fragments	1.00 0.50 0.50 0.50	Unsuited Slope Rock fragments Restrictive layer Stickiness; high plasticity index	1.00 0.75 0.50 0.50	Poorly suited Rock fragments Slope Low strength	1.00 1.00 0.50
LrF:							
Loyston-----	35	Unsuited Restrictive layer Slope Stickiness; high plasticity index Rock fragments	1.00 0.50 0.50 0.50	Unsuited Slope Rock fragments Restrictive layer Stickiness; high plasticity index	1.00 0.75 0.50 0.50	Poorly suited Slope Low strength Rock fragments	1.00 0.50 0.50
Nonaburg-----	28	Unsuited Restrictive layer Stickiness; high plasticity index Slope	1.00 0.75 0.50	Unsuited Slope Stickiness; high plasticity index Restrictive layer Rock fragments	1.00 1.00 0.75 0.50 0.50	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop----	15	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LtC: Loyston-----	33	Unsuited Restrictive layer Stickiness; high plasticity index	1.00 0.50	Moderately suited Restrictive layer Rock fragments Slope Stickiness; high plasticity index	0.50 0.50 0.50 0.50	Moderately suited Low strength	0.50
Talbott-----	23	Poorly suited Stickiness; high plasticity index	0.75	Poorly suited Stickiness; high plasticity index Slope	0.75 0.50	Moderately suited Low strength	0.50
Rock outcrop----	22	Not rated		Not rated		Not rated	
LtD: Loyston-----	33	Unsuited Restrictive layer Stickiness; high plasticity index	1.00 0.50	Unsuited Slope Restrictive layer Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50 0.50	Moderately suited Slope Low strength	0.50 0.50
Talbott-----	23	Poorly suited Stickiness; high plasticity index	0.75	Unsuited Slope Stickiness; high plasticity index	1.00 0.75	Moderately suited Slope Low strength	0.50 0.50
Rock outcrop----	22	Not rated		Not rated		Not rated	
MfD: Minvale-----	70	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Low strength Rock fragments	0.50 0.50
Fullerton-----	23	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Low strength	0.50
MfE: Minvale-----	48	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Low strength Rock fragments	1.00 0.50 0.50
Bodine-----	25	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Fullerton-----	20	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
NnD3: Nonaburg-----	60	Unsuited Restrictive layer Stickiness; high plasticity index	1.00 0.75	Poorly suited Slope Stickiness; high plasticity index Restrictive layer Rock fragments	0.75 0.75 0.50 0.50	Moderately suited Low strength	0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NnE3: Nonaburg-----	60	Unsuited Restrictive layer Stickiness; high plasticity index Slope	1.00 0.75 0.50	Unsuited Slope Stickiness; high plasticity index Restrictive layer Rock fragments	1.00 0.75 0.50 0.50	Poorly suited Slope Low strength	1.00 0.50
Ph: Pettyjon-----	60	Well suited		Well suited		Moderately suited Low strength	0.50
Hamblen-----	32	Well suited		Well suited		Moderately suited Low strength	0.50
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	
Ro: Rockdell-----	80	Well suited		Moderately suited Rock fragments	0.50	Well suited	
SaC: Salacoa-----	78	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
SaD: Salacoa-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Well suited	
SbC: Salacoa-----	75	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
Apison-----	25	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderately suited Low strength	0.50
SeC: Salacoa-----	50	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
SeD: Salacoa-----	50	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Well suited	
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ShB: Shady-----	88	Well suited		Well suited		Moderately suited Low strength	0.50
ShC: Shady-----	93	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
So: Shady-----	75	Well suited		Well suited		Moderately suited Low strength	0.50
Whitwell-----	25	Well suited		Well suited		Moderately suited Low strength	0.50
St: Steadman-----	68	Well suited		Well suited		Moderately suited Low strength	0.50
SwB: Swafford-----	80	Well suited		Well suited		Moderately suited Low strength	0.50
SwC: Swafford-----	80	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
TbC2: Talbott-----	40	Poorly suited Stickiness; high plasticity index	0.75	Poorly suited Stickiness; high plasticity index Slope	0.75 0.50	Moderately suited Low strength	0.50
Rock outcrop----	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Poorly suited Stickiness; high plasticity index	0.75	Poorly suited Stickiness; high plasticity index Slope	0.75 0.50	Moderately suited Low strength	0.50
Tc: Toccoa-----	90	Well suited		Well suited		Moderately suited Low strength	0.50
ToC: Townley-----	100	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Moderately suited Low strength	0.50
TsD: Townley-----	50	Moderately suited Stickiness; high plasticity index Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Stickiness; high plasticity index	0.75 0.75 0.50	Poorly suited Rock fragments Low strength	1.00 0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TsD: Loyston-----	25	Unsuited Restrictive layer Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Restrictive layer Rock fragments Stickiness; high plasticity index	0.75 0.50 0.50 0.50	Moderately suited Low strength	0.50
TvD: Townley-----	55	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength	0.50
Montevallo-----	35	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Low strength	0.50
TvE: Townley-----	55	Moderately suited Stickiness; high plasticity index	0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Moderately suited Low strength Slope	0.50 0.50
Montevallo-----	35	Well suited		Unsuited Slope Rock fragments	1.00 0.50	Moderately suited Low strength Slope	0.50 0.50
TvF: Townley-----	55	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
Montevallo-----	35	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
Ur: Urban land-----	90	Not rated		Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WeC: Waynesboro-----	93	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Moderately suited Low strength	0.50
WeD2: Waynesboro-----	85	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
WsC: Waynesboro-----	80	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
WwB: Whitwell-----	78	Well suited		Well suited		Moderately suited Low strength	0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part IV

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AmC: Apison-----	50	Well suited		Unsuited Restrictive layer	1.00
Montevallo-----	25	Well suited		Unsuited Restrictive layer	1.00
AmD: Apison-----	72	Poorly suited Slope	0.50	Unsuited Restrictive layer Slope	1.00 0.50
Montevallo-----	20	Poorly suited Slope	0.50	Unsuited Restrictive layer Slope	1.00 0.50
AmE: Apison-----	55	Poorly suited Slope	0.50	Unsuited Restrictive layer Slope	1.00 0.50
Montevallo-----	35	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Restrictive layer Slope Rock fragments	1.00 0.50 0.50
AmF: Apison-----	58	Unsuited Slope	1.00	Unsuited Restrictive layer Slope	1.00 1.00
Montevallo-----	25	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 0.50
Bd: Bloomingdale, drained-----	55	Well suited		Well suited	
Bloomingdale, undrained-----	30	Well suited		Well suited	
Bh: Bloomingdale-----	60	Well suited		Well suited	
Hamblen-----	30	Well suited		Well suited	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CcC: Coghill-----	50	Poorly suited Stickiness; high plasticity index	0.50	Well suited	
Corryton-----	35	Well suited		Well suited	
CcD: Coghill-----	75	Poorly suited Slope Stickiness; high plasticity index	0.50 0.50	Poorly suited Slope	0.50
Corryton-----	20	Poorly suited Slope	0.50	Poorly suited Slope	0.50
CcE: Coghill-----	45	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Corryton-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
CeB3: Collegedale-----	88	Poorly suited Stickiness; high plasticity index	0.50	Well suited	
CeC3: Collegedale-----	83	Poorly suited Stickiness; high plasticity index	0.50	Well suited	
CeD3: Collegedale-----	88	Poorly suited Slope Stickiness; high plasticity index	0.50 0.50	Poorly suited Slope	0.50
CgB: Collegedale-----	58	Poorly suited Stickiness; high plasticity index	0.50	Well suited	
Loyston-----	25	Poorly suited Restrictive layer	0.50	Unsuited Restrictive layer	1.00
Rock outcrop-----	17	Not rated		Not rated	
ChC: Collegedale-----	63	Poorly suited Stickiness; high plasticity index	0.50	Well suited	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CkC: Talbot-----	23	Unsuited Rock fragments Stickiness; high plasticity index	1.00 0.50	Poorly suited Rock fragments Restrictive layer	0.50 0.50
CkD: Collegedale-----	55	Poorly suited Slope Stickiness; high plasticity index	0.50 0.50	Poorly suited Slope	0.50
Talbot-----	38	Unsuited Rock fragments Slope Stickiness; high plasticity index	1.00 0.50 0.50	Poorly suited Slope Rock fragments Restrictive layer	0.50 0.50 0.50
CoB, CoC: Corryton-----	85	Well suited		Well suited	
CoD: Corryton-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
CtB: Corryton-----	60	Well suited		Well suited	
Townley-----	35	Well suited		Unsuited Restrictive layer	1.00
CtC: Corryton-----	73	Well suited		Well suited	
Townley-----	22	Well suited		Unsuited Restrictive layer	1.00
CzC: Corryton-----	50	Well suited		Well suited	
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
CzD: Corryton-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
DeB: Dewey-----	90	Well suited		Well suited	
DeC2: Dewey-----	68	Well suited		Well suited	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DeD2: Dewey-----	88	Poorly suited Slope	0.50	Poorly suited Slope	0.50
DeE2: Dewey-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
DgE3: Dewey-----	45	Unsuited Slope	1.00	Unsuited Slope	1.00
Coghill-----	25	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Unsuited Slope	1.00
DwD, DwE: Dewey-----	47	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Etowah-----	42	Poorly suited Slope	0.50	Poorly suited Slope	0.50
DyC: Dewey-----	50	Well suited		Well suited	
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
DyD: Dewey-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated	
EmB, EmC: Emory-----	83	Well suited		Well suited	
EtB: Etowah-----	93	Well suited		Well suited	
EvB: Etowah-----	55	Well suited		Well suited	
Minvale-----	30	Well suited		Well suited	
FuC2: Fullerton-----	90	Well suited		Well suited	
FuD2: Fullerton-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FuE2: Fullerton-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
FvC: Fullerton-----	53	Well suited		Well suited	
Minvale-----	38	Well suited		Well suited	
FzC: Fullerton-----	50	Well suited		Well suited	
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
FzD: Fullerton-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
He: Heiskell-----	75	Well suited		Well suited	
HeB: Heiskell-----	70	Well suited		Well suited	
LoC: Loyston-----	70	Poorly suited Restrictive layer	0.50	Unsuited Restrictive layer	1.00
Rock outcrop-----	30	Not rated		Not rated	
LoE: Loyston-----	70	Unsuited Slope Rock fragments Restrictive layer	1.00 1.00 0.50	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 0.50
LrF: Loyston-----	35	Unsuited Slope Restrictive layer Rock fragments	1.00 0.50 0.50	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 0.50
Nonaburg-----	28	Unsuited Slope Restrictive layer Stickiness; high plasticity index	1.00 0.50 0.50	Unsuited Restrictive layer Slope	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
LtC: Loyston-----	33	Poorly suited Restrictive layer	0.50	Unsuited Restrictive layer	1.00

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LtC:					
Talbott-----	23	Poorly suited Stickiness; high plasticity index	0.50	Poorly suited Restrictive layer	0.50
Rock outcrop-----	22	Not rated		Not rated	
LtD:					
Loyston-----	33	Poorly suited Slope Restrictive layer	0.50 0.50	Unsuited Restrictive layer Slope	1.00 0.50
Talbott-----	23	Poorly suited Slope Stickiness; high plasticity index	0.50 0.50	Poorly suited Slope Restrictive layer	0.50 0.50
Rock outcrop-----	22	Not rated		Not rated	
MfD:					
Minvale-----	70	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Fullerton-----	23	Poorly suited Slope	0.50	Poorly suited Slope	0.50
MfE:					
Minvale-----	48	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Bodine-----	25	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Fullerton-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
NnD3:					
Nonaburg-----	60	Poorly suited Slope Restrictive layer Stickiness; high plasticity index	0.50 0.50 0.50	Unsuited Restrictive layer Slope	1.00 0.50
NnE3:					
Nonaburg-----	60	Unsuited Slope Restrictive layer Stickiness; high plasticity index	1.00 0.50 0.50	Unsuited Restrictive layer Slope	1.00 1.00
Ph:					
Pettyjon-----	60	Well suited		Well suited	
Hamblen-----	32	Well suited		Well suited	
Pz:					
Pits, mines, and dumps-----	92	Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ro: Rockdell-----	80	Well suited		Well suited	
SaC: Salacoa-----	78	Well suited		Well suited	
SaD: Salacoa-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
SbC: Salacoa-----	75	Well suited		Well suited	
Apison-----	25	Well suited		Unsuited Restrictive layer	1.00
SeC: Salacoa-----	50	Well suited		Well suited	
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
SeD: Salacoa-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
ShB: Shady-----	88	Well suited		Well suited	
ShC: Shady-----	93	Well suited		Well suited	
So: Shady-----	75	Well suited		Well suited	
Whitwell-----	25	Well suited		Well suited	
St: Steadman-----	68	Well suited		Well suited	
SwB, SwC: Swafford-----	80	Well suited		Well suited	
TbC2: Talbot-----	40	Poorly suited Stickiness; high plasticity index	0.50	Poorly suited Restrictive layer	0.50
Rock outcrop-----	35	Not rated		Not rated	
Bradyville-----	25	Poorly suited Stickiness; high plasticity index	0.50	Well suited	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Tc: Toccoa-----	90	Well suited		Well suited	
ToC: Townley-----	100	Well suited		Unsuited Restrictive layer	1.00
TsD: Townley-----	50	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Restrictive layer Slope Rock fragments	1.00 0.50 0.50
Loyston-----	25	Poorly suited Restrictive layer Slope	0.50 0.50	Unsuited Restrictive layer Slope	1.00 0.50
TvD, TvE: Townley-----	55	Poorly suited Slope	0.50	Unsuited Restrictive layer Slope	1.00 0.50
Montevallo-----	35	Poorly suited Slope	0.50	Unsuited Restrictive layer Slope	1.00 0.50
TvF: Townley-----	55	Unsuited Slope	1.00	Unsuited Restrictive layer Slope	1.00 1.00
Montevallo-----	35	Unsuited Slope	1.00	Unsuited Restrictive layer Slope	1.00 1.00
Ur: Urban land-----	90	Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated	
W: Water-----	100	Not rated		Not rated	
WaF: Wallen-----	80	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
Rock outcrop-----	15	Not rated		Not rated	
WeB: Waynesboro-----	90	Well suited		Well suited	
WeC: Waynesboro-----	93	Well suited		Well suited	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WeD2: Waynesboro-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
WsC: Waynesboro-----	80	Well suited		Well suited	
WwB: Whitwell-----	78	Well suited		Well suited	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part V

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AmC: Apison-----	50	Low Texture/rock fragments	0.10	Low	
Montevallo-----	25	Low		Moderate Restrictive layer	0.75
AmD: Apison-----	72	Low Texture/rock fragments	0.10	Low	
Montevallo-----	20	Low		Moderate Restrictive layer	0.75
AmE: Apison-----	55	Low		Low	
Montevallo-----	35	High Texture/slope/ surface depth/ rock fragments	1.00	Moderate Restrictive layer	0.75
AmF: Apison-----	58	Low		Low	
Montevallo-----	25	High Texture/slope/ surface depth/ rock fragments	1.00	Moderate Restrictive layer	0.75
Bd: Bloomingdale, drained-----	55	Low		High Wetness	1.00
Bloomingdale, undrained-----	30	Low		High Wetness	1.00
Bh: Bloomingdale-----	60	Low		High Wetness	1.00
Hamblen-----	30	Low Texture/rock fragments	0.10	Low	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CcC:					
Coghill-----	50	Low		Low	
Corryton-----	35	Moderate Texture/rock fragments	0.50	Low	
CcD:					
Coghill-----	75	Low		Low	
Corryton-----	20	Moderate Texture/rock fragments	0.50	Low	
CcE:					
Coghill-----	45	High Texture/slope/ surface depth/ rock fragments	1.00	Low	
Corryton-----	30	Low		Low	
CeB3:					
Collegedale-----	88	Moderate Texture/rock fragments	0.50	Low	
CeC3:					
Collegedale-----	83	Moderate Texture/rock fragments	0.50	Low	
CeD3:					
Collegedale-----	88	Moderate Texture/rock fragments	0.50	Low	
CgB:					
Collegedale-----	58	Moderate Texture/rock fragments	0.50	Low	
Loyston-----	25	Moderate Texture/surface depth/rock fragments	0.50	Moderate Restrictive layer	0.75
Rock outcrop-----	17	Not rated		Not rated	
CkC:					
Collegedale-----	63	Moderate Texture/rock fragments	0.50	Low	
Talbott-----	23	Low		Low	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CkD: Collegedale-----	55	Moderate Texture/rock fragments	0.50	Low	
Talbott-----	38	Low		Low	
CoB, CoC, CoD: Corryton-----	85	Moderate Texture/rock fragments	0.50	Low	
CtB: Corryton-----	60	Moderate Texture/rock fragments	0.50	Low	
Townley-----	35	Low		Low	
CtC: Corryton-----	73	Moderate Texture/rock fragments	0.50	Low	
Townley-----	22	Low		Low	
CzC, CzD: Corryton-----	50	Moderate Texture/rock fragments	0.50	Low	
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
DeB: Dewey-----	90	Low Texture/rock fragments	0.10	Low	
DeC2: Dewey-----	68	Low		Low	
DeD2: Dewey-----	88	Low		Low	
DeE2: Dewey-----	85	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
DgE3: Dewey-----	45	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DgE3: Coghill-----	25	High Texture/slope/ surface depth/ rock fragments	1.00	Low	
DwD, DwE: Dewey-----	47	Low		Low	
Etowah-----	42	Moderate Texture/rock fragments	0.50	Low	
DyC, DyD: Dewey-----	50	Low		Low	
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated	
EmB, EmC: Emory-----	83	Low Texture/rock fragments	0.10	Low	
EtB: Etowah-----	93	Moderate Texture/rock fragments	0.50	Low	
EvB: Etowah-----	55	Moderate Texture/rock fragments	0.50	Low	
Minvale-----	30	Moderate Texture/rock fragments	0.50	Low	
FuC2, FuD2, FuE2: Fullerton-----	90	Moderate Texture/rock fragments	0.50	Low	
FvC: Fullerton-----	53	Moderate Texture/rock fragments	0.50	Low	
Minvale-----	38	Moderate Texture/rock fragments	0.50	Low	
FzC, FzD: Fullerton-----	50	Moderate Texture/rock fragments	0.50	Low	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FzC, FzD: Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
He: Heiskell-----	75	Low Texture/rock fragments	0.10	Low	
HeB: Heiskell-----	70	Low Texture/rock fragments	0.10	Low	
LoC: Loyston-----	70	Moderate Texture/surface depth/rock fragments	0.50	Moderate Restrictive layer	0.75
Rock outcrop-----	30	Not rated		Not rated	
LoE: Loyston-----	70	Low		Moderate Restrictive layer	0.75
LrF: Loyston-----	35	Low		Moderate Restrictive layer	0.75
Nonaburg-----	28	High Texture/slope/ surface depth/ rock fragments	1.00	Moderate Restrictive layer	0.75
Rock outcrop-----	15	Not rated		Not rated	
LtC: Loyston-----	33	Moderate Texture/surface depth/rock fragments	0.50	Moderate Restrictive layer	0.75
Talbott-----	23	Low		Low	
Rock outcrop-----	22	Not rated		Not rated	
LtD: Loyston-----	33	Low		Moderate Restrictive layer	0.75
Talbott-----	23	High Texture/slope/ surface depth/ rock fragments	1.00	Low	
Rock outcrop-----	22	Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
MfD:					
Minvale-----	70	Moderate Texture/rock fragments	0.50	Low	
Fullerton-----	23	Moderate Texture/rock fragments	0.50	Low	
MfE:					
Minvale-----	48	Moderate Texture/rock fragments	0.50	Low	
Bodine-----	25	High Texture/rock fragments	1.00	Low	
Fullerton-----	20	Moderate Texture/rock fragments	0.50	Low	
NnD3:					
Nonaburg-----	60	Low		Moderate Restrictive layer	0.75
NnE3:					
Nonaburg-----	60	High Texture/slope/ surface depth/ rock fragments	1.00	Moderate Restrictive layer	0.75
Ph:					
Pettyjon-----	60	Low Texture/rock fragments	0.10	Low	
Hamblen-----	32	Low Texture/rock fragments	0.10	Low	
Pz:					
Pits, mines, and dumps-----	92	Not rated		Not rated	
Ro:					
Rockdell-----	80	Moderate Texture/rock fragments	0.50	Low	
SaC:					
Salacoa-----	78	Moderate Texture/rock fragments	0.50	Low	
SaD:					
Salacoa-----	90	Moderate Texture/rock fragments	0.50	Low	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SbC: Salacoa-----	75	Moderate Texture/rock fragments	0.50	Low	
Apison-----	25	Low Texture/rock fragments	0.10	Low	
SeC, SeD: Salacoa-----	50	Moderate Texture/rock fragments	0.50	Low	
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
ShB: Shady-----	88	Low Texture/rock fragments	0.10	Low	
ShC: Shady-----	93	Low Texture/rock fragments	0.10	Low	
So: Shady-----	75	Low Texture/rock fragments	0.10	Low	
Whitwell-----	25	Low Texture/rock fragments	0.10	Low	
St: Steadman-----	68	Low Texture/rock fragments	0.10	Low	
SwB, SwC: Swafford-----	80	Low		Low	
TbC2: Talbot-----	40	Low		Low	
Rock outcrop-----	35	Not rated		Not rated	
Bradyville-----	25	Low		Low	
Tc: Toccoa-----	90	Low		Low	
ToC: Townley-----	100	Low		Low	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
TsD:					
Townley-----	50	Low		Low	
Loyston-----	25	Moderate Texture/surface depth/rock fragments	0.50	Moderate Restrictive layer	0.75
TvD, TvE:					
Townley-----	55	Low		Low	
Montevallo-----	35	Low		Moderate Restrictive layer	0.75
TvF:					
Townley-----	55	High Texture/slope/ surface depth/ rock fragments	1.00	Low	
Montevallo-----	35	High Texture/slope/ surface depth/ rock fragments	1.00	Moderate Restrictive layer	0.75
Ur:					
Urban land-----	90	Not rated		Not rated	
Uu:					
Urban land-----	70	Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated	
W:					
Water-----	100	Not rated		Not rated	
WaF:					
Wallen-----	80	High Texture/slope/ surface depth/ rock fragments	1.00	Low	
Rock outcrop-----	15	Not rated		Not rated	
WeB:					
Waynesboro-----	90	Moderate Texture/rock fragments	0.50	Low	
WeC:					
Waynesboro-----	93	Moderate Texture/rock fragments	0.50	Low	
WeD2:					
Waynesboro-----	85	Low		Low	

Soil Survey of Knox County, Tennessee

Table 8.—Forest Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WsC: Waynesboro-----	80	Moderate Texture/rock fragments	0.50	Low	
WwB: Whitwell-----	78	Low Texture/rock fragments	0.10	Low	

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC:							
Apison-----	50	Somewhat limited Slope	0.50	Somewhat limited Slope	0.50	Very limited Slope	1.00
						Depth to bedrock	1.00
						Gravel content	0.96
Montevallo-----	30	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
AmD:							
Apison-----	80	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
						Depth to bedrock	1.00
						Gravel content	1.00
Montevallo-----	20	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
AmE:							
Apison-----	58	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
						Depth to bedrock	1.00
						Gravel content	1.00
Montevallo-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
AmF:							
Apison-----	60	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
						Depth to bedrock	1.00
						Gravel content	1.00
Montevallo-----	20	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
Bd:							
Bloomingtondale, drained-----	55	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
		Flooding	1.00	Slow water movement	0.96	Slow water movement	0.96
		Slow water movement	0.96			Flooding	0.60

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bd: Bloomingdale, undrained-----	30	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.96	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.96	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.96
Bh: Bloomingdale----	60	Very limited Depth to saturated zone Flooding Slow water movement	1.00 1.00 0.96	Very limited Depth to saturated zone Slow water movement	1.00 0.96	Very limited Depth to saturated zone Slow water movement Flooding	1.00 0.96 0.60
Hamblen-----	30	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
CcC: Coghill-----	50	Not rated		Not rated		Not rated	
Corryton-----	35	Somewhat limited Slow water movement Slope	0.21 0.04	Somewhat limited Slow water movement Slope	0.21 0.04	Very limited Slope Slow water movement Gravel content	1.00 0.21 0.04
CcD: Coghill-----	75	Not rated		Not rated		Not rated	
Corryton-----	20	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement Gravel content	1.00 0.21 0.04
CcE: Coghill-----	45	Not rated		Not rated		Not rated	
Corryton-----	30	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement Gravel content	1.00 0.21 0.04
CeB3: Collegedale----	88	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Somewhat limited Slope Slow water movement	0.50 0.21
CeC3: Collegedale----	83	Somewhat limited Slow water movement Slope	0.21 0.01	Somewhat limited Slow water movement Slope	0.21 0.01	Very limited Slope Slow water movement	1.00 0.21

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CeD3: Collegedale-----	88	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement	1.00 0.21
CgB: Collegedale-----	58	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Somewhat limited Slope Slow water movement	0.50 0.21
Loyston-----	25	Very limited Depth to bedrock Too clayey Slow water movement Gravel content	1.00 1.00 0.26 0.01	Very limited Depth to bedrock Too clayey Slow water movement Gravel content	1.00 1.00 0.26 0.01	Very limited Depth to bedrock Gravel content Too clayey Slope Large stones content	1.00 1.00 1.00 0.50 0.46
Rock outcrop----	17	Not rated		Not rated		Not rated	
CkC: Collegedale-----	63	Somewhat limited Slow water movement Slope	0.21 0.04	Somewhat limited Slow water movement Slope	0.21 0.04	Very limited Slope Slow water movement	1.00 0.21
Talbott-----	23	Very limited Large stones content Slow water movement Slope	1.00 0.21 0.04	Very limited Large stones content Slow water movement Slope	1.00 0.21 0.04	Very limited Slope Large stones content Depth to bedrock Slow water movement	1.00 1.00 0.29 0.21
CkD: Collegedale-----	55	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement	1.00 0.21
Talbott-----	38	Very limited Slope Large stones content Slow water movement	1.00 1.00 0.21	Very limited Slope Large stones content Slow water movement	1.00 1.00 0.21	Very limited Slope Large stones content Depth to bedrock Slow water movement	1.00 1.00 0.29 0.21
CoB: Corryton-----	85	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement Slope Gravel content	0.21 0.12 0.04

Soil Survey of Knox County, Tennessee

Table 9.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CoC: Corryton-----	85	Somewhat limited Slow water movement Slope	0.21 0.04	Somewhat limited Slow water movement Slope	0.21 0.04	Very limited Slope Slow water movement Gravel content	1.00 0.21 0.04
CoD: Corryton-----	85	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement Gravel content	1.00 0.21 0.04
CtB: Corryton-----	60	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement Slope Gravel content	0.21 0.12 0.04
Townley-----	35	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement Depth to bedrock Gravel content Slope	0.96 0.65 0.48 0.12
CtC: Corryton-----	73	Somewhat limited Slow water movement Slope	0.21 0.04	Somewhat limited Slow water movement Slope	0.21 0.04	Very limited Slope Slow water movement Gravel content	1.00 0.21 0.04
Townley-----	22	Somewhat limited Slow water movement Slope	0.96 0.04	Somewhat limited Slow water movement Slope	0.96 0.04	Very limited Slope Slow water movement Depth to bedrock Gravel content	1.00 0.96 0.65 0.48
CzC: Corryton-----	50	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Very limited Slope Slow water movement Gravel content	1.00 0.21 0.04
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
CzD: Corryton-----	50	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement Gravel content	1.00 0.21 0.04

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CzD: Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DeB: Dewey-----	90	Not limited		Not limited		Somewhat limited Slope	0.50
DeC2: Dewey-----	68	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
DeD2: Dewey-----	88	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
DeE2: Dewey-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
DgE3: Dewey-----	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Coghill-----	25	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
DwD, DwE: Dewey-----	47	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Etowah-----	42	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content	1.00 0.06
DyC: Dewey-----	50	Not limited		Not limited		Very limited Slope	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DyD: Dewey-----	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated		Not rated	
EmB: Emory-----	83	Not limited		Not limited		Somewhat limited Slope	0.50

Soil Survey of Knox County, Tennessee

Table 9.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
EmC: Emory-----	83	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
EtB: Etowah-----	93	Not limited		Not limited		Somewhat limited Slope Gravel content	0.50 0.06
EvB: Etowah-----	55	Not limited		Not limited		Somewhat limited Slope Gravel content	0.50 0.06
Minvale-----	30	Not limited		Not limited		Somewhat limited Slope Gravel content	0.50 0.06
FuC2: Fullerton-----	90	Somewhat limited Gravel content Slope	0.24 0.04	Somewhat limited Gravel content Slope	0.24 0.04	Very limited Slope Gravel content Large stones content	1.00 1.00 0.08
FuD2, FuE2: Fullerton-----	90	Very limited Slope Gravel content	1.00 0.24	Very limited Slope Gravel content	1.00 0.24	Very limited Slope Gravel content Large stones content	1.00 1.00 0.08
FvC: Fullerton-----	53	Somewhat limited Gravel content Slope	0.26 0.04	Somewhat limited Gravel content Slope	0.26 0.04	Very limited Slope Gravel content Large stones content	1.00 1.00 0.05
Minvale-----	38	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope Gravel content	1.00 0.06
FzC: Fullerton-----	50	Somewhat limited Gravel content	0.26	Somewhat limited Gravel content	0.26	Very limited Gravel content Slope Large stones content	1.00 1.00 0.05
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD: Fullerton-----	50	Very limited Slope Gravel content	1.00 0.26	Very limited Slope Gravel content	1.00 0.26	Very limited Slope Gravel content Large stones content	1.00 1.00 0.05

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FzD: Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
He: Heiskell-----	75	Very limited Flooding Slow water movement	1.00 0.26	Somewhat limited Slow water movement	0.26	Somewhat limited Flooding Slow water movement Gravel content	0.60 0.26 0.04
HeB: Heiskell-----	70	Somewhat limited Slow water movement	0.26	Somewhat limited Slow water movement	0.26	Somewhat limited Slope Slow water movement Gravel content	0.50 0.26 0.04
LoC: Loyston-----	70	Very limited Depth to bedrock Too clayey Slow water movement Slope Gravel content	1.00 1.00 0.26 0.04 0.01	Very limited Depth to bedrock Too clayey Slow water movement Slope Gravel content	1.00 1.00 0.26 0.04 0.01	Very limited Depth to bedrock Slope Gravel content Too clayey Large stones content	1.00 1.00 1.00 1.00 1.00 0.46
Rock outcrop----	30	Not rated		Not rated		Not rated	
LoE: Loyston-----	70	Very limited Slope Depth to bedrock Large stones content Too clayey Slow water movement	1.00 1.00 1.00 1.00 0.26	Very limited Slope Depth to bedrock Large stones content Too clayey Slow water movement	1.00 1.00 1.00 1.00 0.26	Very limited Slope Depth to bedrock Large stones content Gravel content Too clayey	1.00 1.00 1.00 1.00 1.00
LrF: Loyston-----	35	Very limited Slope Depth to bedrock Large stones content Too clayey	1.00 1.00 1.00 1.00	Very limited Slope Depth to bedrock Large stones content Too clayey	1.00 1.00 1.00 1.00	Very limited Slope Depth to bedrock Large stones content Too clayey	1.00 1.00 1.00 1.00
Nonaburg-----	28	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.21	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.21	Very limited Slope Depth to bedrock Large stones content Slow water movement Gravel content	1.00 1.00 0.68 0.21 0.04
Rock outcrop----	15	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LtC:							
Loyston-----	33	Very limited Depth to bedrock Too clayey Slow water movement Gravel content Slope	1.00 1.00 0.26 0.01 0.01	Very limited Depth to bedrock Too clayey Slow water movement Gravel content Slope	1.00 1.00 0.26 0.01 0.01	Very limited Depth to bedrock Gravel content Slope Too clayey Large stones content	1.00 1.00 1.00 1.00 0.46
Talbott-----	23	Somewhat limited Slow water movement Slope	0.21 0.01	Somewhat limited Slow water movement Slope	0.21 0.01	Very limited Slope Depth to bedrock Slow water movement	1.00 0.29 0.21
Rock outcrop----	22	Not rated		Not rated		Not rated	
LtD:							
Loyston-----	33	Very limited Slope Depth to bedrock Too clayey Slow water movement Gravel content	1.00 1.00 1.00 0.26 0.01	Very limited Slope Depth to bedrock Too clayey Slow water movement Gravel content	1.00 1.00 1.00 0.26 0.01	Very limited Slope Depth to bedrock Gravel content Too clayey Large stones content	1.00 1.00 1.00 1.00 0.46
Talbott-----	23	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Slow water movement	1.00 0.21	Very limited Slope Depth to bedrock Slow water movement	1.00 0.29 0.21
Rock outcrop----	22	Not rated		Not rated		Not rated	
MfD:							
Minvale-----	70	Very limited Slope Large stones content	1.00 1.00	Very limited Slope Large stones content	1.00 1.00	Very limited Slope Large stones content Gravel content	1.00 1.00 0.06
Fullerton-----	23	Very limited Slope Gravel content	1.00 0.26	Very limited Slope Gravel content	1.00 0.26	Very limited Slope Gravel content Large stones content	1.00 1.00 0.05
MfE:							
Minvale-----	48	Very limited Slope Large stones content	1.00 1.00	Very limited Slope Large stones content	1.00 1.00	Very limited Slope Large stones content Gravel content	1.00 1.00 0.06
Bodine-----	25	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MfE: Fullerton-----	20	Very limited Slope Gravel content	1.00 0.26	Very limited Slope Gravel content	1.00 0.26	Very limited Slope Gravel content Large stones content	1.00 1.00 0.05
NnD3: Nonaburg-----	60	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.21	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.21	Very limited Slope Depth to bedrock Large stones content Slow water movement Gravel content	1.00 1.00 0.68 0.21 0.04
NnE3: Nonaburg-----	60	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.21	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.21	Very limited Slope Depth to bedrock Large stones content Slow water movement Gravel content	1.00 1.00 0.68 0.21 0.04
Ph: Pettyjon-----	60	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Hamblen-----	32	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	
Ro: Rockdell-----	80	Very limited Flooding Gravel content	1.00 0.71	Somewhat limited Gravel content	0.71	Very limited Gravel content Large stones content	1.00 0.08
SaC: Salacoa-----	78	Not rated		Not rated		Not rated	
SaD: Salacoa-----	90	Not rated		Not rated		Not rated	
SbC: Salacoa-----	75	Somewhat limited Gravel content Slope	0.88 0.04	Somewhat limited Gravel content Slope	0.88 0.04	Very limited Gravel content Slope	1.00 1.00
Apison-----	25	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope Large stones content Depth to bedrock Gravel content	1.00 0.68 0.54 0.04

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SeC: Salacoa-----	50	Somewhat limited Gravel content	0.88	Somewhat limited Gravel content	0.88	Very limited Gravel content Slope	1.00 1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
SeD: Salacoa-----	50	Very limited Slope Gravel content	1.00 0.88	Very limited Slope Gravel content	1.00 0.88	Very limited Gravel content Slope	1.00 1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
ShB: Shady-----	88	Not limited		Not limited		Somewhat limited Slope Gravel content	0.50 0.04
ShC: Shady-----	93	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope Gravel content	1.00 0.04
So: Shady-----	75	Very limited Flooding	1.00	Not limited		Somewhat limited Gravel content	0.04
Whitwell-----	25	Very limited Flooding	1.00	Not limited		Somewhat limited Gravel content	0.04
St: Steadman-----	68	Very limited Flooding Depth to saturated zone	1.00 0.07	Somewhat limited Depth to saturated zone	0.03	Somewhat limited Flooding Depth to saturated zone	0.60 0.07
SwB: Swafford-----	80	Somewhat limited Slow water movement Depth to saturated zone	0.21 0.07	Somewhat limited Slow water movement Depth to saturated zone	0.21 0.03	Somewhat limited Slope Slow water movement Depth to saturated zone	0.50 0.21 0.07
SwC: Swafford-----	80	Somewhat limited Slow water movement Depth to saturated zone Slope	0.21 0.07 0.04	Somewhat limited Slow water movement Slope Depth to saturated zone	0.21 0.04 0.03	Very limited Slope Slow water movement Depth to saturated zone	1.00 0.21 0.07

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TbC2: Talbot-----	40	Somewhat limited Slope Slow water movement	0.84 0.21	Somewhat limited Slope Slow water movement	0.84 0.21	Very limited Slope Depth to bedrock Slow water movement	1.00 0.29 0.21
Rock outcrop----	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Somewhat limited Slope Slow water movement	0.84 0.21	Somewhat limited Slope Slow water movement	0.84 0.21	Very limited Slope Slow water movement Gravel content	1.00 0.21 0.04
Tc: Toccoa-----	90	Very limited Flooding Too sandy	1.00 0.01	Somewhat limited Too sandy	0.01	Somewhat limited Too sandy	0.01
ToC: Townley-----	100	Somewhat limited Slow water movement Slope	0.96 0.04	Somewhat limited Slow water movement Slope	0.96 0.04	Very limited Slope Slow water movement Depth to bedrock Gravel content	1.00 0.96 0.65 0.48
TsD: Townley-----	50	Very limited Slope Large stones content Slow water movement	1.00 1.00 0.96	Very limited Slope Large stones content Slow water movement	1.00 1.00 0.96	Very limited Slope Large stones content Slow water movement Depth to bedrock Gravel content	1.00 1.00 0.96 0.65 0.48
Loyston-----	25	Very limited Depth to bedrock Slope Too clayey Slow water movement Gravel content	1.00 1.00 1.00 0.26 0.01	Very limited Depth to bedrock Slope Too clayey Slow water movement Gravel content	1.00 1.00 1.00 0.26 0.01	Very limited Slope Depth to bedrock Gravel content Too clayey Large stones content	1.00 1.00 1.00 1.00 0.46
TvD: Townley-----	55	Very limited Slope Slow water movement	1.00 0.96	Very limited Slope Slow water movement	1.00 0.96	Very limited Slope Slow water movement Depth to bedrock Gravel content	1.00 0.96 0.65 0.48
Montevallo-----	35	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.41	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.41	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 1.00

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TvE, TvF: Townley-----	55	Very limited Slope Slow water movement	1.00 0.96	Very limited Slope Slow water movement	1.00 0.96	Very limited Slope Slow water movement Depth to bedrock Gravel content	1.00 0.96 0.65 0.48
Montevallo-----	35	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.41	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.41	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 1.00
Ur: Urban land-----	90	Not rated		Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Not rated		Not rated		Not rated	
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Not limited		Not limited		Somewhat limited Slope	0.50
WeC: Waynesboro-----	93	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
WeD2: Waynesboro-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
WsC: Waynesboro-----	80	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope Gravel content Large stones content	1.00 0.44 0.32
WwB: Whitwell-----	78	Very limited Flooding	1.00	Not limited		Somewhat limited Slope Gravel content	0.50 0.04

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Table 9.—Recreational Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC: Apison-----	50	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Depth to bedrock Slope	0.5 0.5
Montevallo-----	30	Not limited		Not limited		Very limited Depth to bedrock Droughty Gravel content Slope	1.00 1.00 1.00 0.96
AmD: Apison-----	80	Very limited Water erosion Slope	1.00 1.00	Very limited Water erosion	1.00	Very limited Slope Depth to bedrock	1.00 1.00
Montevallo-----	20	Somewhat limited Slope	0.50	Not limited		Very limited Depth to bedrock Droughty Slope Gravel content	1.00 1.00 1.00 0.96
AmE: Apison-----	58	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Montevallo-----	35	Very limited Slope	1.00	Somewhat limited Slope	0.50	Very limited Depth to bedrock Slope Droughty Gravel content	1.00 1.00 1.00 0.96
AmF: Apison-----	60	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Montevallo-----	20	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Depth to bedrock Slope Droughty Gravel content	1.00 1.00 1.00 0.96
Bd: Bloomingdale, drained-----	55	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Flooding	1.00 0.60

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Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bd: Bloomingdale, undrained-----	30	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
Bh: Bloomingdale----	60	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Flooding	1.00 0.60
Hamblen-----	30	Not limited		Not limited		Somewhat limited Flooding	0.60
CcC: Coghill-----	50	Not limited		Not limited		Somewhat limited Slope	0.04
Corryton-----	35	Not limited		Not limited		Somewhat limited Slope	0.04
CcD: Coghill-----	75	Somewhat limited Slope	0.32	Not limited		Very limited Slope	1.00
Corryton-----	20	Somewhat limited Slope	0.32	Not limited		Very limited Slope	1.00
CcE: Coghill-----	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Corryton-----	30	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
CeB3: Collegedale----	88	Not limited		Not limited		Not limited	
CeC3: Collegedale----	83	Not limited		Not limited		Somewhat limited Slope	0.01
CeD3: Collegedale----	88	Somewhat limited Slope	0.24	Not limited		Very limited Slope	1.00
CgB: Collegedale----	58	Not limited		Not limited		Not limited	
Loyston-----	25	Very limited Too clayey	1.00	Very limited Too clayey	1.00	Very limited Depth to bedrock Droughty Too clayey Large stones content Gravel content	1.00 1.00 1.00 0.46 0.01
Rock outcrop----	17	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CkC: Collegedale-----	63	Not limited		Not limited		Somewhat limited Slope	0.04
Talbott-----	23	Very limited Large stones content	1.00	Very limited Large stones content	1.00	Somewhat limited Depth to bedrock Slope Droughty	0.29 0.04 0.01
CkD: Collegedale-----	55	Somewhat limited Slope	0.32	Not limited		Very limited Slope	1.00
Talbott-----	38	Very limited Large stones content Slope	1.00 0.32	Very limited Large stones content	1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.29 0.01
CoB: Corryton-----	85	Not limited		Not limited		Not limited	
CoC: Corryton-----	85	Not limited		Not limited		Somewhat limited Slope	0.04
CoD: Corryton-----	85	Somewhat limited Slope	0.32	Not limited		Very limited Slope	1.00
CtB: Corryton-----	60	Not limited		Not limited		Not limited	
Townley-----	35	Not limited		Not limited		Somewhat limited Depth to bedrock	0.65
CtC: Corryton-----	73	Not limited		Not limited		Somewhat limited Slope	0.04
Townley-----	22	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Depth to bedrock Slope	0.65 0.04
CzC: Corryton-----	50	Not limited		Not limited		Not limited	
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
CzD: Corryton-----	50	Somewhat limited Slope	0.32	Not limited		Very limited Slope	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DeB: Dewey-----	90	Not limited		Not limited		Not limited	
DeC2: Dewey-----	68	Not limited		Not limited		Somewhat limited Slope	0.04
DeD2: Dewey-----	88	Somewhat limited Slope	0.32	Not limited		Very limited Slope	1.00
DeE2: Dewey-----	85	Very limited Slope	1.00	Somewhat limited Slope	0.56	Very limited Slope	1.00
DgE3: Dewey-----	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Coghill-----	25	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
DwD: Dewey-----	47	Somewhat limited Slope	0.02	Not limited		Very limited Slope	1.00
Etowah-----	42	Somewhat limited Slope	0.02	Not limited		Very limited Slope	1.00
DwE: Dewey-----	47	Very limited Slope	1.00	Somewhat limited Slope	0.08	Very limited Slope	1.00
Etowah-----	42	Very limited Slope	1.00	Somewhat limited Slope	0.08	Very limited Slope	1.00
DyC: Dewey-----	50	Not limited		Not limited		Not limited	
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DyD: Dewey-----	50	Somewhat limited Slope	0.32	Not limited		Very limited Slope	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated		Not rated	
EmB: Emory-----	83	Not limited		Not limited		Not limited	
EmC: Emory-----	83	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.04

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
EtB: Etowah-----	93	Not limited		Not limited		Not limited	
EvB: Etowah-----	55	Not limited		Not limited		Not limited	
Minvale-----	30	Not limited		Not limited		Not limited	
FuC2: Fullerton-----	90	Not limited		Not limited		Somewhat limited Gravel content Large stones content Slope	0.24 0.08 0.04
FuD2: Fullerton-----	90	Somewhat limited Slope	0.32	Not limited		Very limited Slope Gravel content Large stones content	1.00 0.24 0.08
FuE2: Fullerton-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content Large stones content	1.00 0.24 0.08
FvC: Fullerton-----	53	Not limited		Not limited		Somewhat limited Gravel content Large stones content Slope	0.26 0.05 0.04
Minvale-----	38	Not limited		Not limited		Somewhat limited Slope	0.04
FzC: Fullerton-----	50	Not limited		Not limited		Somewhat limited Gravel content Large stones content	0.26 0.05
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD: Fullerton-----	50	Somewhat limited Slope	0.32	Not limited		Very limited Slope Gravel content Large stones content	1.00 0.26 0.05
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
He: Heiskell-----	75	Not limited		Not limited		Somewhat limited Flooding	0.60
HeB: Heiskell-----	70	Not limited		Not limited		Not limited	
LoC: Loyston-----	70	Very limited Too clayey Water erosion	1.00 1.00	Very limited Too clayey Water erosion	1.00 1.00	Very limited Depth to bedrock Droughty Too clayey Large stones content Slope	1.00 1.00 1.00 0.46 0.04
Rock outcrop----	30	Not rated		Not rated		Not rated	
LoE: Loyston-----	70	Very limited Slope Water erosion Large stones content Too clayey	1.00 1.00 1.00 1.00	Very limited Water erosion Large stones content Slope Too clayey	1.00 1.00 1.00 1.00	Very limited Depth to bedrock Slope Droughty Too clayey Large stones content	1.00 1.00 1.00 1.00 0.46
LrF: Loyston-----	35	Very limited Slope Water erosion Large stones content Too clayey	1.00 1.00 1.00 1.00	Very limited Water erosion Slope Large stones content Too clayey	1.00 1.00 1.00 1.00	Very limited Depth to bedrock Slope Droughty Large stones content Too clayey	1.00 1.00 1.00 1.00 1.00
Nonaburg-----	28	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Depth to bedrock Slope Droughty Large stones content	1.00 1.00 1.00 0.68
Rock outcrop----	15	Not rated		Not rated		Not rated	
LtC: Loyston-----	33	Very limited Too clayey	1.00	Very limited Too clayey	1.00	Very limited Depth to bedrock Droughty Too clayey Large stones content Gravel content	1.00 1.00 1.00 0.46 0.01
Talbott-----	23	Not limited		Not limited		Somewhat limited Depth to bedrock Droughty Slope	0.29 0.01 0.01

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LtC: Rock outcrop----	22	Not rated		Not rated		Not rated	
LtD: Loyston-----	33	Very limited Water erosion Slope Too clayey	1.00 1.00 1.00	Very limited Water erosion Too clayey Slope	1.00 1.00 0.56	Very limited Depth to bedrock Slope Droughty Too clayey Large stones content	1.00 1.00 1.00 1.00 0.46
Talbott-----	23	Very limited Slope	1.00	Somewhat limited Slope	0.56	Very limited Slope Depth to bedrock Droughty	1.00 0.29 0.01
Rock outcrop----	22	Not rated		Not rated		Not rated	
MfD: Minvale-----	70	Very limited Large stones content Slope	1.00 0.32	Very limited Large stones content	1.00	Very limited Slope	1.00
Fullerton-----	23	Somewhat limited Slope	0.32	Not limited		Very limited Slope Gravel content Large stones content	1.00 0.26 0.05
MfE: Minvale-----	48	Very limited Slope Large stones content	1.00 1.00	Very limited Large stones content Slope	1.00 0.96	Very limited Slope	1.00
Bodine-----	25	Not rated		Not rated		Not rated	
Fullerton-----	20	Very limited Slope	1.00	Somewhat limited Slope	0.96	Very limited Slope Gravel content Large stones content	1.00 0.26 0.05
NnD3: Nonaburg-----	60	Somewhat limited Slope	0.32	Not limited		Very limited Depth to bedrock Droughty Slope Large stones content	1.00 1.00 1.00 0.68
NnE3: Nonaburg-----	60	Very limited Slope	1.00	Somewhat limited Slope	0.96	Very limited Depth to bedrock Slope Droughty Large stones content	1.00 1.00 1.00 0.68

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ph: Pettyjon-----	60	Not limited		Not limited		Somewhat limited Flooding	0.60
Hamblen-----	32	Not limited		Not limited		Somewhat limited Flooding	0.60
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	
Ro: Rockdell-----	80	Not limited		Not limited		Somewhat limited Gravel content Large stones content Droughty	0.71 0.08 0.05
SaC: Salacoa-----	78	Not rated		Not rated		Not rated	
SaD: Salacoa-----	90	Not rated		Not rated		Not rated	
SbC: Salacoa-----	75	Not limited		Not limited		Somewhat limited Gravel content Slope	0.88 0.04
Apison-----	25	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Large stones content Depth to bedrock Slope	0.68 0.54 0.04
SeC: Salacoa-----	50	Not limited		Not limited		Somewhat limited Gravel content	0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
SeD: Salacoa-----	50	Somewhat limited Slope	0.32	Not limited		Very limited Slope Gravel content	1.00 0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
ShB: Shady-----	88	Not limited		Not limited		Not limited	
ShC: Shady-----	93	Not limited		Not limited		Somewhat limited Slope	0.04

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
So:							
Shady-----	75	Not limited		Not limited		Not limited	
Whitwell-----	25	Not limited		Not limited		Not limited	
St:							
Steadman-----	68	Not limited		Not limited		Somewhat limited Flooding Depth to saturated zone	0.60 0.03
SwB:							
Swafford-----	80	Not limited		Not limited		Somewhat limited Depth to saturated zone	0.03
SwC:							
Swafford-----	80	Not limited		Not limited		Somewhat limited Slope Depth to saturated zone	0.04 0.03
TbC2:							
Talbott-----	40	Not limited		Not limited		Somewhat limited Slope Depth to bedrock Droughty	0.84 0.29 0.01
Rock outcrop----	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.84
Tc:							
Toccoa-----	90	Somewhat limited Too sandy	0.01	Somewhat limited Too sandy	0.01	Not limited	
ToC:							
Townley-----	100	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Depth to bedrock Slope	0.65 0.04
TsD:							
Townley-----	50	Very limited Water erosion Large stones content Slope	1.00 1.00 0.18	Very limited Water erosion Large stones content	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.65
Loyston-----	25	Very limited Water erosion Too clayey Slope	1.00 1.00 0.18	Very limited Water erosion Too clayey	1.00 1.00	Very limited Depth to bedrock Droughty Slope Too clayey Large stones content	1.00 1.00 1.00 1.00 0.46

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TvD: Townley-----	55	Very limited Water erosion Slope	1.00 0.02	Very limited Water erosion	1.00	Very limited Slope Depth to bedrock	1.00 0.65
Montevallo-----	35	Somewhat limited Slope	0.02	Not limited		Very limited Depth to bedrock Droughty Slope Gravel content	1.00 1.00 1.00 0.41
TvE: Townley-----	55	Very limited Water erosion Slope	1.00 1.00	Very limited Water erosion Slope	1.00 0.08	Very limited Slope Depth to bedrock	1.00 0.65
Montevallo-----	35	Very limited Slope	1.00	Somewhat limited Slope	0.08	Very limited Depth to bedrock Slope Droughty Gravel content	1.00 1.00 1.00 0.41
TvF: Townley-----	55	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.65
Montevallo-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Depth to bedrock Slope Droughty Gravel content	1.00 1.00 1.00 0.41
Ur: Urban land-----	90	Not rated		Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Not limited		Not limited		Not limited	
WeC: Waynesboro-----	93	Not limited		Not limited		Somewhat limited Slope	0.04
WeD2: Waynesboro-----	85	Somewhat limited Slope	0.32	Not limited		Very limited Slope	1.00

Soil Survey of Knox County, Tennessee

Table 9.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WsC: Waynesboro-----	80	Not limited		Not limited		Somewhat limited Large stones content Slope	0.32 0.04
WwB: Whitwell-----	78	Not limited		Not limited		Not limited	

Table 10.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements										Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life		
Amc: Apison-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor		
Montevallo-----	Very poor	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor		
Amd: Apison-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor		
Montevallo-----	Very poor	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor		
AmE, AmF: Apison-----	Very poor	Very poor	Good	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor		
Montevallo-----	Very poor	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor		
Bd: Bloomingdale-----	Poor	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good		
Bh: Bloomingdale-----	Poor	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good		
Hamblen-----	Fair	Fair	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor		
CcC: Coghill-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor		
Corryton-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor		
CcD, CcE: Coghill-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor		
Corryton-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor		

Soil Survey of Knox County, Tennessee

Table 10.-Wildlife Habitat-Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for			
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
CeB3: Collegedale-----	Fair	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Good	Very poor
CeC3: Collegedale-----	Fair	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
CeD3: Collegedale-----	Poor	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
CgB: Collegedale-----	Fair	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Good	Very poor
Loyston-----	Poor	Poor	Fair	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop.											
CkC: Collegedale-----	Fair	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Talbott-----	Fair	Good	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
CkD: Collegedale-----	Poor	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Talbott-----	Poor	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
CoB, CoC: Corryton-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
CoD: Corryton-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
CtB, CtC: Corryton-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Townley-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 10.-Wildlife Habitat-Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for			
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
CzC: Corryton-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Udorthents. Urban land.											
CzD: Corryton-----	Poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Udorthents. Urban land.											
DeB: Dewey-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
DeC2: Dewey-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
DeD2: Dewey-----	Poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
DeE2: Dewey-----	Very poor	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Poor	Poor	Very poor
DgE3: Dewey-----	Very poor	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Poor	Poor	Very poor
Coghill-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
DwD: Dewey-----	Poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Etawah-----	Poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor

Soil Survey of Knox County, Tennessee

Table 10.-Wildlife Habitat-Continued

Map symbol and soil name	Potential for habitat elements						Potential as habitat for				
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
DwE: Dewey-----	Very poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Etawah-----	Very poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
DyC: Dewey-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Udorthents. Urban land.											
DyD: Dewey-----	Poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Udorthents. Urban land.											
Dz. Dumps											
EmB: Emory-----	Good	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
EmC: Emory-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
EtB: Etawah-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
EvB: Etawah-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Minvale-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
FuC2: Fullerton-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 10.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for			
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
FuD2: Fullerton-----	Poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
FuE2: Fullerton-----	Very poor	Poor	Good	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
FvC: Fullerton-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Minvale-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
FzC: Fullerton-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Udortheints. Urban land.											
FzD: Fullerton-----	Poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Udortheints. Urban land.											
He: Heiskell-----	Fair	Fair	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
HeB: Heiskell-----	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
LoC: Loyston-----	Poor	Poor	Fair	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop.											
LoE: Loyston-----	Very poor	Poor	Fair	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor

Table 10.-Wildlife Habitat-Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for			
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
IrF: Loyston-----	Very poor	Very poor	Fair	Poor	Poor	Poor	Very poor	Very poor	Very poor	Poor	Very poor
Nonaburg-----	Very poor	Very poor	Fair	Poor	Poor	Poor	Very poor	Very poor	Very poor	Fair	Very poor
Rock outcrop.											
ItC: Loyston-----	Poor	Poor	Fair	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Talbott-----	Fair	Good	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Rock outcrop.											
ItD: Loyston-----	Very poor	Poor	Fair	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Talbott-----	Poor	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Rock outcrop.											
MfD: Minvale-----	Poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Fullerton-----	Poor	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
MfE: Minvale-----	Very poor	Poor	Good	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Bodine-----	Very poor	Poor	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Fullerton-----	Very poor	Poor	Good	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor

Soil Survey of Knox County, Tennessee

Table 10.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for			
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
NnD3: Nonaburg-----	Very poor	Poor	Fair	Poor	Poor	Fair	Very poor	Very poor	Poor	Fair	Very poor
NnE3: Nonaburg-----	Very poor	Very poor	Fair	Poor	Poor	Fair	Very poor	Very poor	Very poor	Fair	Very poor
Ph: Pettyjon-----	Fair	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Hamblen-----	Poor	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Pz. Pits, mines, and dumps											
Ro: Rockdell-----	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Very poor
SaC, SaD: Salacoa-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
SbC: Salacoa-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Apison-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
SeC, SeD: Salacoa-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Udorthents. Urban land.											
ShB, ShC: Shady-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
So: Shady-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Whitwell-----	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor

Soil Survey of Knox County, Tennessee

Table 10.-Wildlife Habitat-Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
St: Steadman-----	Fair	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
SwB, SwC: Swafford-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
TbC2: Talbott-----	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Rock outcrop.										
Bradyville-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Tc: Toccoa-----	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
ToC: Townley-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
TsD: Townley-----	Poor	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Loyston-----	Very poor	Fair	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
TvD: Townley-----	Poor	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Montevallo-----	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
TvE, TvF: Townley-----	Very poor	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Montevallo-----	Very poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Ur. Urban land										

Table 10.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for			
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
Uu. Urban land-Udorthents											
W. Water											
WaF: Wallen-----	Very poor	Poor	Fair	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop.											
WeB: Waynesboro-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WeC, WeD2: Waynesboro-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WsC: Waynesboro-----	Fair	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WwB: Whitwell-----	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor

Soil Survey of Knox County, Tennessee

Table 11.--Building Site Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC: Apison-----	50	Somewhat limited Slope	0.04	Somewhat limited Depth to soft bedrock Slope	0.54 0.04	Very limited Slope	1.00
Montevallo-----	25	Somewhat limited Depth to soft bedrock Slope	0.50 0.04	Very limited Depth to soft bedrock Slope	1.00 0.04	Very limited Depth to soft bedrock Slope	1.00 1.00
AmD: Apison-----	72	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.54	Very limited Slope	1.00
Montevallo-----	20	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Depth to soft bedrock Slope	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00
AmE: Apison-----	55	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.54	Very limited Slope	1.00
Montevallo-----	35	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00
AmF: Apison-----	58	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.54	Very limited Slope	1.00
Montevallo-----	25	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00
Bd: Bloomingdale, drained-----	55	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bd: Bloomingdale, undrained-----	30	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50
Bh: Bloomingdale----	60	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50
Hamblen-----	30	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.99	Very limited Flooding	1.00
CcC: Coghill-----	50	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
Corryton-----	35	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
CcD: Coghill-----	75	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
Corryton-----	20	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
CcE: Coghill-----	45	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
Corryton-----	30	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
CeB3: Collegedale----	88	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
CeC3: Collegedale----	83	Somewhat limited Shrink-swell Slope	0.50 0.01	Somewhat limited Shrink-swell Slope	0.50 0.01	Very limited Slope Shrink-swell	1.00 0.50

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CeD3: Collegedale-----	88	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
CgB: Collegedale-----	58	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Loyston-----	25	Very limited Depth to hard bedrock Shrink-swell Depth to soft bedrock	1.00 0.50 0.50	Very limited Depth to hard bedrock Depth to soft bedrock Shrink-swell	1.00 1.00 0.50	Very limited Depth to hard bedrock Depth to soft bedrock Shrink-swell	1.00 1.00 0.50
Rock outcrop----	17	Not rated		Not rated		Not rated	
CkC: Collegedale-----	63	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
Talbott-----	23	Somewhat limited Shrink-swell Depth to hard bedrock Slope	0.50 0.29 0.04	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.04	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.29
CkD: Collegedale-----	55	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
Talbott-----	38	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 1.00 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.29
CoB: Corryton-----	85	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
CoC: Corryton-----	85	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
CoD: Corryton-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
CtB: Corryton-----	60	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50

Soil Survey of Knox County, Tennessee

Table 11.--Building Site Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CtB: Townley-----	35	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to soft bedrock Shrink-swell	0.64 0.50	Somewhat limited Shrink-swell	0.50
CtC: Corryton-----	73	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
Townley-----	22	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Depth to soft bedrock Shrink-swell Slope	0.64 0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
CzC: Corryton-----	50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.88 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
CzD: Corryton-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DeB: Dewey-----	90	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
DeC2: Dewey-----	68	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
DeD2: Dewey-----	88	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
DeE2: Dewey-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
DgE3: Dewey-----	45	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50

Soil Survey of Knox County, Tennessee

Table 11.--Building Site Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DgE3: Coghill-----	25	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
DwD, DwE: Dewey-----	47	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
Etowah-----	42	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
DyC: Dewey-----	50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.88 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DyD: Dewey-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated		Not rated	
EmB: Emory-----	83	Not limited		Not limited		Not limited	
EmC: Emory-----	83	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
EtB: Etowah-----	93	Not limited		Not limited		Not limited	
EvB: Etowah-----	55	Not limited		Not limited		Not limited	
Minvale-----	30	Not limited		Not limited		Not limited	
FuC2: Fullerton-----	90	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
FuD2, FuE2: Fullerton-----	90	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50

Soil Survey of Knox County, Tennessee

Table 11.--Building Site Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FvC:							
Fullerton-----	53	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
Minvale-----	38	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
FzC:							
Fullerton-----	50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.88 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD:							
Fullerton-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
He:							
Heiskell-----	75	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.99	Very limited Flooding	1.00
HeB:							
Heiskell-----	70	Not limited		Very limited Depth to saturated zone	0.99	Not limited	
LoC:							
Loyston-----	70	Very limited Depth to hard bedrock Shrink-swell Depth to soft bedrock Slope	1.00 0.50 0.50 0.04	Very limited Depth to hard bedrock Depth to soft bedrock Shrink-swell Slope	1.00 1.00 0.50 0.04	Very limited Depth to hard bedrock Depth to soft bedrock Slope Shrink-swell	1.00 1.00 1.00 0.50
Rock outcrop---	30	Not rated		Not rated		Not rated	
LoE:							
Loyston-----	70	Very limited Slope Depth to hard bedrock Shrink-swell Depth to soft bedrock	1.00 1.00 0.50 0.50	Very limited Slope Depth to hard bedrock Depth to soft bedrock Shrink-swell	1.00 1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Depth to soft bedrock Shrink-swell	1.00 1.00 1.00 0.50

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LrF:							
Loyston-----	35	Very limited Slope Depth to hard bedrock Shrink-swell Depth to soft bedrock Large stones content	1.00 1.00 0.50 0.50 0.01	Very limited Slope Depth to hard bedrock Depth to soft bedrock Shrink-swell Large stones content	1.00 1.00 1.00 0.50 0.01	Very limited Slope Depth to hard bedrock Depth to soft bedrock Shrink-swell Large stones content	1.00 1.00 1.00 1.00 0.50 0.01
Nonaburg-----	28	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 1.00 1.00 0.50
Rock outcrop----	15	Not rated		Not rated		Not rated	
LtC:							
Loyston-----	33	Very limited Depth to hard bedrock Shrink-swell Depth to soft bedrock Slope	1.00 0.50 0.50 0.01	Very limited Depth to hard bedrock Depth to soft bedrock Shrink-swell Slope	1.00 1.00 0.50 0.01	Very limited Depth to hard bedrock Depth to soft bedrock Slope Shrink-swell	1.00 1.00 1.00 1.00 0.50
Talbott-----	23	Somewhat limited Shrink-swell Depth to hard bedrock Slope	0.50 0.29 0.01	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.01	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.29
Rock outcrop----	22	Not rated		Not rated		Not rated	
LtD:							
Loyston-----	33	Very limited Slope Depth to hard bedrock Shrink-swell Depth to soft bedrock	1.00 1.00 0.50 0.50	Very limited Slope Depth to hard bedrock Depth to soft bedrock Shrink-swell	1.00 1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Depth to soft bedrock Shrink-swell	1.00 1.00 1.00 1.00 0.50
Talbott-----	23	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.29	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.29
Rock outcrop----	22	Not rated		Not rated		Not rated	
MfD:							
Minvale-----	70	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Knox County, Tennessee

Table 11.--Building Site Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MfD: Fullerton-----	23	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
MfE: Minvale-----	48	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Bodine-----	25	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Fullerton-----	20	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
NnD3: Nonaburg-----	60	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.50	Very limited Depth to soft bedrock Slope Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 1.00 0.50
NnE3: Nonaburg-----	60	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 1.00 0.50
Ph: Pettyjon-----	60	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.03	Very limited Flooding	1.00
Hamblen-----	32	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.99	Very limited Flooding	1.00
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	
Ro: Rockdell-----	80	Very limited Flooding	1.00	Very limited Flooding Shrink-swell Depth to saturated zone	1.00 0.50 0.49	Very limited Flooding	1.00
SaC: Salacoa-----	78	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
SaD: Salacoa-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SbC: Salacoa-----	75	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
Apison-----	25	Somewhat limited Slope	0.04	Somewhat limited Depth to soft bedrock Slope	0.54 0.04	Very limited Slope	1.00
SeC: Salacoa-----	50	Not limited		Not limited		Somewhat limited Slope	0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
SeD: Salacoa-----	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
ShB: Shady-----	88	Not limited		Not limited		Not limited	
ShC: Shady-----	93	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
So: Shady-----	75	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
Whitwell-----	25	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.99	Very limited Flooding	1.00
St: Steadman-----	68	Very limited Flooding Depth to saturated zone	1.00 0.07	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.07
SwB: Swafford-----	80	Somewhat limited Depth to saturated zone	0.07	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.07
SwC: Swafford-----	80	Somewhat limited Depth to saturated zone Slope	0.07 0.04	Very limited Depth to saturated zone Slope	1.00 0.04	Very limited Slope Depth to saturated zone	1.00 0.07

Soil Survey of Knox County, Tennessee

Table 11.--Building Site Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TbC2: Talbott-----	40	Somewhat limited Slope Shrink-swell Depth to hard bedrock	0.84 0.50 0.29	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 0.84 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.29
Rock outcrop----	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Somewhat limited Slope Shrink-swell	0.84 0.50	Somewhat limited Slope Shrink-swell Depth to hard bedrock	0.84 0.50 0.32	Very limited Slope Shrink-swell	1.00 0.50
Tc: Toccoa-----	90	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.16	Very limited Flooding	1.00
ToC: Townley-----	100	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Depth to soft bedrock Shrink-swell Slope	0.64 0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
TsD: Townley-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 0.64 0.50	Very limited Slope Shrink-swell	1.00 0.50
Loyston-----	25	Very limited Depth to hard bedrock Slope Shrink-swell Depth to soft bedrock	1.00 1.00 0.50 0.50	Very limited Depth to hard bedrock Depth to soft bedrock Slope Shrink-swell	1.00 1.00 1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Depth to soft bedrock Shrink-swell	1.00 1.00 1.00 0.50
TvD: Townley-----	55	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 0.64 0.50	Very limited Slope Shrink-swell	1.00 0.50
Montevallo-----	35	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Depth to soft bedrock Slope	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00

Soil Survey of Knox County, Tennessee

Table 11.--Building Site Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TvE, TvF: Townley-----	55	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 0.64 0.50	Very limited Slope Shrink-swell	1.00 0.50
Montevallo-----	35	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00
Ur: Urban land-----	90	Not rated		Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Very limited Slope Depth to hard bedrock Large stones content	1.00 0.90 0.44	Very limited Slope Depth to hard bedrock Large stones content	1.00 1.00 0.44	Very limited Slope Depth to hard bedrock Large stones content	1.00 0.90 0.44
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Not limited		Not limited		Not limited	
WeC: Waynesboro-----	93	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
WeD2: Waynesboro-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
WsC: Waynesboro-----	80	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
WwB: Whitwell-----	78	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.99	Very limited Flooding	1.00

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Table 11.—Building Site Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC:							
Apison-----	50	Somewhat limited Low strength Slope	0.50 0.50	Very limited Cutbanks cave Depth to soft bedrock Slope	1.00 1.00 1.00	Somewhat limited Depth to bedrock Slope	0.50 0.50
Montevallo-----	30	Somewhat limited Depth to soft bedrock Slope	1.00 0.50	Very limited Depth to soft bedrock Cutbanks cave Slope	1.00 1.00 1.00 0.96	Very limited Depth to bedrock Droughty Gravel content Slope	1.00 1.00 1.00 0.96
AmD:							
Apison-----	80	Very limited Slope Low strength	1.00 1.00	Very limited Cutbanks cave Slope Depth to soft bedrock	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Montevallo-----	20	Very limited Depth to soft bedrock Slope	1.00 1.00	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Depth to bedrock Droughty Slope Gravel content	1.00 1.00 1.00 0.96
AmE:							
Apison-----	58	Very limited Slope Low strength	1.00 1.00	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Montevallo-----	35	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Depth to bedrock Slope Droughty Gravel content	1.00 1.00 1.00 0.96
AmF:							
Apison-----	60	Very limited Slope Low strength	1.00 1.00	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Montevallo-----	20	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Depth to bedrock Slope Droughty Gravel content	1.00 1.00 1.00 0.96

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bd: Bloomingdale, drained-----	55	Very limited Depth to saturated zone Flooding Low strength Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Flooding Too clayey Cutbanks cave	1.00 0.60 0.28 0.10	Very limited Depth to saturated zone Flooding	1.00 0.60
Bloomingdale, undrained-----	30	Very limited Depth to saturated zone Low strength Ponding Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Too clayey Cutbanks cave	1.00 1.00 0.28 0.10	Very limited Depth to saturated zone Ponding	1.00 1.00
Bh: Bloomingdale----	60	Very limited Depth to saturated zone Flooding Low strength Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Flooding Too clayey Cutbanks cave	1.00 0.60 0.28 0.10	Very limited Depth to saturated zone Flooding	1.00 0.60
Hamblen-----	30	Very limited Flooding	1.00	Very limited Depth to saturated zone Flooding Cutbanks cave	0.99 0.60 0.10	Somewhat limited Flooding	0.60
CcC: Coghill-----	50	Very limited Low strength Shrink-swell Slope	1.00 0.50 0.04	Somewhat limited Cutbanks cave Slope	0.10 0.04	Somewhat limited Slope	0.04
Corryton-----	35	Very limited Low strength Shrink-swell Slope	1.00 0.50 0.04	Somewhat limited Cutbanks cave Too clayey Slope	0.10 0.04 0.04	Somewhat limited Slope	0.04
CcD: Coghill-----	75	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
Corryton-----	20	Very limited Low strength Slope Shrink-swell	1.00 1.00 0.50	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.04	Very limited Slope	1.00
CcE: Coghill-----	45	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CcE: Corryton-----	30	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.04	Very limited Slope	1.00
CeB3: Collegedale-----	88	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
CeC3: Collegedale-----	83	Very limited Low strength Shrink-swell Slope	1.00 0.50 0.01	Somewhat limited Too clayey Cutbanks cave Slope	0.50 0.10 0.01	Somewhat limited Slope	0.01
CeD3: Collegedale-----	88	Very limited Low strength Slope Shrink-swell	1.00 1.00 0.50	Very limited Slope Too clayey Cutbanks cave	1.00 0.50 0.10	Very limited Slope	1.00
CgB: Collegedale-----	58	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
Loyston-----	25	Very limited Depth to hard bedrock Depth to soft bedrock Shrink-swell	1.00 1.00 0.50	Very limited Depth to hard bedrock Depth to soft bedrock Cutbanks cave	1.00 1.00 0.10	Very limited Depth to bedrock Droughty Too clayey Large stones content Gravel content	1.00 1.00 1.00 0.46 0.01
Rock outcrop----	17	Not rated		Not rated		Not rated	
CkC: Collegedale-----	63	Very limited Low strength Shrink-swell Slope	1.00 0.50 0.04	Somewhat limited Too clayey Cutbanks cave Slope	0.50 0.10 0.04	Somewhat limited Slope	0.04
Talbott-----	23	Very limited Low strength Shrink-swell Depth to hard bedrock Slope	1.00 0.50 0.29 0.04	Very limited Depth to hard bedrock Too clayey Cutbanks cave Slope	1.00 0.50 0.10 0.04	Somewhat limited Depth to bedrock Slope Droughty	0.29 0.04 0.01
CkD: Collegedale-----	55	Very limited Low strength Slope Shrink-swell	1.00 1.00 0.50	Very limited Slope Too clayey Cutbanks cave	1.00 0.50 0.10	Very limited Slope	1.00

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CkD: Talbot-----	38	Very limited Low strength Slope Shrink-swell Depth to hard bedrock	1.00 1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Too clayey Cutbanks cave	1.00 1.00 1.00 0.50 0.10	Very limited Slope Depth to bedrock Droughty	1.00 0.29 0.01
CoB: Corryton-----	85	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Cutbanks cave Too clayey	0.10 0.04	Not limited	
CoC: Corryton-----	85	Very limited Low strength Shrink-swell Slope	1.00 0.50 0.04	Somewhat limited Cutbanks cave Too clayey Slope	0.10 0.04 0.04	Somewhat limited Slope	0.04
CoD: Corryton-----	85	Very limited Low strength Slope Shrink-swell	1.00 1.00 0.50	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.04	Very limited Slope	1.00
CtB: Corryton-----	60	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Cutbanks cave Too clayey	0.10 0.04	Not limited	
Townley-----	35	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Depth to soft bedrock Too clayey Cutbanks cave	0.64 0.50 0.10	Somewhat limited Depth to bedrock	0.65
CtC: Corryton-----	73	Very limited Low strength Shrink-swell Slope	1.00 0.50 0.04	Somewhat limited Cutbanks cave Too clayey Slope	0.10 0.04 0.04	Somewhat limited Slope	0.04
Townley-----	22	Very limited Low strength Shrink-swell Slope	1.00 0.50 0.04	Somewhat limited Depth to soft bedrock Too clayey Cutbanks cave Slope	0.64 0.50 0.50 0.10 0.04	Somewhat limited Depth to bedrock Slope	0.65 0.04
CzC: Corryton-----	50	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Cutbanks cave Too clayey	0.10 0.04	Not limited	
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CzD: Corryton-----	50	Very limited Low strength Slope Shrink-swell	1.00 1.00 0.50	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.04	Very limited Slope	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DeB: Dewey-----	90	Somewhat limited Shrink-swell Low strength	0.50 0.10	Somewhat limited Cutbanks cave Too clayey	0.10 0.03	Not limited	
DeC2: Dewey-----	68	Somewhat limited Shrink-swell Low strength Slope	0.50 0.10 0.04	Somewhat limited Cutbanks cave Slope Too clayey	0.10 0.04 0.03	Somewhat limited Slope	0.04
DeD2: Dewey-----	88	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
DeE2: Dewey-----	85	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
DgE3: Dewey-----	45	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
Coghill-----	25	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
DwD: Dewey-----	47	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
Etowah-----	42	Very limited Low strength Slope	1.00 1.00	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
DwE: Dewey-----	47	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.03	Very limited Slope	1.00

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DwE: Etowah-----	42	Very limited Slope Low strength	1.00 1.00	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
DyC: Dewey-----	50	Somewhat limited Shrink-swell Low strength	0.50 0.10	Somewhat limited Cutbanks cave Too clayey	0.10 0.03	Not limited	
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DyD: Dewey-----	50	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz. Dumps							
EmB: Emory-----	83	Very limited Low strength	1.00	Somewhat limited Cutbanks cave Too clayey	0.10 0.03	Not limited	
EmC: Emory-----	83	Very limited Low strength Slope	1.00 0.04	Somewhat limited Cutbanks cave Slope Too clayey	0.10 0.04 0.03	Somewhat limited Slope	0.04
EtB: Etowah-----	93	Very limited Low strength	1.00	Somewhat limited Cutbanks cave	0.10	Not limited	
EvB: Etowah-----	55	Very limited Low strength	1.00	Somewhat limited Cutbanks cave	0.10	Not limited	
Minvale-----	30	Not limited		Very limited Cutbanks cave	1.00	Not limited	
FuC2: Fullerton-----	90	Somewhat limited Shrink-swell Low strength Slope	0.50 0.10 0.04	Very limited Cutbanks cave Too clayey Slope	1.00 0.50 0.04	Somewhat limited Gravel content Large stones content Slope	0.24 0.08 0.04

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FuD2: Fullerton-----	90	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Cutbanks cave Slope Too clayey	1.00 1.00 0.50	Very limited Slope Gravel content Large stones content	1.00 0.24 0.08
FuE2: Fullerton-----	90	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Slope Cutbanks cave Too clayey	1.00 1.00 0.50	Very limited Slope Gravel content Large stones content	1.00 0.24 0.08
FvC: Fullerton-----	53	Somewhat limited Shrink-swell Low strength Slope	0.50 0.10 0.04	Very limited Cutbanks cave Too clayey Slope	1.00 0.50 0.04	Somewhat limited Gravel content Large stones content Slope	0.26 0.05 0.04
Minvale-----	38	Somewhat limited Slope	0.04	Very limited Cutbanks cave Slope	1.00 0.04	Somewhat limited Slope	0.04
FzC: Fullerton-----	50	Somewhat limited Shrink-swell Low strength	0.50 0.10	Very limited Cutbanks cave Too clayey	1.00 0.50	Somewhat limited Gravel content Large stones content	0.26 0.05
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD: Fullerton-----	50	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Cutbanks cave Slope Too clayey	1.00 1.00 0.50	Very limited Slope Gravel content Large stones content	1.00 0.26 0.05
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
He: Heiskell-----	75	Very limited Flooding	1.00	Very limited Depth to saturated zone Flooding Cutbanks cave	0.99 0.60 0.10	Somewhat limited Flooding	0.60
HeB: Heiskell-----	70	Not limited		Very limited Depth to saturated zone Cutbanks cave	0.99 0.10	Not limited	

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LoC: Loyston-----	70	Very limited Depth to hard bedrock Depth to soft bedrock Shrink-swell Slope	1.00 1.00 0.50 0.04	Very limited Depth to hard bedrock Depth to soft bedrock Cutbanks cave Slope	1.00 1.00 0.10 0.04	Very limited Depth to bedrock Droughty Too clayey Large stones content Slope	1.00 1.00 1.00 0.46 0.04
Rock outcrop----	30	Not rated		Not rated		Not rated	
LoE: Loyston-----	70	Very limited Depth to hard bedrock Slope Depth to soft bedrock Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to hard bedrock Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Too clayey Large stones content	1.00 1.00 1.00 0.46
LrF: Loyston-----	35	Very limited Depth to hard bedrock Slope Depth to soft bedrock Shrink-swell Large stones content	1.00 1.00 1.00 0.50 0.01	Very limited Depth to hard bedrock Depth to soft bedrock Slope Cutbanks cave Large stones content	1.00 1.00 1.00 0.10 0.01	Very limited Depth to bedrock Slope Droughty Large stones content Too clayey	1.00 1.00 1.00 1.00 1.00
Nonaburg-----	28	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Larges stones content	1.00 1.00 1.00 0.68
Rock outcrop----	15	Not rated		Not rated		Not rated	
LtC: Loyston-----	33	Very limited Depth to hard bedrock Depth to soft bedrock Shrink-swell Slope	1.00 1.00 0.50 0.01	Very limited Depth to hard bedrock Depth to soft bedrock Cutbanks cave Slope	1.00 1.00 0.10 0.01	Very limited Depth to bedrock Droughty Too clayey Larges stones content Gravel content	1.00 1.00 1.00 0.46 0.01
Talbott-----	23	Very limited Low strength Shrink-swell Depth to hard bedrock Slope	1.00 0.50 0.29 0.01	Very limited Depth to hard bedrock Too clayey Cutbanks cave Slope	1.00 0.50 0.10 0.01	Somewhat limited Depth to bedrock Droughty Slope	0.29 0.01 0.01
Rock outcrop----	22	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LtD:							
Loyston-----	33	Very limited Depth to hard bedrock Slope Depth to soft bedrock Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to hard bedrock Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Too clayey Large stones content	1.00 1.00 1.00 0.46
Talbott-----	23	Very limited Slope Low strength Shrink-swell Depth to hard bedrock	1.00 1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Too clayey Cutbanks cave	1.00 1.00 1.00 0.50 0.10	Very limited Slope Depth to bedrock Droughty	1.00 0.29 0.01
Rock outcrop----	22	Not rated		Not rated		Not rated	
MfD:							
Minvale-----	70	Very limited Slope	1.00	Very limited Cutbanks cave Slope	1.00 1.00	Very limited Slope	1.00
Fullerton-----	23	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Cutbanks cave Slope Too clayey	1.00 1.00 0.50	Very limited Slope Gravel content Large stones content	1.00 0.26 0.05
MfE:							
Minvale-----	48	Very limited Slope	1.00	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope	1.00
Bodine-----	25	Very limited Slope	1.00	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope Gravel content Large stones content	1.00 0.26 0.05
Fullerton-----	20	Very limited Slope Shrink-swell Low strength	1.00 0.50 0.10	Very limited Slope Cutbanks cave Too clayey	1.00 1.00 0.50	Very limited Slope Gravel content Large stones content	1.00 0.26 0.05
NnD3:							
Nonaburg-----	60	Very limited Depth to soft bedrock Slope Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Droughty Slope Large stones content	1.00 1.00 1.00 0.68
NnE3:							
Nonaburg-----	60	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Large stones content	1.00 1.00 1.00 0.68

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ph: Pettyjon-----	60	Very limited Flooding	1.00	Somewhat limited Flooding Cutbanks cave Depth to saturated zone	0.60 0.10 0.03	Somewhat limited Flooding	0.60
Hamblen-----	32	Very limited Flooding	1.00	Very limited Depth to saturated zone Flooding Cutbanks cave	0.99 0.60 0.10	Somewhat limited Flooding	0.60
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	
Ro: Rockdell-----	80	Somewhat limited Flooding	0.40	Very limited Cutbanks cave Depth to saturated zone	1.00 0.49	Somewhat limited Gravel content Large stones content Droughty	0.71 0.08 0.05
SaC: Salacoa-----	78	Somewhat limited Slope	0.04	Somewhat limited Cutbanks cave Slope	0.10 0.04	Somewhat limited Gravel content	0.88
SaD: Salacoa-----	90	Very limited Slope	1.00	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope Gravel content	1.00 0.88
SbC: Salacoa-----	75	Somewhat limited Slope	0.04	Somewhat limited Cutbanks cave Slope	0.10 0.04	Somewhat limited Gravel content Slope	0.88 0.04
Apison-----	25	Somewhat limited Low strength Slope	0.22 0.04	Very limited Cutbanks cave Depth to soft bedrock Slope	1.00 0.54 0.04	Somewhat limited Large stones content Depth to bedrock Slope	0.68 0.54 0.04
SeC: Salacoa-----	50	Not limited		Somewhat limited Cutbanks cave	0.10	Somewhat limited Gravel content	0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
SeD: Salacoa-----	50	Very limited Slope	1.00	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope Gravel content	1.00 0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ShB: Shady-----	88	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
ShC: Shady-----	93	Somewhat limited Slope	0.04	Somewhat limited Cutbanks cave Slope	0.10 0.04	Somewhat limited Slope	0.04
So: Shady-----	75	Somewhat limited Flooding	0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
Whitwell-----	25	Somewhat limited Flooding	0.40	Very limited Depth to saturated zone Cutbanks cave	0.99 0.10	Not limited	
St: Steadman-----	68	Very limited Flooding Low strength Depth to saturated zone	1.00 1.00 0.03	Very limited Depth to saturated zone Flooding Cutbanks cave	1.00 0.60 0.10	Somewhat limited Flooding Depth to saturated zone	0.60 0.03
SwB: Swafford-----	80	Somewhat limited Low strength Depth to saturated zone	0.22 0.03	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Depth to saturated zone	0.03
SwC: Swafford-----	80	Somewhat limited Low strength Slope Depth to saturated zone	0.22 0.04 0.03	Very limited Depth to saturated zone Cutbanks cave Slope	1.00 0.10 0.04	Somewhat limited Slope Depth to saturated zone	0.04 0.03
Tbc2: Talbott-----	40	Very limited Low strength Slope Shrink-swell Depth to hard bedrock	1.00 0.84 0.50 0.29	Very limited Depth to hard bedrock Slope Too clayey Cutbanks cave	1.00 0.84 0.50 0.10	Somewhat limited Slope Depth to bedrock Droughty	0.84 0.29 0.01
Rock outcrop---	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Very limited Low strength Slope Shrink-swell	1.00 0.84 0.50	Somewhat limited Slope Too clayey Depth to hard bedrock Cutbanks cave	0.84 0.50 0.32 0.10	Somewhat limited Slope	0.84
Tc: Toccoa-----	90	Somewhat limited Flooding	0.40	Somewhat limited Depth to saturated zone Cutbanks cave	0.16 0.10	Not limited	

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ToC: Townley-----	100	Very limited Low strength Shrink-swell Slope	1.00 0.50 0.04	Somewhat limited Depth to soft bedrock Too clayey Cutbanks cave Slope	0.64 0.50 0.10 0.04	Somewhat limited Depth to bedrock Slope	0.65 0.04
TsD: Townley-----	50	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.64 0.50 0.10	Very limited Slope Depth to bedrock	1.00 0.65
Loyston-----	25	Very limited Depth to hard bedrock Depth to soft bedrock Slope Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to hard bedrock Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Droughty Slope Too clayey Large stones content	1.00 1.00 1.00 1.00 0.46
TvD: Townley-----	55	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.64 0.50 0.10	Very limited Slope Depth to bedrock	1.00 0.65
Montevallo-----	35	Very limited Depth to soft bedrock Slope	1.00 1.00	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Depth to bedrock Droughty Slope Gravel content	1.00 1.00 1.00 0.41
TvE, TvF: Townley-----	55	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.64 0.50 0.10	Very limited Slope Depth to bedrock	1.00 0.65
Montevallo-----	35	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Gravel content	1.00 1.00 1.00 0.41
Ur: Urban land-----	90	Not rated		Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Very limited Slope Depth to hard bedrock Large stones content	1.00 0.90 0.44	Very limited Depth to hard bedrock Slope Large stones content Cutbanks cave	1.00 1.00 0.44 0.10	Very limited Slope Large stones Cutbanks cave	1.00 0.44 0.10
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Somewhat limited Low strength	0.10	Somewhat limited Cutbanks cave Too clayey	0.10 0.03	Not limited	
WeC: Waynesboro-----	93	Somewhat limited Low strength Slope	0.10 0.04	Somewhat limited Cutbanks cave Slope Too clayey	0.10 0.04 0.03	Somewhat limited Slope	0.04
WeD2: Waynesboro-----	85	Very limited Slope Low strength	1.00 0.10	Very limited Slope Cutbanks cave Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
WsC: Waynesboro-----	80	Somewhat limited Low strength Slope	0.10 0.04	Somewhat limited Cutbanks cave Slope Too clayey	0.10 0.04 0.03	Somewhat limited Large stones content Slope	0.32 0.04
WwB: Whitwell-----	78	Somewhat limited Flooding	0.40	Very limited Depth to saturated zone Cutbanks cave	0.99 0.10	Not limited	

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AmC: Apison-----	50	Very limited Depth to bedrock Slow water movement Slope	1.00 0.46 0.04	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53
Montevallo-----	25	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53
AmD: Apison-----	72	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.46	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53
Montevallo-----	20	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53
AmE: Apison-----	55	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.46	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53
Montevallo-----	35	Very limited Depth to bedrock Slope	1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53
AmF: Apison-----	58	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.46	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53
Montevallo-----	25	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Bd: Bloomingdale, drained-----	55	Very limited Flooding Slow water movement Depth to saturated zone	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
Bloomingdale, undrained-----	30	Very limited Slow water movement Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
Bh: Bloomingdale-----	60	Very limited Flooding Slow water movement Depth to saturated zone	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
Hamblen-----	30	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 0.53
CcC: Coghill-----	50	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
Corryton-----	35	Very limited Slow water movement Slope	1.00 0.04	Very limited Slope Seepage	1.00 0.53
CcD: Coghill-----	75	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
Corryton-----	20	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 0.53
CcE: Coghill-----	45	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CcE: Corryton-----	30	Very limited Slope Slow water movement	1.00 1.00	Very limited Slope Seepage	1.00 0.53
CeB3: Collegedale-----	88	Very limited Slow water movement	1.00	Somewhat limited Slope	0.32
CeC3: Collegedale-----	83	Very limited Slow water movement Slope	1.00 0.01	Very limited Slope	1.00
CeD3: Collegedale-----	88	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope	1.00
CgB: Collegedale-----	58	Very limited Slow water movement	1.00	Somewhat limited Slope	0.32
Loyston-----	25	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 0.32
Rock outcrop-----	17	Not rated		Not rated	
CkC: Collegedale-----	63	Very limited Slow water movement Slope	1.00 0.04	Very limited Slope	1.00
Talbott-----	23	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 0.04	Very limited Depth to hard bedrock Slope	1.00 1.00
CkD: Collegedale-----	55	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope	1.00
Talbott-----	38	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CoB: Corryton-----	85	Very limited Slow water movement	1.00	Somewhat limited Seepage Slope	0.53 0.08
CoC: Corryton-----	85	Very limited Slow water movement Slope	1.00 0.04	Very limited Slope Seepage	1.00 0.53
CoD: Corryton-----	85	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 0.53
CtB: Corryton-----	60	Very limited Slow water movement	1.00	Somewhat limited Seepage Slope	0.53 0.08
Townley-----	35	Very limited Slow water movement Depth to bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope	1.00 0.08
CtC: Corryton-----	73	Very limited Slow water movement Slope	1.00 0.04	Very limited Slope Seepage	1.00 0.53
Townley-----	22	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 0.04	Very limited Depth to soft bedrock Slope	1.00 1.00
CzC: Corryton-----	50	Very limited Slow water movement	1.00	Very limited Slope Seepage	1.00 0.53
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
CzD: Corryton-----	50	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 0.53
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
DeB: Dewey-----	90	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.32

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DeC2: Dewey-----	68	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
DeD2: Dewey-----	88	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
DeE2: Dewey-----	85	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
DgE3: Dewey-----	45	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
Coghill-----	25	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
DwD, DwE: Dewey-----	47	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
Etowah-----	42	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
DyC: Dewey-----	50	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
DyD: Dewey-----	50	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated	

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
EmB: Emory-----	83	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.32
EmC: Emory-----	83	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
EtB: Etowah-----	93	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.32
EvB: Etowah-----	55	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.32
Minvale-----	30	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.32
FuC2: Fullerton-----	90	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
FuD2, FuE2: Fullerton-----	90	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
FvC: Fullerton-----	53	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
Minvale-----	38	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
FzC: Fullerton-----	50	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
FzD: Fullerton-----	50	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FzD:					
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
He:					
Heiskell-----	75	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 0.53
HeB:					
Heiskell-----	70	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.32
LoC:					
Loyston-----	70	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00
Rock outcrop-----	30	Not rated		Not rated	
LoE:					
Loyston-----	70	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00
LrF:					
Loyston-----	35	Very limited Depth to bedrock Slope Large stones content	1.00 1.00 0.01	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00
Nonaburg-----	28	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to soft bedrock Slope	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
LtC:					
Loyston-----	33	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LtC:					
Talbott-----	23	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slow water	1.00	bedrock	
		movement		Slope	1.00
		Slope	0.01		
Rock outcrop-----	22	Not rated		Not rated	
LtD:					
Loyston-----	33	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
				Depth to soft	1.00
				bedrock	
				Slope	1.00
Talbott-----	23	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Slow water	1.00	Slope	1.00
		movement			
Rock outcrop-----	22	Not rated		Not rated	
MfD:					
Minvale-----	70	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water	0.46	Seepage	0.53
		movement			
Fullerton-----	23	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water	0.46	Seepage	0.53
		movement			
MfE:					
Minvale-----	48	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water	0.46	Seepage	0.53
		movement			
Bodine-----	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
				Large stones	0.02
				content	
Fullerton-----	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water	0.46	Seepage	0.53
		movement			
NnD3, NnE3:					
Nonaburg-----	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft	1.00
		Slope	1.00	bedrock	
				Slope	1.00

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ph: Pettyjon-----	60	Very limited Flooding Slow water movement Depth to saturated zone	1.00 0.46 0.08	Very limited Flooding Seepage	1.00 0.53
Hamblen-----	32	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 0.53
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated	
Ro: Rockdell-----	80	Somewhat limited Depth to saturated zone Slow water movement Flooding	0.95 0.46 0.40	Very limited Seepage Depth to saturated zone Flooding	1.00 0.44 0.40
SaC: Salacoa-----	78	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
SaD: Salacoa-----	90	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
SbC: Salacoa-----	75	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
Apison-----	25	Very limited Depth to bedrock Slow water movement Slope	1.00 0.46 0.04	Very limited Depth to soft bedrock Slope Seepage Large stones content	1.00 1.00 0.53 0.01
SeC: Salacoa-----	50	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SeD: Salacoa-----	50	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
ShB: Shady-----	88	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.32
ShC: Shady-----	93	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
So: Shady-----	75	Somewhat limited Slow water movement Flooding	0.46 0.40	Somewhat limited Seepage Flooding	0.53 0.40
Whitwell-----	25	Very limited Depth to saturated zone Slow water movement Flooding	1.00 0.46 0.40	Very limited Depth to saturated zone Seepage Flooding	1.00 0.53 0.40
St: Steadman-----	68	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 0.53
SwB: Swafford-----	80	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.32
SwC: Swafford-----	80	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.04	Very limited Depth to saturated zone Slope Seepage	1.00 1.00 0.53
TbC2: Talbutt-----	40	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 0.84	Very limited Depth to hard bedrock Slope	1.00 1.00

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Tbc2: Rock outcrop-----	35	Not rated		Not rated	
Bradyville-----	25	Very limited Slow water movement Slope Depth to bedrock	1.00 0.84 0.73	Very limited Slope Depth to hard bedrock	1.00 0.32
Tc: Toccoa-----	90	Very limited Seepage Depth to saturated zone Flooding	1.00 0.43 0.40	Very limited Seepage Flooding	1.00 0.40
ToC: Townley-----	100	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 0.04	Very limited Depth to soft bedrock Slope	1.00 1.00
TsD: Townley-----	50	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 1.00	Very limited Depth to soft bedrock Slope	1.00 1.00
Loyston-----	25	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00
TvD, TvE, TvF: Townley-----	55	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 1.00	Very limited Depth to soft bedrock Slope	1.00 1.00
Montevallo-----	35	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53
Ur: Urban land-----	90	Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated	
W: Water-----	100	Not rated		Not rated	

See footnote at end of table.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields*		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WaF: Wallen-----	80	Very limited Depth to bedrock Slope Seepage Large stones content	1.00 1.00 1.00 0.44	Very limited Depth to hard bedrock Slope Seepage Large stones content	1.00 1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
WeB: Waynesboro-----	90	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.32
WeC: Waynesboro-----	93	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
WeD2: Waynesboro-----	85	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
WsC: Waynesboro-----	80	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
WwB: Whitwell-----	78	Very limited Depth to saturated zone Slow water movement Flooding	1.00 0.46 0.40	Very limited Depth to saturated zone Seepage Flooding Slope	1.00 0.53 0.40 0.32

* These ratings may be used for a general evaluation of large areas; they are not applicable when planning small areas or specific sites. Absorption rates and site requirements are regulated by the Tennessee Department of Environment and Conservation (TDEC). TDEC requires onsite evaluation prior to issuing permits for installation and construction. The local TDEC office can be contacted for more information.

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC:							
Apison-----	50	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04
Montevallo-----	25	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Gravel content Slope	1.00 0.72 0.04
AmD:							
Apison-----	72	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00
Montevallo-----	20	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.72
AmE:							
Apison-----	55	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00
Montevallo-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.72
AmF:							
Apison-----	58	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00
Montevallo-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.72
Bd:							
Bloomingtondale, drained-----	55	Very limited Flooding Depth to saturated zone Too clayey	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Too clayey	1.00 1.00
Bloomingtondale, undrained-----	30	Very limited Depth to saturated zone Too clayey Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Too clayey Ponding	1.00 1.00 1.00

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bh:							
Bloomingdale----	60	Very limited Flooding Depth to saturated zone Too clayey	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Too clayey	1.00 1.00
Hamblen-----	30	Very limited Flooding Depth to saturated zone Too clayey	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 1.00	Somewhat limited Too clayey Depth to saturated zone	0.50 0.47
CcC:							
Coghill-----	50	Somewhat limited Too clayey Slope	0.50 0.04	Somewhat limited Slope	0.04	Somewhat limited Too clayey Slope	0.50 0.04
Corryton-----	35	Very limited Too clayey Slope	1.00 0.04	Somewhat limited Slope	0.04	Very limited Too clayey Hard to compact Slope	1.00 1.00 0.04
CcD:							
Coghill-----	75	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
Corryton-----	20	Very limited Too clayey Slope	1.00 1.00	Very limited Slope	1.00	Very limited Too clayey Hard to compact Slope	1.00 1.00 1.00
CcE:							
Coghill-----	45	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
Corryton-----	30	Very limited Slope Too clayey	1.00 1.00	Very limited Slope	1.00	Very limited Slope Too clayey Hard to compact	1.00 1.00 1.00
CeB3:							
Collegedale----	88	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
CeC3:							
Collegedale----	83	Very limited Too clayey Slope	1.00 0.01	Somewhat limited Slope	0.01	Very limited Too clayey Hard to compact Slope	1.00 1.00 0.01
CeD3:							
Collegedale----	88	Very limited Too clayey Slope	1.00 1.00	Very limited Slope	1.00	Very limited Too clayey Hard to compact Slope	1.00 1.00 1.00

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CgB: Collegedale-----	58	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Loyston-----	25	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Gravel content	1.00 0.01
Rock outcrop----	17	Not rated		Not rated		Not rated	
CkC: Collegedale-----	63	Very limited Too clayey Slope	1.00 0.04	Somewhat limited Slope	0.04	Very limited Too clayey Hard to compact Slope	1.00 1.00 0.04
Talbott-----	23	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Too clayey Hard to compact Slope	1.00 1.00 1.00 0.04
CkD: Collegedale-----	55	Very limited Too clayey Slope	1.00 1.00	Very limited Slope	1.00	Very limited Too clayey Hard to compact Slope	1.00 1.00 1.00
Talbott-----	38	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Too clayey Hard to compact Slope	1.00 1.00 1.00 1.00
CoB: Corryton-----	85	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
CoC: Corryton-----	85	Very limited Too clayey Slope	1.00 0.04	Somewhat limited Slope	0.04	Very limited Too clayey Hard to compact Slope	1.00 1.00 0.04
CoD: Corryton-----	85	Very limited Too clayey Slope	1.00 1.00	Very limited Slope	1.00	Very limited Too clayey Hard to compact Slope	1.00 1.00 1.00
CtB: Corryton-----	60	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CtB: Townley-----	35	Very limited Depth to bedrock Too clayey	1.00 1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey Hard to compact	1.00 1.00 1.00
CtC: Corryton-----	73	Very limited Too clayey Slope	1.00 0.04	Somewhat limited Slope	0.04	Very limited Too clayey Hard to compact Slope	1.00 1.00 0.04
Townley-----	22	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Too clayey Hard to compact Slope	1.00 1.00 1.00 0.04
CzC: Corryton-----	50	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
CzD: Corryton-----	50	Very limited Too clayey Slope	1.00 1.00	Very limited Slope	1.00	Very limited Too clayey Hard to compact Slope	1.00 1.00 1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DeB: Dewey-----	90	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
DeC2: Dewey-----	68	Somewhat limited Too clayey Slope	0.50 0.04	Somewhat limited Slope	0.04	Somewhat limited Too clayey Slope	0.50 0.04
DeD2: Dewey-----	88	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
DeE2: Dewey-----	85	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DgE3: Dewey-----	45	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
Coghill-----	25	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
DwD, DwE: Dewey-----	47	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
Etowah-----	42	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
DyC: Dewey-----	50	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DyD: Dewey-----	50	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated		Not rated	
EmB: Emory-----	83	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
EmC: Emory-----	83	Somewhat limited Too clayey Slope	0.50 0.04	Somewhat limited Slope	0.04	Somewhat limited Too clayey Slope	0.50 0.04
EtB: Etowah-----	93	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
EvB: Etowah-----	55	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
Minvale-----	30	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey Gravel content	0.50 0.19

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FuC2: Fullerton-----	90	Somewhat limited Too clayey Slope	0.50 0.04	Somewhat limited Slope	0.04	Somewhat limited Too clayey Hard to compact Gravel content Slope	0.50 0.50 0.24 0.04
FuD2, FuE2: Fullerton-----	90	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey Hard to compact Gravel content	1.00 0.50 0.50 0.24
FvC: Fullerton-----	53	Somewhat limited Too clayey Slope	0.50 0.04	Somewhat limited Slope	0.04	Somewhat limited Too clayey Hard to compact Gravel content Slope	0.50 0.50 0.25 0.04
Minvale-----	38	Somewhat limited Too clayey Slope	0.50 0.04	Somewhat limited Slope	0.04	Somewhat limited Too clayey Gravel content Slope	0.50 0.19 0.04
FzC: Fullerton-----	50	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey Hard to compact Gravel content	0.50 0.50 0.25
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD: Fullerton-----	50	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey Hard to compact Gravel content	1.00 0.50 0.50 0.25
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
He: Heiskell-----	75	Very limited Flooding Depth to saturated zone Too clayey	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 1.00	Somewhat limited Too clayey Depth to saturated zone	0.50 0.47
HeB: Heiskell-----	70	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey Depth to saturated zone	0.50 0.47

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LoC: Loyston-----	70	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope Gravel content	1.00 0.04 0.01
Rock outcrop----	30	Not rated		Not rated		Not rated	
LoE: Loyston-----	70	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.01
LrF: Loyston-----	35	Very limited Slope Depth to bedrock Large stones content	1.00 1.00 0.01	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Large stones content	1.00 1.00 0.01
Nonaburg-----	28	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Hard to compact	1.00 1.00 1.00
Rock outcrop----	15	Not rated		Not rated		Not rated	
LtC: Loyston-----	33	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Gravel content Slope	1.00 0.01 0.01
Talbott-----	23	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Too clayey Hard to compact Slope	1.00 1.00 1.00 0.01
Rock outcrop----	22	Not rated		Not rated		Not rated	
LtD: Loyston-----	33	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.01
Talbott-----	23	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Too clayey Hard to compact	1.00 1.00 1.00 1.00
Rock outcrop----	22	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MfD:							
Minvale-----	70	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey Gravel content	1.00 0.50 0.19
Fullerton-----	23	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey Hard to compact Gravel content	1.00 0.50 0.50 0.25
MfE:							
Minvale-----	48	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey Gravel content	1.00 0.50 0.19
Bodine-----	25	Very limited Slope Seepage Too clayey	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00	Very limited Slope Gravel content Seepage Too clayey	1.00 0.91 0.52 0.50
Fullerton-----	20	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey Hard to compact Gravel content	1.00 0.50 0.50 0.25
NnD3:							
Nonaburg-----	60	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Hard to compact Slope	1.00 1.00 1.00
NnE3:							
Nonaburg-----	60	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Hard to compact	1.00 1.00 1.00
Ph:							
Pettyjon-----	60	Very limited Flooding Depth to saturated zone Too clayey	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 1.00	Somewhat limited Too clayey	0.50
Hamblen-----	32	Very limited Flooding Depth to saturated zone Too clayey	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 1.00	Somewhat limited Too clayey Depth to saturated zone	0.50 0.47
Pz:							
Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ro: Rockdell-----	80	Very limited Depth to saturated zone Too clayey Flooding Large stones content	1.00 1.00 0.40 0.10	Very limited Depth to saturated zone Seepage Flooding	1.00 1.00 0.40	Very limited Too clayey Gravel content Large stones content	1.00 0.24 0.10
SaC: Salacoa-----	78	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04
SaD: Salacoa-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
SbC: Salacoa-----	75	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04
Apison-----	25	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04
SeC: Salacoa-----	50	Not limited		Not limited		Not limited	
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
SeD: Salacoa-----	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
ShB: Shady-----	88	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
ShC: Shady-----	93	Somewhat limited Too clayey Slope	0.50 0.04	Somewhat limited Slope	0.04	Somewhat limited Too clayey Slope	0.50 0.04
So: Shady-----	75	Somewhat limited Too clayey Flooding	0.50 0.40	Somewhat limited Flooding	0.40	Somewhat limited Too clayey	0.50
Whitwell-----	25	Very limited Depth to saturated zone Too clayey Flooding	1.00 0.50 0.40	Very limited Depth to saturated zone Flooding	1.00 0.40	Somewhat limited Too clayey Depth to saturated zone	0.50 0.47

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
St: Steadman-----	68	Very limited Flooding Depth to saturated zone Too clayey	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone Too clayey	0.68 0.50
SwB: Swafford-----	80	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Too clayey	0.68 0.50
SwC: Swafford-----	80	Very limited Depth to saturated zone Too clayey Slope	1.00 0.50 0.04	Very limited Depth to saturated zone Slope	1.00 0.04	Somewhat limited Depth to saturated zone Too clayey Slope	0.68 0.50 0.04
Tbc2: Talbott-----	40	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 0.84	Very limited Depth to bedrock Slope	1.00 0.84	Very limited Depth to bedrock Too clayey Hard to compact Slope	1.00 1.00 1.00 0.84
Rock outcrop----	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 0.84	Somewhat limited Slope Depth to bedrock	0.84 0.32	Very limited Too clayey Hard to compact Slope Depth to bedrock	1.00 1.00 0.84 0.32
Tc: Toccoa-----	90	Very limited Depth to saturated zone Seepage Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Seepage Flooding	1.00 1.00 0.40	Somewhat limited Seepage	0.52
ToC: Townley-----	100	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Too clayey Hard to compact Slope	1.00 1.00 1.00 0.04
TsD: Townley-----	50	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Too clayey Hard to compact Slope	1.00 1.00 1.00 1.00
Loyston-----	25	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.01

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TvD: Townley-----	55	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Too clayey Hard to compact Slope	1.00 1.00 1.00 1.00
Montevallo-----	35	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Gravel content Slope	1.00 1.00 1.00
TvE, TvF: Townley-----	55	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Too clayey Hard to compact	1.00 1.00 1.00 1.00
Montevallo-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 1.00
Ur: Urban land-----	90	Not rated		Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Very limited Slope Depth to bedrock Seepage Large stones content	1.00 1.00 1.00 0.44	Very limited Slope Seepage Depth to bedrock	1.00 1.00 1.00	Very limited Depth to bedrock Slope Seepage Large stones content Gravel content	1.00 1.00 0.52 0.44 0.09
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey Hard to compact	0.50 0.50
WeC: Waynesboro-----	93	Somewhat limited Too clayey Slope	0.50 0.04	Somewhat limited Slope	0.04	Somewhat limited Too clayey Hard to compact Slope	0.50 0.50 0.04

Soil Survey of Knox County, Tennessee

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WeD2: Waynesboro-----	85	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey Hard to compact	1.00 0.50 0.50
WsC: Waynesboro-----	80	Somewhat limited Too clayey Slope	0.50 0.04	Somewhat limited Slope	0.04	Somewhat limited Too clayey Hard to compact Slope	0.50 0.50 0.04
WwB: Whitwell-----	78	Very limited Depth to saturated zone Too clayey Flooding	1.00 0.50 0.40	Very limited Depth to saturated zone Flooding	1.00 0.40	Somewhat limited Too clayey Depth to saturated zone	0.50 0.47

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
AmC:					
Apison-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Montevallo-----	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
AmD:					
Apison-----	72	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Montevallo-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
AmE:					
Apison-----	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Montevallo-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
AmF:					
Apison-----	58	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Montevallo-----	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Bd:					
Bloomingtondale, drained-----	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Bloomingtondale, undrained-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bh:					
Bloomingtondale-----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Bh: Hamblen-----	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CcC: Coghill-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Corryton-----	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CcD: Coghill-----	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Corryton-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CcE: Coghill-----	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Corryton-----	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CeB3: Collegedale-----	88	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CeC3: Collegedale-----	83	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CeD3: Collegedale-----	88	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CgB: Collegedale-----	58	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Loyston-----	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop-----	17	Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
CkC: Collegedale-----	63	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Talbott-----	23	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
CkD: Collegedale-----	55	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Talbott-----	38	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
CoB, CoC, CoD: Corryton-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
CtB: Corryton-----	60	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Townley-----	35	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
CtC: Corryton-----	73	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Townley-----	22	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
CzC, CzD: Corryton-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
DeB: Dewey-----	90	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
DeC2: Dewey-----	68	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
DeD2: Dewey-----	88	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
DeE2: Dewey-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
DgE3: Dewey-----	45	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Coghill-----	25	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
DwD, DwE: Dewey-----	47	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Etowah-----	42	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
DyC, DyD: Dewey-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated	
EmB, EmC: Emory-----	83	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
EtB: Etowah-----	93	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
EvB: Etowah-----	55	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Minvale-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
FuC2, FuD2, FuE2: Fullerton-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
FvC: Fullerton-----	53	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Minvale-----	38	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
FzC, FzD: Fullerton-----	50	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
He: Heiskell-----	75	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
HeB: Heiskell-----	70	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
LoC: Loyston-----	70	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Rock outcrop-----	30	Not rated		Not rated	
LoE: Loyston-----	70	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
LrF: Loyston-----	35	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Nonaburg-----	28	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Rock outcrop-----	15	Not rated		Not rated	
LtC, LtD: Loyston-----	33	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
LtC, LtD: Talbott-----	23	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Rock outcrop-----	22	Not rated		Not rated	
MfD: Minvale-----	70	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Fullerton-----	23	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
MfE: Minvale-----	48	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Bodine-----	25	Fair Thickest layer Bottom layer	0.00 0.12	Poor Bottom layer Thickest layer	0.00 0.00
Fullerton-----	20	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
NnD3, NnE3: Nonaburg-----	60	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ph: Pettyjon-----	60	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Hamblen-----	32	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated	
Ro: Rockdell-----	80	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
SaC: Salacoa-----	78	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
SaD: Salacoa-----	90	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
SbC:					
Salacoa-----	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Apison-----	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
SeC, SeD:					
Salacoa-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Udorthents-----	25	Not rated		Not rated	
Urban land-----	20	Not rated		Not rated	
ShB:					
Shady-----	88	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
ShC:					
Shady-----	93	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
So:					
Shady-----	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Whitwell-----	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
St:					
Steadman-----	68	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SwB, SwC:					
Swafford-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
TbC2:					
Talbott-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop-----	35	Not rated		Not rated	
Bradyville-----	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Tc: Toccoa-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.03
ToC: Townley-----	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
TsD: Townley-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Loyston-----	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
TvD, TvE, TvF: Townley-----	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Montevallo-----	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Ur: Urban land-----	90	Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated	
W: Water-----	100	Not rated		Not rated	
WaF: Wallen-----	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
WeB: Waynesboro-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WeC: Waynesboro-----	93	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WeD2: Waynesboro-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
WsC: Waynesboro-----	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
WwB: Whitwell-----	78	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC: Apison-----	50	Fair		Poor		Fair	
		Organic matter content low	0.12	Depth to bedrock	0.00	Depth to bedrock	0.46
		Droughty	0.33			Too acid	0.88
		Depth to bedrock	0.46			Slope	0.96
		Too acid	0.50			Rock fragments	0.97
		Water erosion	0.99				
Montevallo-----	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Organic matter content low	0.12			Slope	0.96
		Too acid	0.54			Too acid	0.98
AmD: Apison-----	72	Fair		Poor		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.33	Slope	0.68	Depth to bedrock	0.46
		Depth to bedrock	0.46			Too acid	0.88
		Too acid	0.50			Rock fragments	0.97
		Water erosion	0.99				
Montevallo-----	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.68	Slope	0.00
		Organic matter content low	0.12			Rock fragments	0.00
		Too acid	0.54			Too acid	0.98
AmE: Apison-----	55	Fair		Poor		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.33	Slope	0.00	Depth to bedrock	0.46
		Depth to bedrock	0.46			Too acid	0.88
		Too acid	0.50			Rock fragments	0.97
		Water erosion	0.99				
Montevallo-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Organic matter content low	0.12			Rock fragments	0.00
		Too acid	0.54			Too acid	0.98

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmF: Apison-----	58	Fair		Poor		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.33	Slope	0.00	Depth to bedrock	0.46
		Depth to bedrock	0.46			Too acid	0.88
		Too acid	0.50			Rock fragments	0.97
		Water erosion	0.99				
Montevallo-----	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Organic matter content low	0.12			Rock fragments	0.00
		Too acid	0.54			Too acid	0.98
Bd: Bloomingdale, drained-----	55	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Low strength	0.00	Too clayey	0.00
		Water erosion	0.99	Shrink-swell	0.87		
Bloomingdale, undrained-----	30	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Low strength	0.00	Too clayey	0.00
		Water erosion	0.99	Shrink-swell	0.87		
Bh: Bloomingdale----	60	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Low strength	0.00	Too clayey	0.00
		Water erosion	0.99	Shrink-swell	0.87		
Hamblen-----	30	Fair		Fair		Fair	
		Organic matter content low	0.18	Wetness depth	0.89	Wetness depth	0.89
		Too acid	0.97			Rock fragments	0.97
CcC: Coghill-----	50	Fair		Poor		Fair	
		Too clayey	0.02	Low strength	0.00	Too clayey	0.01
		Too acid	0.54	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.12
		Organic matter content low	0.60			Slope	0.96
						Too acid	0.98
Corryton-----	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.90	Slope	0.96
		Too acid	0.54			Too acid	0.98

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CcD: Coghill-----	75	Fair Too clayey Too acid Organic matter content low	0.02 0.54 0.60	Poor Low strength Slope Shrink-swell	0.00 0.68 0.87	Poor Slope Too clayey Hard to reclaim (rock fragments) Too acid	0.00 0.01 0.12 0.98
Corryton-----	20	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.54	Poor Low strength Slope Shrink-swell	0.00 0.68 0.90	Poor Too clayey Slope Too acid	0.00 0.00 0.98
CcE: Coghill-----	45	Fair Too clayey Too acid Organic matter content low	0.02 0.54 0.60	Poor Slope Low strength Shrink-swell	0.00 0.00 0.87	Poor Slope Too clayey Hard to reclaim (rock fragments) Too acid	0.00 0.01 0.12 0.98
Corryton-----	30	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.54	Poor Slope Low strength Shrink-swell	0.00 0.00 0.90	Poor Slope Too clayey Too acid	0.00 0.00 0.98
CeB3: Collegedale-----	88	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Poor Low strength Shrink-swell	0.00 0.87	Poor Too clayey Too acid	0.00 0.88
CeC3: Collegedale-----	83	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Poor Low strength Shrink-swell	0.00 0.87	Poor Too clayey Too acid Slope	0.00 0.88 0.99
CeD3: Collegedale-----	88	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Poor Low strength Slope Shrink-swell	0.00 0.76 0.87	Poor Too clayey Slope Too acid	0.00 0.00 0.88
CgB: Collegedale-----	58	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Poor Low strength Shrink-swell	0.00 0.87	Poor Too clayey Too acid	0.00 0.88

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CgB: Loyston-----	25	Poor Too clayey Droughty Depth to bedrock Organic matter content low Water erosion	0.00 0.00 0.00 0.50 0.99	Poor Depth to bedrock	0.00	Poor Too clayey Depth to bedrock Rock fragments	0.00 0.00 0.00
Rock outcrop----	17	Not rated		Not rated		Not rated	
CkC: Collegedale-----	63	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Poor Low strength Shrink-swell	0.00 0.87	Poor Too clayey Too acid Slope	0.00 0.88 0.96
Talbott-----	23	Poor Too clayey Droughty Depth to bedrock Too acid Organic matter content low	0.00 0.19 0.71 0.74 0.88	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.87	Poor Too clayey Depth to bedrock Slope	0.00 0.71 0.96
CkD: Collegedale-----	55	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Poor Low strength Slope Shrink-swell	0.00 0.68 0.87	Poor Too clayey Slope Too acid	0.00 0.00 0.88
Talbott-----	38	Poor Too clayey Droughty Depth to bedrock Too acid Organic matter content low	0.00 0.19 0.71 0.74 0.88	Poor Depth to bedrock Low strength Slope Shrink-swell	0.00 0.00 0.68 0.87	Poor Too clayey Slope Depth to bedrock	0.00 0.00 0.71
CoB: Corryton-----	85	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.54	Poor Low strength Shrink-swell	0.00 0.90	Poor Too clayey Too acid	0.00 0.98
CoC: Corryton-----	85	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.54	Poor Low strength Shrink-swell	0.00 0.90	Poor Too clayey Slope Too acid	0.00 0.96 0.98

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CoD: Corryton-----	85	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.54	Poor Low strength Slope Shrink-swell	0.00 0.68 0.90	Poor Too clayey Slope Too acid	0.00 0.00 0.98
CtB: Corryton-----	60	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.54	Poor Low strength Shrink-swell	0.00 0.90	Poor Too clayey Too acid	0.00 0.98
Townley-----	35	Poor Too clayey Organic matter content low Droughty Depth to bedrock Too acid Water erosion	0.00 0.12 0.31 0.35 0.50 0.99	Poor Low strength Depth to bedrock Shrink-swell	0.00 0.00 0.87	Poor Too clayey Depth to bedrock Rock fragments Too acid	0.00 0.35 0.50 0.59
CtC: Corryton-----	73	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.54	Poor Low strength Shrink-swell	0.00 0.90	Poor Too clayey Slope Too acid	0.00 0.96 0.98
Townley-----	22	Poor Too clayey Organic matter content low Droughty Depth to bedrock Too acid Water erosion	0.00 0.12 0.31 0.35 0.50 0.99	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.87	Poor Too clayey Depth to bedrock Rock fragments Too acid Slope	0.00 0.35 0.50 0.59 0.96
CzC: Corryton-----	50	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.54	Poor Low strength Shrink-swell	0.00 0.90	Poor Too clayey Too acid	0.00 0.98
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
CzD: Corryton-----	50	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.54	Poor Low strength Slope Shrink-swell	0.00 0.68 0.90	Poor Too clayey Slope Too acid	0.00 0.00 0.98
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DeB: Dewey-----	90	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Fair Low strength Shrink-swell	0.10 0.87	Poor Too clayey Too acid	0.00 0.88
DeC2: Dewey-----	68	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Fair Low strength Shrink-swell	0.10 0.87	Poor Too clayey Too acid Slope	0.00 0.88 0.96
DeD2: Dewey-----	88	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Fair Low strength Slope Shrink-swell	0.10 0.68 0.87	Poor Too clayey Slope Too acid	0.00 0.00 0.88
DeE2: Dewey-----	85	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Poor Slope Low strength Shrink-swell	0.00 0.10 0.87	Poor Slope Too clayey Too acid	0.00 0.00 0.88
DgE3: Dewey-----	45	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Poor Slope Low strength Shrink-swell	0.00 0.10 0.87	Poor Slope Too clayey Too acid	0.00 0.00 0.88
Coghill-----	25	Fair Too clayey Too acid Organic matter content low	0.02 0.54 0.60	Poor Slope Low strength Shrink-swell	0.00 0.00 0.87	Poor Slope Too clayey Hard to reclaim (rock fragments) Too acid	0.00 0.01 0.12 0.98
DwD: Dewey-----	47	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Fair Low strength Shrink-swell Slope	0.10 0.87 0.98	Poor Too clayey Slope Too acid	0.00 0.00 0.88
Etowah-----	42	Fair Organic matter content low Too acid Too clayey	0.12 0.50 0.82	Poor Low strength Slope	0.00 0.98	Poor Slope Too clayey Too acid Rock fragments	0.00 0.48 0.88 0.97

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DwE: Dewey-----	47	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Poor Slope Low strength Shrink-swell	0.00 0.10 0.87	Poor Slope Too clayey Too acid	0.00 0.00 0.88
Etowah-----	42	Fair Organic matter content low Too acid Too clayey	0.12 0.50 0.82	Poor Low strength Slope	0.00 0.00	Poor Slope Too clayey Too acid Rock fragments	0.00 0.48 0.88 0.97
DyC: Dewey-----	50	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Fair Low strength Shrink-swell	0.10 0.87	Poor Too clayey Too acid	0.00 0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DyD: Dewey-----	50	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.50	Fair Low strength Slope Shrink-swell	0.10 0.68 0.87	Poor Too clayey Slope Too acid	0.00 0.00 0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated		Not rated	
EmB: Emory-----	83	Fair Too acid Organic matter content low Water erosion	0.74 0.88 0.99	Poor Low strength	0.00	Good	
EmC: Emory-----	83	Fair Too acid Organic matter content low Water erosion	0.74 0.88 0.99	Poor Low strength	0.00	Fair Slope	0.96
EtB: Etowah-----	93	Fair Organic matter content low Too acid Too clayey	0.12 0.50 0.82	Poor Low strength	0.00	Fair Too clayey Too acid Rock fragments	0.48 0.88 0.97

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
EvB: Etowah-----	55	Fair Organic matter content low Too clayey Too acid	0.12 0.12 0.50	Poor Low strength	0.00	Fair Too clayey Too acid Rock fragments	0.07 0.88 0.97
Minvale-----	30	Fair Organic matter content low Too acid Too clayey	0.12 0.50 0.68	Good		Poor Rock fragments Too clayey Hard to reclaim (rock fragments) Too acid	0.00 0.39 0.50 0.88
FuC2: Fullerton-----	90	Fair Organic matter content low Too acid	0.12 0.50	Fair Low strength Shrink-swell	0.10 0.96	Poor Rock fragments Hard to reclaim (rock fragments) Too acid Slope	0.00 0.50 0.88 0.96
FuD2: Fullerton-----	90	Fair Organic matter content low Too acid	0.12 0.50	Fair Low strength Slope Shrink-swell	0.10 0.68 0.96	Poor Slope Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.00 0.50 0.88
FuE2: Fullerton-----	90	Fair Organic matter content low Too acid	0.12 0.50	Poor Slope Low strength Shrink-swell	0.00 0.10 0.96	Poor Slope Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.00 0.50 0.88
FvC: Fullerton-----	53	Fair Organic matter content low Too acid	0.12 0.50	Fair Low strength Shrink-swell	0.10 0.96	Poor Rock fragments Hard to reclaim (rock fragments) Too acid Slope	0.00 0.50 0.88 0.96
Minvale-----	38	Fair Organic matter content low Too acid Too clayey	0.12 0.50 0.68	Good		Poor Rock fragments Too clayey Hard to reclaim (rock fragments) Too acid Slope	0.00 0.39 0.50 0.88 0.96
FzC: Fullerton-----	50	Fair Organic matter content low Too acid	0.12 0.50	Fair Low strength Shrink-swell	0.10 0.96	Poor Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.50 0.88

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FzC: Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD: Fullerton-----	50	Fair		Fair		Poor	
		Organic matter content low	0.12	Low strength	0.10	Slope	0.00
		Too acid	0.50	Slope	0.68	Rock fragments	0.00
				Shrink-swell	0.96	Hard to reclaim (rock fragments)	0.50
						Too acid	0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
He: Heiskell-----	75	Fair		Fair		Fair	
		Organic matter content low	0.50	Wetness depth	0.89	Too clayey	0.44
		Too clayey	0.68			Wetness depth	0.89
		Too acid	0.97			Rock fragments	0.98
HeB: Heiskell-----	70	Fair		Fair		Fair	
		Organic matter content low	0.50	Wetness depth	0.89	Too clayey	0.44
		Too clayey	0.68			Wetness depth	0.89
		Too acid	0.97			Rock fragments	0.98
LoC: Loyston-----	70	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.00			Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Organic matter content low	0.50			Slope	0.96
		Water erosion	0.99				
Rock outcrop----	30	Not rated		Not rated		Not rated	
LoE: Loyston-----	70	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Too clayey	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Water erosion	0.99				
LrF: Loyston-----	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Too clayey	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Water erosion	0.99				
		Stone content	0.99				

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LrF: Nonaburg-----	28	Poor Droughty Depth to bedrock Too clayey Organic matter content low	0.00 0.00 0.00 0.12	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Depth to bedrock Too clayey Rock fragments	0.00 0.00 0.00 0.28
Rock outcrop----	15	Not rated		Not rated		Not rated	
LtC: Loyston-----	33	Poor Too clayey Droughty Depth to bedrock Organic matter content low Water erosion	0.00 0.00 0.00 0.50 0.99	Poor Depth to bedrock	0.00	Poor Too clayey Depth to bedrock Rock fragments	0.00 0.00 0.00
Talbott-----	23	Poor Too clayey Droughty Depth to bedrock Too acid Organic matter content low	0.00 0.19 0.71 0.74 0.88	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.87	Poor Too clayey Depth to bedrock	0.00 0.71
Rock outcrop----	22	Not rated		Not rated		Not rated	
LtD: Loyston-----	33	Poor Too clayey Droughty Depth to bedrock Organic matter content low Water erosion	0.00 0.00 0.00 0.50 0.99	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Too clayey Depth to bedrock Rock fragments	0.00 0.00 0.00 0.00
Talbott-----	23	Poor Too clayey Droughty Depth to bedrock Too acid Organic matter content low	0.00 0.19 0.71 0.74 0.88	Poor Depth to bedrock Low strength Slope Shrink-swell	0.00 0.00 0.00 0.87	Poor Slope Too clayey Depth to bedrock	0.00 0.00 0.71
Rock outcrop----	22	Not rated		Not rated		Not rated	
MfD: Minvale-----	70	Fair Organic matter content low Too acid Too clayey	0.12 0.50 0.68	Fair Slope	0.68	Poor Rock fragments Slope Too clayey Hard to reclaim (rock fragments) Too acid	0.00 0.00 0.39 0.50 0.88

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MfD: Fullerton-----	23	Fair Organic matter content low Too acid	0.12 0.68 0.50	Fair Low strength Slope Shrink-swell	0.10 0.68 0.96	Poor Slope Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.00 0.50 0.88
MfE: Minvale-----	48	Fair Organic matter content low Too acid Too clayey	0.12 0.50 0.68	Poor Slope	0.00	Poor Slope Rock fragments Too clayey Hard to reclaim (rock fragments) Too acid	0.00 0.00 0.39 0.50 0.88
Bodine-----	25	Fair Organic matter content low Too acid Droughty Too clayey	0.12 0.50 0.66 0.68	Poor Slope Cobble content	0.00 0.73	Poor Slope Rock fragments Hard to reclaim (rock fragments) Too clayey Too acid	0.00 0.00 0.00 0.39 0.59
Fullerton-----	20	Fair Organic matter content low Too acid	0.12 0.50	Poor Slope Low strength Shrink-swell	0.00 0.10 0.96	Poor Slope Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.00 0.50 0.88
NnD3: Nonaburg-----	60	Poor Droughty Depth to bedrock Too clayey Organic matter content low	0.00 0.00 0.00 0.12	Poor Depth to bedrock Slope	0.00 0.68	Poor Depth to bedrock Too clayey Slope Rock fragments	0.00 0.00 0.00 0.28
NnE3: Nonaburg-----	60	Poor Droughty Depth to bedrock Too clayey Organic matter content low	0.00 0.00 0.00 0.12	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Depth to bedrock Too clayey Rock fragments	0.00 0.00 0.00 0.28
Ph: Pettyjon-----	60	Fair Organic matter content low	0.50	Good		Good	
Hamblen-----	32	Fair Organic matter content low Too acid	0.50 0.97	Fair Wetness depth	0.89	Fair Wetness depth Rock fragments	0.89 0.97

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	
Ro: Rockdell-----	80	Fair Organic matter content low Too acid Cobble content Droughty	0.08 0.54 0.90 0.96	Poor Low strength Cobble content Shrink-swell	0.00 0.92 0.99	Poor Hard to reclaim (rock fragments) Rock fragments Too acid	0.00 0.00 0.98
SaC: Salacoa-----	78	Fair Organic matter content low Too acid	0.12 0.74	Good		Fair Hard to reclaim (rock fragments) Rock fragments Slope	0.88 0.88 0.96
SaD: Salacoa-----	90	Fair Organic matter content low Too acid	0.12 0.74	Fair Slope	0.68	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.88 0.88
SbC: Salacoa-----	75	Fair Organic matter content low Too acid	0.12 0.74	Good		Fair Hard to reclaim (rock fragments) Rock fragments Slope	0.88 0.88 0.96
Apison-----	25	Fair Organic matter content low Depth to bedrock Too acid Droughty Water erosion	0.12 0.46 0.50 0.75 0.99	Poor Depth to bedrock Low strength Cobble content	0.00 0.78 0.99	Fair Rock fragments Depth to bedrock Too acid Slope	0.12 0.46 0.88 0.96
SeC: Salacoa-----	50	Fair Organic matter content low Too acid	0.12 0.74	Good		Fair Hard to reclaim (rock fragments) Rock fragments	0.88 0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
SeD: Salacoa-----	50	Fair Organic matter content low Too acid	0.12 0.74	Fair Slope	0.68	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.88 0.88
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ShB: Shady-----	88	Fair Organic matter content low Too acid	0.12 0.54	Good		Fair Rock fragments Too acid	0.97 0.98
ShC: Shady-----	93	Fair Organic matter content low Too acid	0.12 0.54	Good		Fair Slope Rock fragments Too acid	0.96 0.97 0.98
So: Shady-----	75	Fair Organic matter content low Too acid	0.12 0.54	Good		Fair Rock fragments Too acid	0.97 0.98
Whitwell-----	25	Fair Too acid	0.32	Fair Wetness depth	0.89	Fair Too acid Wetness depth Rock fragments	0.88 0.89 0.97
St: Steadman-----	68	Fair Organic matter content low Water erosion	0.88 0.99	Poor Low strength Wetness depth	0.00 0.76	Fair Wetness depth	0.76
SwB: Swafford-----	80	Fair Too acid Organic matter content low Water erosion	0.54 0.88 0.99	Fair Wetness depth Low strength	0.76 0.78	Fair Wetness depth Too acid	0.76 0.98
SwC: Swafford-----	80	Fair Too acid Organic matter content low Water erosion	0.54 0.88 0.99	Fair Wetness depth Low strength	0.76 0.78	Fair Wetness depth Slope Too acid	0.76 0.96 0.98
TbC2: Talbott-----	40	Poor Too clayey Droughty Depth to bedrock Too acid Organic matter content low	0.00 0.19 0.71 0.74 0.88	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.87	Poor Too clayey Slope Depth to bedrock	0.00 0.16 0.71
Rock outcrop----	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Poor Too clayey Organic matter content low Too acid Water erosion	0.00 0.12 0.74 0.90	Poor Low strength Depth to bedrock Shrink-swell	0.00 0.68 0.87	Poor Too clayey Slope Rock fragments	0.00 0.16 0.97

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Tc: Toccoa-----	90	Fair		Good		Good	
		Organic matter content low	0.50				
		Too acid	0.84				
ToC: Townley-----	100	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Depth to bedrock	0.35
		Droughty	0.31	Shrink-swell	0.87	Rock fragments	0.50
		Depth to bedrock	0.35			Too acid	0.59
		Too acid	0.50			Slope	0.96
		Water erosion	0.99				
TsD: Townley-----	50	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Slope	0.00
		Droughty	0.31	Slope	0.82	Depth to bedrock	0.35
		Depth to bedrock	0.35	Shrink-swell	0.87	Rock fragments	0.50
		Too acid	0.50			Too acid	0.59
		Water erosion	0.99				
Loyston-----	25	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.00	Slope	0.82	Depth to bedrock	0.00
		Depth to bedrock	0.00			Slope	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Water erosion	0.99				
TvD: Townley-----	55	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Slope	0.00
		Droughty	0.31	Shrink-swell	0.87	Depth to bedrock	0.35
		Depth to bedrock	0.35	Slope	0.98	Rock fragments	0.50
		Too acid	0.50			Too acid	0.59
		Water erosion	0.99				
Montevallo-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.98	Depth to bedrock	0.00
		Organic matter content low	0.12			Slope	0.00
		Too acid	0.54			Too acid	0.98
TvE, TvF: Townley-----	55	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Too clayey	0.00
		Droughty	0.31	Low strength	0.00	Depth to bedrock	0.35
		Depth to bedrock	0.35	Shrink-swell	0.87	Rock fragments	0.50
		Too acid	0.50			Too acid	0.59
		Water erosion	0.99				

Soil Survey of Knox County, Tennessee

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TvE, TvF: Montevallo-----	35	Poor Droughty Depth to bedrock Organic matter content low Too acid	0.00 0.00 0.12 0.54	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Rock fragments Depth to bedrock Too acid	0.00 0.00 0.00 0.98
Ur: Urban land-----	90	Not rated		Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Poor Droughty Depth to bedrock Too acid Cobble content	0.00 0.10 0.54 0.56	Poor Depth to bedrock Slope Cobble content	0.00 0.00 0.15	Poor Slope Rock fragments Depth to bedrock Too acid	0.00 0.00 0.10 0.98
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Poor Too clayey Too acid Organic matter content low	0.00 0.50 0.50	Fair Low strength	0.10	Poor Too clayey Too acid	0.00 0.88
WeC: Waynesboro-----	93	Poor Too clayey Too acid Organic matter content low	0.00 0.50 0.50	Fair Low strength	0.10	Poor Too clayey Too acid Slope	0.00 0.88 0.96
WeD2: Waynesboro-----	85	Poor Too clayey Too acid Organic matter content low	0.00 0.50 0.50	Fair Low strength Slope	0.10 0.68	Poor Slope Too clayey Too acid	0.00 0.00 0.88
WsC: Waynesboro-----	80	Poor Too clayey Too acid Organic matter content low	0.00 0.50 0.50	Fair Low strength	0.10	Poor Too clayey Too acid Slope	0.00 0.88 0.96
WwB: Whitwell-----	78	Fair Too acid Organic matter content low	0.32 0.50	Fair Wetness depth	0.89	Fair Too acid Wetness depth Rock fragments	0.88 0.89 0.97

Soil Survey of Knox County, Tennessee

Table 14.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmC:							
Apison-----	50	Somewhat limited Seepage Depth to bedrock	0.72 0.13	Very limited Piping Thin layer	1.00 0.88	Very limited Depth to water	1.00
Montevallo-----	25	Somewhat limited Depth to bedrock	0.50	Very limited Thin layer	1.00	Very limited Depth to water	1.00
AmD:							
Apison-----	72	Somewhat limited Seepage Depth to bedrock Slope	0.72 0.13 0.10	Very limited Piping Thin layer	1.00 0.88	Very limited Depth to water	1.00
Montevallo-----	20	Somewhat limited Depth to bedrock Slope	0.50 0.10	Very limited Thin layer	1.00	Very limited Depth to water	1.00
AmE:							
Apison-----	55	Somewhat limited Seepage Slope Depth to bedrock	0.72 0.50 0.13	Very limited Piping Thin layer	1.00 0.88	Very limited Depth to water	1.00
Montevallo-----	35	Somewhat limited Depth to bedrock Slope	0.50 0.50	Very limited Thin layer	1.00	Very limited Depth to water	1.00
AmF:							
Apison-----	58	Very limited Slope Seepage Depth to bedrock	1.00 0.72 0.13	Very limited Piping Thin layer	1.00 0.88	Very limited Depth to water	1.00
Montevallo-----	25	Very limited Slope Depth to bedrock	1.00 0.50	Very limited Thin layer	1.00	Very limited Depth to water	1.00
Bd:							
Bloomingtondale, drained-----	55	Not limited		Very limited Depth to saturated zone	1.00	Very limited Slow refill Cutbanks cave	1.00 0.10
Bloomingtondale, undrained-----	30	Not limited		Very limited Depth to saturated zone Ponding	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
Bh:							
Bloomingtondale----	60	Not limited		Very limited Depth to saturated zone	1.00	Very limited Slow refill Cutbanks cave	1.00 0.10

Soil Survey of Knox County, Tennessee

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bh: Hamblen-----	30	Somewhat limited Seepage	0.72	Very limited Piping Depth to saturated zone	1.00 0.86	Somewhat limited Slow refill Cutbanks cave Depth to saturated zone	0.28 0.10 0.06
CcC: Coghill-----	50	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
Corryton-----	35	Somewhat limited Seepage	0.04	Somewhat limited Hard to pack	0.05	Very limited Depth to water	1.00
CcD: Coghill-----	75	Somewhat limited Seepage Slope	0.72 0.10	Not limited		Very limited Depth to water	1.00
Corryton-----	20	Somewhat limited Slope Seepage	0.10 0.04	Somewhat limited Hard to pack	0.05	Very limited Depth to water	1.00
CcE: Coghill-----	45	Somewhat limited Slope Seepage	0.97 0.72	Not limited		Very limited Depth to water	1.00
Corryton-----	30	Somewhat limited Slope Seepage	0.97 0.04	Somewhat limited Hard to pack	0.05	Very limited Depth to water	1.00
CeB3: Collegedale----	88	Somewhat limited Seepage	0.04	Somewhat limited Hard to pack	0.39	Very limited Depth to water	1.00
CeC3: Collegedale----	83	Somewhat limited Seepage	0.04	Somewhat limited Hard to pack	0.39	Very limited Depth to water	1.00
CeD3: Collegedale----	88	Somewhat limited Slope Seepage	0.09 0.04	Somewhat limited Hard to pack	0.39	Very limited Depth to water	1.00
CgB: Collegedale----	58	Somewhat limited Seepage	0.04	Somewhat limited Hard to pack	0.39	Very limited Depth to water	1.00
Loyston-----	25	Very limited Depth to bedrock	1.00	Very limited Thin layer Piping	1.00 0.29	Very limited Depth to water	1.00
Rock outcrop----	17	Not rated		Not rated		Not rated	
CkC: Collegedale----	63	Somewhat limited Seepage	0.04	Somewhat limited Hard to pack	0.39	Very limited Depth to water	1.00
Talbott-----	23	Somewhat limited Depth to bedrock Seepage	0.81 0.04	Somewhat limited Thin layer Hard to pack	0.81 0.64	Very limited Depth to water	1.00

Soil Survey of Knox County, Tennessee

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CkD: Collegedale-----	55	Somewhat limited Slope Seepage	0.10 0.04	Somewhat limited Hard to pack	0.39	Very limited Depth to water	1.00
Talbott-----	38	Somewhat limited Depth to bedrock Slope Seepage	0.81 0.10 0.04	Somewhat limited Thin layer Hard to pack	0.81 0.64	Very limited Depth to water	1.00
CoB, CoC: Corryton-----	85	Somewhat limited Seepage	0.04	Somewhat limited Hard to pack	0.05	Very limited Depth to water	1.00
CoD: Corryton-----	85	Somewhat limited Slope Seepage	0.10 0.04	Somewhat limited Hard to pack	0.05	Very limited Depth to water	1.00
CtB: Corryton-----	60	Somewhat limited Seepage	0.04	Somewhat limited Hard to pack	0.05	Very limited Depth to water	1.00
Townley-----	35	Somewhat limited Depth to bedrock	0.17	Somewhat limited Thin layer Hard to pack	0.91 0.03	Very limited Depth to water	1.00
CtC: Corryton-----	73	Somewhat limited Seepage	0.04	Somewhat limited Hard to pack	0.05	Very limited Depth to water	1.00
Townley-----	22	Somewhat limited Depth to bedrock	0.17	Somewhat limited Thin layer Hard to pack	0.91 0.03	Very limited Depth to water	1.00
CzC: Corryton-----	50	Somewhat limited Seepage	0.04	Somewhat limited Hard to pack	0.05	Very limited Depth to water	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
CzD: Corryton-----	50	Somewhat limited Slope Seepage	0.10 0.04	Somewhat limited Hard to pack	0.05	Very limited Depth to water	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DeB: Dewey-----	90	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.45	Very limited Depth to water	1.00
DeC2: Dewey-----	68	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.41	Very limited Depth to water	1.00

Soil Survey of Knox County, Tennessee

Table 14.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DeD2: Dewey-----	88	Somewhat limited Seepage Slope	0.72 0.10	Somewhat limited Piping	0.41	Very limited Depth to water	1.00
DeE2: Dewey-----	85	Somewhat limited Seepage Slope	0.72 0.64	Somewhat limited Piping	0.41	Very limited Depth to water	1.00
DgE3: Dewey-----	45	Somewhat limited Slope Seepage	0.94 0.72	Somewhat limited Piping	0.36	Very limited Depth to water	1.00
Coghill-----	25	Somewhat limited Slope Seepage	0.94 0.72	Not limited		Very limited Depth to water	1.00
DwD: Dewey-----	47	Somewhat limited Seepage Slope	0.72 0.04	Somewhat limited Piping	0.41	Very limited Depth to water	1.00
Etowah-----	42	Somewhat limited Seepage Slope	0.72 0.04	Somewhat limited Piping	0.09	Very limited Depth to water	1.00
DwE: Dewey-----	47	Somewhat limited Seepage Slope	0.72 0.41	Somewhat limited Piping	0.41	Very limited Depth to water	1.00
Etowah-----	42	Somewhat limited Seepage Slope	0.72 0.41	Somewhat limited Piping	0.09	Very limited Depth to water	1.00
DyC: Dewey-----	50	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.41	Very limited Depth to water	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
DyD: Dewey-----	50	Somewhat limited Seepage Slope	0.72 0.10	Somewhat limited Piping	0.41	Very limited Depth to water	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
Dz: Dumps-----	90	Not rated		Not rated		Not rated	
EmB, EmC: Emory-----	83	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.98	Very limited Depth to water	1.00

Soil Survey of Knox County, Tennessee

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
EtB: Etowah-----	93	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.09	Very limited Depth to water	1.00
EvB: Etowah-----	55	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.09	Very limited Depth to water	1.00
Minvale-----	30	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.64	Very limited Depth to water	1.00
FuC2: Fullerton-----	90	Somewhat limited Seepage	0.72	Somewhat limited Hard to pack	0.11	Very limited Depth to water	1.00
FuD2: Fullerton-----	90	Somewhat limited Seepage Slope	0.72 0.10	Somewhat limited Hard to pack	0.11	Very limited Depth to water	1.00
FuE2: Fullerton-----	90	Somewhat limited Slope Seepage	0.94 0.72	Somewhat limited Hard to pack	0.11	Very limited Depth to water	1.00
FvC: Fullerton-----	53	Somewhat limited Seepage	0.72	Somewhat limited Hard to pack	0.04	Very limited Depth to water	1.00
Minvale-----	38	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.64	Very limited Depth to water	1.00
FzC: Fullerton-----	50	Somewhat limited Seepage	0.72	Somewhat limited Hard to pack	0.04	Very limited Depth to water	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
FzD: Fullerton-----	50	Somewhat limited Seepage Slope	0.72 0.10	Somewhat limited Hard to pack	0.04	Very limited Depth to water	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
He: Heiskell-----	75	Somewhat limited Seepage	0.03	Very limited Piping Depth to saturated zone	0.99 0.86	Somewhat limited Slow refill Cutbanks cave Depth to saturated zone	0.97 0.10 0.06
HeB: Heiskell-----	70	Somewhat limited Seepage	0.03	Very limited Piping Depth to saturated zone	0.99 0.86	Somewhat limited Slow refill Cutbanks cave Depth to saturated zone	0.97 0.10 0.06

Soil Survey of Knox County, Tennessee

Table 14.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LoC: Loyston-----	70	Very limited Depth to bedrock	1.00	Very limited Thin layer Piping	1.00 0.29	Very limited Depth to water	1.00
Rock outcrop----	30	Not rated		Not rated		Not rated	
LoE: Loyston-----	70	Very limited Depth to bedrock Slope	1.00 0.97	Very limited Thin layer Piping	1.00 0.29	Very limited Depth to water	1.00
LrF: Loyston-----	35	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Thin layer Piping Large stones content	1.00 0.29 0.01	Very limited Depth to water	1.00
Nonaburg-----	28	Very limited Slope Depth to bedrock	1.00 0.84	Very limited Thin layer	1.00	Very limited Depth to water	1.00
Rock outcrop----	15	Not rated		Not rated		Not rated	
LtC: Loyston-----	33	Very limited Depth to bedrock	1.00	Very limited Thin layer Piping	1.00 0.29	Very limited Depth to water	1.00
Talbott-----	23	Somewhat limited Depth to bedrock Seepage	0.81 0.04	Somewhat limited Thin layer Hard to pack	0.81 0.64	Very limited Depth to water	1.00
Rock outcrop----	22	Not rated		Not rated		Not rated	
LtD: Loyston-----	33	Very limited Depth to bedrock Slope	1.00 0.64	Very limited Thin layer Piping	1.00 0.29	Very limited Depth to water	1.00
Talbott-----	23	Somewhat limited Depth to bedrock Slope Seepage	0.81 0.64 0.04	Somewhat limited Thin layer Hard to pack	0.81 0.64	Very limited Depth to water	1.00
Rock outcrop----	22	Not rated		Not rated		Not rated	
MfD: Minvale-----	70	Somewhat limited Seepage Slope	0.72 0.10	Somewhat limited Piping	0.64	Very limited Depth to water	1.00
Fullerton-----	23	Somewhat limited Seepage Slope	0.72 0.10	Somewhat limited Hard to pack	0.04	Very limited Depth to water	1.00
MfE: Minvale-----	48	Somewhat limited Slope Seepage	0.82 0.72	Somewhat limited Piping	0.64	Very limited Depth to water	1.00

Soil Survey of Knox County, Tennessee

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MfE: Bodine-----	25	Very limited Seepage Slope	1.00 0.82	Somewhat limited Seepage	0.12	Very limited Depth to water	1.00
Fullerton-----	20	Somewhat limited Slope Seepage	0.82 0.72	Somewhat limited Hard to pack	0.04	Very limited Depth to water	1.00
NnD3: Nonaburg-----	60	Somewhat limited Depth to bedrock Slope	0.84 0.10	Very limited Thin layer	1.00	Very limited Depth to water	1.00
NnE3: Nonaburg-----	60	Somewhat limited Depth to bedrock Slope	0.84 0.82	Very limited Thin layer	1.00	Very limited Depth to water	1.00
Ph: Pettyjon-----	60	Somewhat limited Seepage	0.72	Very limited Piping	1.00	Very limited Depth to water	1.00
Hamblen-----	32	Somewhat limited Seepage	0.72	Very limited Piping Depth to saturated zone	1.00 0.86	Somewhat limited Slow refill Cutbanks cave Depth to saturated zone	0.28 0.10 0.06
Pz: Pits, mines, and dumps-----	92	Not rated		Not rated		Not rated	
Ro: Rockdell-----	80	Very limited Seepage	1.00	Somewhat limited Seepage	0.04	Very limited Cutbanks cave Depth to saturated zone Slow refill	1.00 0.89 0.28
SaC: Salacoa-----	78	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
SaD: Salacoa-----	90	Somewhat limited Seepage Slope	0.72 0.10	Not limited		Very limited Depth to water	1.00
SbC: Salacoa-----	75	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
Apison-----	25	Somewhat limited Seepage Depth to bedrock	0.72 0.13	Very limited Piping Thin layer	1.00 0.88	Very limited Depth to water	1.00
SeC: Salacoa-----	50	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Knox County, Tennessee

Table 14.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SeD: Salacoa-----	50	Somewhat limited Seepage Slope	0.72 0.10	Not limited		Very limited Depth to water	1.00
Udorthents-----	25	Not rated		Not rated		Not rated	
Urban land-----	20	Not rated		Not rated		Not rated	
ShB: Shady-----	88	Somewhat limited Seepage	0.72	Very limited Piping	1.00	Very limited Depth to water	1.00
ShC: Shady-----	93	Somewhat limited Seepage	0.72	Very limited Piping	1.00	Very limited Depth to water	1.00
So: Shady-----	75	Somewhat limited Seepage	0.72	Very limited Piping	1.00	Very limited Depth to water	1.00
Whitwell-----	25	Somewhat limited Seepage	0.72	Very limited Piping Depth to saturated zone	1.00 0.86	Somewhat limited Slow refill Cutbanks cave Depth to saturated zone	0.28 0.10 0.06
St: Steadman-----	68	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.95 0.68	Somewhat limited Slow refill Cutbanks cave Depth to saturated zone	0.28 0.10 0.02
SwB, SwC: Swafford-----	80	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.98 0.95	Somewhat limited Slow refill Cutbanks cave Depth to saturated zone	0.28 0.10 0.02
TbC2: Talbott-----	40	Somewhat limited Depth to bedrock Seepage Slope	0.81 0.04 0.01	Somewhat limited Thin layer Hard to pack	0.81 0.64	Very limited Depth to water	1.00
Rock outcrop----	35	Not rated		Not rated		Not rated	
Bradyville-----	25	Somewhat limited Depth to bedrock Seepage Slope	0.08 0.04 0.01	Somewhat limited Hard to pack Thin layer	0.64 0.08	Very limited Depth to water	1.00
Tc: Toccoa-----	90	Very limited Seepage	1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
ToC: Townley-----	100	Somewhat limited Depth to bedrock	0.17	Somewhat limited Thin layer Hard to pack	0.91 0.03	Very limited Depth to water	1.00

Soil Survey of Knox County, Tennessee

Table 14.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TsD: Townley-----	50	Somewhat limited Depth to bedrock Slope	0.17 0.08	Somewhat limited Thin layer Hard to pack	0.91 0.03	Very limited Depth to water	1.00
Loyston-----	25	Very limited Depth to bedrock Slope	1.00 0.08	Very limited Thin layer Piping	1.00 0.29	Very limited Depth to water	1.00
TvD: Townley-----	55	Somewhat limited Depth to bedrock Slope	0.17 0.04	Somewhat limited Thin layer Hard to pack	0.91 0.03	Very limited Depth to water	1.00
Montevallo-----	35	Somewhat limited Depth to bedrock Slope	0.50 0.04	Very limited Thin layer	1.00	Very limited Depth to water	1.00
TvE: Townley-----	55	Somewhat limited Slope Depth to bedrock	0.41 0.17	Somewhat limited Thin layer Hard to pack	0.91 0.03	Very limited Depth to water	1.00
Montevallo-----	35	Somewhat limited Depth to bedrock Slope	0.50 0.41	Very limited Thin layer	1.00	Very limited Depth to water	1.00
TvF: Townley-----	55	Somewhat limited Slope Depth to bedrock	0.99 0.17	Somewhat limited Thin layer Hard to pack	0.91 0.03	Very limited Depth to water	1.00
Montevallo-----	35	Somewhat limited Slope Depth to bedrock	0.99 0.50	Very limited Thin layer	1.00	Very limited Depth to water	1.00
Ur: Urban land-----	90	Not rated		Not rated		Not rated	
Uu: Urban land-----	70	Not rated		Not rated		Not rated	
Udorthents-----	30	Not rated		Not rated		Not rated	
W: Water-----	100	Not rated		Not rated		Not rated	
WaF: Wallen-----	80	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.98	Somewhat limited Thin layer Large stones content	0.98 0.44	Very limited Depth to water	1.00
Rock outcrop----	15	Not rated		Not rated		Not rated	
WeB: Waynesboro-----	90	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
WeC: Waynesboro-----	93	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00

Soil Survey of Knox County, Tennessee

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WeD2: Waynesboro-----	85	Somewhat limited Seepage Slope	0.72 0.10	Somewhat limited Piping	0.06	Very limited Depth to water	1.00
WsC: Waynesboro-----	80	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.08	Very limited Depth to water	1.00
WwB: Whitwell-----	78	Somewhat limited Seepage	0.72	Very limited Piping Depth to saturated zone	1.00 0.86	Somewhat limited Slow refill Cutbanks cave Depth to saturated zone	0.28 0.10 0.06

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties
(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct						Pct
AmC, AmD, AmE, AmF: Apison-----	0-4	Moderately decomposed plant material	GP	A-1	---	---	---	---	---	---	---	---
	4-10	Gravelly silt loam, gravelly loam	CL-ML, ML, CL	A-4	0	0-30	85-100	75-100	65-90	55-85	18-30	3-10
	10-29	Gravelly loam, channery silt loam, gravelly clay loam	CL	A-4, A-6	0	0-30	85-100	75-100	70-95	60-90	20-40	4-18
	29-33	Weathered bedrock			---	---	---	---	---	---	---	---
Montevallo-----	0-1	Moderately decomposed plant material	GP	A-1	---	---	---	---	---	---	---	---
	1-3	Channery silt loam	SC-SM, CL, CL-ML, SC	A-4	0	0	70-100	55-100	45-100	36-86	15-30	NP-10
	3-19	Very channery silt loam, extremely channery silt loam	SC-SM, SC, GC, GC-GM	A-1, A-2, A-4, A-6	0	0	57-100	26-100	23-100	17-84	20-40	2-15
	19-23	Weathered bedrock			---	---	---	---	---	---	---	---
Bd: Bloomingdale, drained-----	0-4	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	95-100	90-100	85-100	60-95	25-40	5-15
	4-60	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0	0	95-100	95-100	90-100	85-95	35-55	12-30
Bloomingdale, undrained-----	0-4	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	95-100	90-100	85-100	60-95	25-40	5-15
	4-60	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	95-100	90-100	85-95	35-55	12-30

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AAASHTO	>10 inches	3-10 inches	4	10	40	200			
											Pct		
<u>In</u>													
Bh: Bloomingdale-----	0-4	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	95-100	90-100	85-100	60-95	25-40	5-15	
	4-60	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	95-100	90-100	85-95	35-55	12-30	
	0-6	Silt loam, loam	ML, CL, CL-ML	A-4, A-6	0	0-2	90-100	80-100	65-95	55-85	22-38	3-14	
	6-67	Clay loam, loam, silt loam	CL-ML, ML, CL	A-4, A-6	0	0-2	80-100	75-100	60-95	55-85	22-40	3-17	
CcC, CcD, CcE: Coghill-----	0-2	Moderately decomposed plant material	GP	A-1	---	---	---	---	---	---	---	---	
	2-6	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML, ML, SM	A-2, A-4	0	0-5	90-100	85-100	70-95	20-55	0-30	NP-7	
	6-34	Clay loam, clay, gravelly sandy clay, gravelly sandy clay loam	CL, CH, SC	A-6, A-7	0	0-5	90-100	85-100	65-100	45-95	35-65	19-40	
	34-60	Chantery clay loam, sandy clay loam, clay	CL, SC	A-6, A-7	0	0-25	90-100	80-100	65-100	45-95	25-45	10-30	
	0-6	Loam, silt loam	ML, CL-ML	A-4	0	0	95-100	80-96	75-94	60-90	0-30	NP-7	
	6-13	Clay loam, silty clay loam	CL	A-6	0	0	95-100	80-95	75-94	50-85	30-40	11-16	
	13-61	Clay, silty clay, clay loam	CL, CH	A-6, A-7	0	0	95-100	80-100	75-100	70-99	35-70	14-40	
CeB3, CeC3, CeD3: Collegedale-----	0-7	Silty clay loam, silty clay, clay	CL	A-6	0	0-2	95-100	90-100	80-95	75-95	24-39	12-28	
	7-62	Clay, silty clay	CH, CL	A-7	0	0-2	95-100	90-100	80-95	75-95	41-75	18-42	

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches Pct	3-10 inches Pct	4	10	40	200		
CgB: Collegedale-----	0-7	Silty clay loam, silty clay, clay	CL	A-6	0	0-2	95-100	90-100	80-95	75-95	24-39	12-28
	7-62	Clay, silty clay	CL, CH	A-7	0	0-2	95-100	90-100	80-95	75-95	41-75	18-42
Loyston-----	0-3	Channery clay, clay loam, fleggy clay	CL-ML, CL	A-4, A-6	0	5-35	77-100	53-85	48-85	37-81	13-31	1-11
	3-10	Channery clay, fleggy silty clay	CL, CH	A-6, A-7-6, A-7	0	5-35	75-100	57-80	51-80	43-76	39-57	16-26
	10-15	Weathered bedrock			---	---	---	---	---	---	---	---
	15-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
CkC, CkD: Collegedale-----	0-7	Silty clay loam, silty clay, clay	CL	A-6	0	0-2	95-100	90-100	80-95	75-95	24-39	12-28
	7-62	Clay, silty clay	CH, CL	A-7	0	0-2	95-100	90-100	80-95	75-95	41-75	18-42
Talbott-----	0-3	Silty clay loam	CL, CH	A-6, A-7	0	0-5	95-100	90-100	85-95	80-95	35-60	12-32
	3-32	Clay, silty clay	CL, CH	A-7	0	0-10	95-100	90-100	85-95	80-95	41-80	20-45
	32-39	Unweathered bedrock			---	---	---	---	---	---	---	---
CoB, CoC, CoD: Corryton-----	0-6	Loam, silt loam	ML, CL-ML	A-4	0	0	95-100	80-96	75-94	60-90	0-30	NP-7
	6-13	Clay loam, silty clay loam	CL	A-6	0	0	95-100	80-95	75-94	50-85	30-40	11-16
	13-61	Clay, silty clay, clay loam	CL, CH	A-6, A-7	0	0	95-100	80-100	75-100	70-99	35-70	14-40

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth <u>In</u>	USDA texture	Classification		Fragments			Percentage passing sieve number--				Liquid limit <u>Pct</u>	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
											Pct		
CtB, CtC: Corryton-----	0-6 6-13	Loam, silt loam Clay loam, silty clay loam	CL-ML, ML CL	A-4 A-6	0 0	0 0	95-100 95-100	80-96 80-95	75-94 75-94	60-90 50-85	0-30 30-40	NP-7 11-16	
	13-61	Clay, silty clay, clay loam	CH, CL	A-6, A-7	0	0	95-100	80-100	75-100	70-99	35-70	14-40	
Townley-----	0-4 4-28 28-50	Silt loam Clay, channery silty clay Weathered bedrock	CL, CL-ML, ML CL, MH, CH, ML	A-4 A-7	0 0	0-2 0-2	80-98 75-95	70-95 65-95	65-90 60-92	50-65 55-90	15-35 40-72	NP-10 14-37	
CzC, CzD: Corryton-----	0-6 6-13	Loam, silt loam Clay loam, silty clay loam	ML, CL-ML CL	A-4 A-6	0 0	0 0	95-100 95-100	80-96 80-95	75-94 75-94	60-90 50-85	0-30 30-40	NP-7 11-16	
	13-61	Clay, silty clay, clay loam	CH, CL	A-6, A-7	0	0	95-100	80-100	75-100	70-99	35-70	14-40	
Udorthents. Urban land.													
DeB: Dewey-----	0-5 5-9	Silt loam, loam Clay loam, silty clay loam	CL, CL-ML CL	A-4, A-6 A-6	0 0	0 0	90-100 95-100	80-100 80-95	75-95 75-94	65-80 50-85	24-30 30-40	5-11 11-16	
	9-66	Clay, silty clay, clay loam	CL	A-6	0	0	90-100	80-100	75-95	70-85	27-40	12-20	
DeC2, DeD2, DeE2: Dewey-----	0-2 2-9	Silt loam, loam Clay loam, silty clay loam	CL, CL-ML CL	A-4, A-6 A-6	0 0	0 0	90-100 95-100	80-100 80-95	75-95 75-94	65-80 50-85	24-30 30-40	5-11 11-16	
	9-66	Clay, silty clay, clay loam	CL	A-6	0	0	90-100	80-100	75-95	70-85	27-40	12-20	

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct						Pct
DgE3: Dewey-----	0-2 2-66	Loam, silt loam Clay, silty clay, clay loam	CL, CL-ML CL	A-4, A-6 A-6	0 0	0 0	90-100 90-100	80-100 80-100	75-95 75-95	65-80 70-85	24-30 27-40	5-11 12-20
Coghill-----	0-4 4-34	Loam, sandy loam Clay loam, clay, gravelly sandy clay, gravelly sandy clay loam	CL-ML, SC-SM, ML, SM CL, SC, CH	A-2, A-4 A-6, A-7	0 0	0-5 0-5	90-100 90-100	85-100 85-100	70-95 65-100	20-55 45-95	0-30 35-65	NP-7 19-40
	34-60	Channery clay loam, sandy clay loam, clay	CL, SC	A-6, A-7	0	0-25	90-100	80-100	65-100	45-95	25-45	10-30
DwD, DwE: Dewey-----	0-2 2-9	Silt loam, loam Clay loam, silty clay loam	CL-ML, CL CL	A-4, A-6 A-6	0 0	0 0	90-100 95-100	80-100 80-95	75-95 75-94	65-80 50-85	24-30 30-40	5-11 11-16
	9-66	Clay, silty clay, clay loam	CL	A-6	0	0	90-100	80-100	75-95	70-85	27-40	12-20
Etowah-----	0-10	Silt loam, loam	CL, SM, ML, SC-SM, SC, CL-ML	A-4	0	0	80-100	75-100	70-95	45-70	20-30	3-10
	10-64	Clay loam, silty clay loam, clay	CL, MH, ML, CH	A-6, A-7	0	0	80-100	75-100	70-95	65-85	39-60	15-25
DyC, DyD: Dewey-----	0-2 2-9	Silt loam, loam Clay loam, silty clay loam	CL, CL-ML CL	A-4, A-6 A-6	0 0	0 0	90-100 95-100	80-100 80-95	75-95 75-94	65-80 50-85	24-30 30-40	5-11 11-16
	9-66	Clay, silty clay, clay loam	CL	A-6	0	0	90-100	80-100	75-95	70-85	27-40	12-20
Udorthents. Urban land.												

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
											Pct		
Dz. Dumps													
EmB, EmC: Emory-----	0-5	Silt loam, silty clay loam	CL, ML, CL-ML	A-4, A-6	0	0-2	95-100	90-100	85-100	80-95	25-40	4-15	
	5-44	Silty clay loam, silt loam	CL, CL-ML, ML	A-4, A-6	0	0-2	95-100	90-100	85-100	80-95	25-40	4-15	
	44-62	Clay, clay loam, silt loam	CL	A-4, A-6, A-7	0	0-2	90-100	75-100	70-100	65-95	25-45	9-20	
EtB: Etawah-----	0-10	Loam, silt loam	CL, CL-ML, ML, SC-SM, SC, SM	A-4	0	0	80-100	75-100	70-95	45-70	20-30	3-10	
	10-64	Clay loam, silty clay loam, clay	CL, MH, ML, CH	A-6, A-7	0	0	80-100	75-100	70-95	65-85	39-60	15-25	
EvB: Etawah-----	0-10	Loam, silt loam	SM, SC, SC-SM, CL, CL-ML, ML, MH, ML, CL, CH	A-4	0	0	80-100	75-100	70-95	45-70	20-30	3-10	
	10-64	Clay loam, silty clay loam, clay	MH, ML, CL, CH	A-6, A-7	0	0	80-100	75-100	70-95	65-85	39-60	15-25	
Minvale-----	0-9	Loam, gravelly silt loam, gravelly silty clay loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0	80-100	75-100	40-70	36-65	20-40	5-15	
	9-60	Gravelly clay loam, very gravelly silty clay loam, gravelly clay	ML, SC, CL, GC	A-4, A-6, A-7	0	0-5	55-80	50-75	40-70	36-65	25-50	7-23	

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
											Pct		
Fu2, FuD2, FuE2: Fullerton-----	<u>In</u> 0-20	Gravelly silt loam, gravelly loam, gravelly silty clay loam, gravelly clay loam	SC, ML, GC, CL	A-2, A-4, A-6, A-7	0	2-18	60-90	45-80	40-75	30-70	29-42	8-17	
	20-60	Gravelly clay, gravelly silty clay	MH, GM, ML, SM	A-2, A-7	0	2-18	60-90	45-80	40-75	30-75	48-78	20-42	
FvC: Fullerton-----	0-20	Gravelly loam, fine sandy loam, gravelly silt loam	SM, SC, SC-SM, CL, GC-GM, CL-ML, GC	A-2, A-4	0	2-15	60-94	45-80	40-75	30-70	18-30	3-10	
	20-60	Gravelly clay, gravelly silty clay	GM, MH, ML, SM	A-2, A-7	0	2-18	60-90	45-80	40-75	30-75	48-78	20-42	
Minvale-----	0-9	Loam, gravelly silt loam, gravelly silty clay loam	GC-GM, GC, CL-ML, CL	A-4, A-6	0	0	80-100	75-100	40-70	36-65	20-40	5-15	
	9-60	Gravelly clay loam, very gravelly silty clay loam, gravelly clay	SC, ML, GC, CL	A-4, A-6, A-7	0	0-5	55-80	50-75	40-70	36-65	25-50	7-23	
FzC, FzD: Fullerton-----	0-20	Gravelly loam, fine sandy loam, gravelly silt loam	CL, CL-ML, GC, GC-GM, SM, SC, SC-SM	A-2, A-4	0	2-15	60-94	45-80	40-75	30-70	18-30	3-10	
	20-60	Gravelly clay, gravelly silty clay	GM, MH, SM, ML	A-2, A-7	0	2-18	60-90	45-80	40-75	30-75	48-78	20-42	
Udorthents.													
Urban land.													

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
											Pct		
He, HeB: Heiskell-----	<u>In</u>												
	0-18	Silt loam, loam	ML, CL, CL-ML	A-4, A-6	0	0	88-100	76-100	65-100	46-90	13-31	1-11	
	18-46	Silty clay loam, clay loam	CL-ML, ML, CL	A-4, A-6	0	0	77-100	76-100	68-100	53-95	13-31	1-11	
LoC: Loyston-----	46-67	Silt loam, silty clay loam, clay loam, clay	MH, CL, CH	A-7-6, A-6, A-7	0	0	75-100	75-100	68-100	53-95	39-57	16-26	
	0-3	Channery clay, clay loam, flaggy clay	CL-ML, CL	A-4, A-6	0	5-35	77-100	53-85	48-85	37-81	13-31	1-11	
	3-10	Channery clay, flaggy silty clay	CL, CH	A-6, A-7-6, A-7	0	5-35	75-100	57-80	51-80	43-76	39-57	16-26	
Rock outcrop. LoE: Loyston-----	10-15	Weathered bedrock			---	---	---	---	---	---	---	---	
	15-39	Unweathered bedrock			---	---	---	---	---	---	---	---	
	0-3	Channery clay, clay loam, flaggy clay	CL-ML, CL	A-4, A-6	0	5-35	77-100	53-85	48-85	37-81	13-31	1-11	
LoF: Loyston-----	3-10	Channery clay, flaggy silty clay	CH, CL	A-6, A-7-6, A-7	0	5-35	75-100	57-80	51-80	43-76	39-57	16-26	
	10-15	Weathered bedrock			---	---	---	---	---	---	---	---	
	15-39	Unweathered bedrock			---	---	---	---	---	---	---	---	
LoF: Loyston-----	0-3	Flaggy clay, channery clay, clay loam	CL, CL-ML	A-4, A-6	11-24	16-42	88-100	82-100	74-100	57-95	13-31	1-11	
	3-10	Channery clay, flaggy silty clay	CL, CH	A-6, A-7-6, A-7	0	5-35	75-100	57-80	51-80	43-76	39-57	16-26	
	10-15	Weathered bedrock			---	---	---	---	---	---	---	---	
15-39	Unweathered bedrock			---	---	---	---	---	---	---	---		

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth <u>In</u>	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches Pct	3-10 inches Pct	4	10	40	200		
LrF: Nonaburg-----	0-3	Channery silt loam, channery silty clay loam	CH, CL	A-6, A-7	0	0-25	90-100	80-95	80-90	75-85	35-65	12-35
	3-10	Channery clay, silty clay, channery clay loam	CH, CL	A-7	0	0	70-100	65-90	60-85	55-80	40-70	22-40
	10-39	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
ltC, ltD: Loyston-----	0-3	Channery clay, clay loam, fleggy clay	CL-ML, CL	A-4, A-6	0	5-35	77-100	53-85	48-85	37-81	13-31	1-11
	3-10	Channery clay, fleggy silty clay	CL, CH	A-6, A-7-6, A-7	0	5-35	75-100	57-80	51-80	43-76	39-57	16-26
	10-15	Weathered bedrock			---	---	---	---	---	---	---	---
	15-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Talbott-----	0-3	Silty clay loam	CH, CL	A-6, A-7	0	0-5	95-100	90-100	85-95	80-95	35-60	12-32
	3-32	Clay, silty clay	CL, CH	A-7	0	0-10	95-100	90-100	85-95	80-95	41-80	20-45
	32-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
MfD: Minvale-----	0-9	Loam, gravelly silt loam, gravelly silty clay loam	GC-GM, GC, CL-ML, CL	A-4, A-6	0	0	80-100	75-100	40-70	36-65	20-40	5-15
	9-60	Gravelly clay loam, very gravelly silty clay loam, gravelly clay	ML, CL, GC, SC	A-4, A-6, A-7	0	0-5	55-80	50-75	40-70	36-65	25-50	7-23

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AAASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
MfD: Fullerton-----	0-20	Gravelly loam, fine sandy loam, gravelly silt loam	CL, SM, GC, SC, SC-SM, GC-GM, CL-ML	A-2, A-4	0	2-15	60-94	45-80	40-75	30-70	18-30	3-10
	20-60	Gravelly clay, gravelly silty clay	GM, MH, ML, SM	A-2, A-7	0	2-18	60-90	45-80	40-75	30-75	48-78	20-42
MfE: Minvale-----	0-9	Loam, gravelly silt loam, gravelly silty clay loam	GC-GM, GC, CL-ML, CL	A-4, A-6	0	0	80-100	75-100	40-70	36-65	20-40	5-15
	9-60	Gravelly clay loam, very gravelly silty clay loam, gravelly clay	SC, ML, GC, CL	A-4, A-6, A-7	0	0-5	55-80	50-75	40-70	36-65	25-50	7-23
Bodine-----	0-1	Highly decomposed plant material	GP	A-1	---	---	---	---	---	---	---	---
	1-16	Extremely gravelly loam, very gravelly loam, very gravelly silt loam	GM, SM, SC-SM, SC, GC-GM, GC	A-1, A-2, A-4, A-6	0	10-35	30-70	20-65	20-55	15-45	20-38	3-15
	16-60	Very gravelly silty clay loam, extremely gravelly clay loam, very gravelly clay	GM, GC, GW-GC, GW-GM, SM, SC	A-2	0	10-35	20-70	15-65	15-45	12-35	26-42	8-16
Fullerton-----	0-20	Gravelly loam, fine sandy loam, gravelly silt loam	CL-ML, GC, GC-GM, SM, SC, CL, SC-SM	A-2, A-4	0	2-15	60-94	45-80	40-75	30-70	18-30	3-10
	20-60	Gravelly clay, gravelly silty clay	ML, SM, MH, GM	A-2, A-7	0	2-18	60-90	45-80	40-75	30-75	48-78	20-42

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASTHO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
NnD3, NnE3: Nonaburg-----	0-3	Channery silt loam, channery silty clay loam	CH, CL	A-6, A-7	0	0-25	90-100	80-95	80-90	75-85	35-65	12-35
	3-10	Channery clay, silty clay, channery clay loam	CH, CL	A-7	0	0	70-100	65-90	60-85	55-80	40-70	22-40
	10-39	Weathered bedrock			---	---	---	---	---	---	---	---
Ph: Pettyjon-----	0-6 6-65	Silt loam, loam Clay loam, loam, silt loam	ML, CL-ML ML, CL-ML	A-4 A-4	0 0	0 0	95-100 95-100	95-100 95-100	90-100 90-100	70-90 70-90	0-30 0-30	NP-7 NP-7
	0-6 6-67	Silt loam, loam Clay loam, loam, silt loam	CL-ML, ML, ML, CL-ML, CL	A-4, A-6 A-4, A-6	0 0	0-2 0-2	90-100 80-100	80-100 75-100	65-95 60-95	55-85 55-85	22-38 22-40	3-14 3-17
Pz. Pits, mines, and dumps												
Ro: Rockdell-----	0-10 10-31	Gravelly loam, cobbly fine sandy loam Very cobbly sandy loam, very gravelly sandy clay loam, extremely gravelly loam, gravelly loam	SM, GC-GM, SC-SM, GM	A-2, A-4	0 0	0-20 0-20	50-75 50-75	50-60 20-60	40-55 20-50	30-49 15-40	15-25 25-40	NP-7 7-15
	31-60	Gravelly clay, very cobbly clay loam	SM, MH, GM	A-7	0	35-70	65-85	55-75	45-70	40-60	70-80	30-40

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
											Pct		
	<u>In</u>												
SaC: Salacoa-----	0-3	Moderately decomposed plant material	GP	A-1	---	---	---	---	---	---	---	---	---
	3-14	Gravelly loam, loam, channery silt loam	ML, CL, SC-SM	A-4, A-6	0	0	88-100	43-69	37-69	26-62	13-31	1-11	1-11
	14-66	Loam, gravelly silt loam, clay loam, channery silty clay loam	ML, SC-SM, CL	A-4	0	5-35	80-100	75-100	37-77	26-73	13-31	1-11	1-11
SaD: Salacoa-----	0-3	Moderately decomposed plant material	GP	A-1	---	---	---	---	---	---	---	---	---
	3-14	Gravelly loam, loam, channery silt loam	ML, CL, SC-SM	A-4, A-6	0	0	88-100	43-69	37-69	26-62	13-31	1-11	1-11
	14-66	Loam, gravelly silt loam, clay loam, channery silty clay loam	CL, ML, SC-SM	A-2-6, A-4	0	5-35	80-100	75-100	37-77	26-73	13-31	1-11	1-11
SbC: Salacoa-----	0-14	Gravelly loam, loam, channery silt loam	ML, SC-SM, CL	A-4, A-6	0	0	88-100	43-69	37-69	26-62	13-31	1-11	1-11
	14-66	Loam, gravelly silt loam, clay loam, channery silty clay loam	CL, ML, SC-SM	A-4	0	5-35	80-100	75-100	37-77	26-73	13-31	1-11	1-11
Apison-----	0-10	Gravelly silt loam, loam	ML, CL-ML, CL	A-4	0	0-30	85-100	75-100	65-90	55-85	18-30	3-10	3-10
	10-29	Very gravelly loam, channery silt loam, gravelly clay loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0-30	85-100	75-100	70-95	60-90	20-40	4-18	4-18
	29-36	Weathered bedrock			---	---	---	---	---	---	---	---	---

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth <u>In</u>	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
SeC, SeD: Salacoa-----	0-14	Gravelly loam, loam, channery silt loam	CL, SC-SM, ML	A-4, A-6	0	0	88-100	43-69	37-69	26-62	13-31	1-11
	14-66	Loam, gravelly silt loam, clay loam, channery silty clay loam	ML, SC-SM, CL	A-4	0	5-35	80-100	75-100	37-77	26-73	13-31	1-11
Udorthents.												
Urban land.												
ShB, ShC: Shady-----	0-8	Loam, fine sandy loam	ML, CL-ML, SM	A-2, A-4	0	0-5	80-100	75-100	60-95	30-75	15-30	NP-7
	8-65	Clay loam, sandy clay loam, loam	CL, CL-ML, SC, ML	A-4, A-6	0	0-5	80-100	75-100	65-100	36-80	20-35	2-15
So: Shady-----	0-8	Loam, fine sandy loam	CL-ML, ML, SM	A-2, A-4	0	0-5	80-100	75-100	60-95	30-75	15-30	NP-7
	8-65	Clay loam, sandy clay loam, loam	CL, SC, CL-ML, ML	A-4, A-6	0	0-5	80-100	75-100	65-100	36-80	20-35	2-15
Whitwell-----	0-16	Loam, silt loam	CL-ML, ML, CL	A-4	0	0-3	80-100	75-100	70-100	55-95	18-28	3-10
	16-47	Clay loam, loam, silt loam	CL, CL-ML, ML, SC	A-4, A-6	0	0-3	80-100	75-100	60-90	40-80	18-35	3-15
	47-65	Clay, clay loam, sandy clay loam	CL, SC	A-4, A-6, A-7	0	0-5	90-100	85-100	75-95	45-75	30-41	9-17
St: Steadman-----	0-5	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	95-100	80-100	70-95	20-35	2-15
	5-44	Silty clay loam, silt loam, loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	70-95	25-40	4-18
	44-65	Silty clay loam, silty clay	CH, CL	A-6, A-7	0	0	100	95-100	90-100	85-95	35-55	12-30

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	<u>In</u>											
SwB, SwC: Swafford-----	0-3 3-17	Silt loam, loam Clay loam, loam, silt loam	ML, CL, CL-ML CL, CL-ML	A-4, A-6 A-4, A-6	0 0	0-2 0	90-100 90-100	80-100 85-100	65-95 75-100	55-85 55-85	22-38 25-40	3-14 6-16
	17-42	Clay loam, loam, silt loam	CL-ML, CL	A-4, A-6	0	0	90-100	85-100	75-100	55-85	25-40	6-16
	42-60	Clay loam, sandy clay loam, loam	CL, SC, SC-SM, CL-ML	A-4, A-6	0	0	90-100	85-100	70-90	40-80	25-40	6-16
TbC2: Talbott-----	0-3 3-32 32-39	Silty clay loam Clay, silty clay Unweathered bedrock	CH, CL CL, CH	A-6, A-7 A-7	0 0	0-5 0-10	95-100 95-100	90-100 90-100	85-95 85-95	80-95 80-95	35-60 41-80	12-32 20-45
Rock outcrop.												
Bradyville-----	0-3 3-51 51-59	Silt loam Silty clay, clay Unweathered bedrock	ML, CL-ML, CL CH, MH	A-4, A-6 A-7	0 0	0-5 0-5	80-100 80-100	75-100 75-100	70-95 65-90	65-90 60-85	15-35 52-70	3-15 26-40
Tc: Toccoa-----	0-4 4-65	Fine sandy loam, sandy loam Sandy loam, loamy sand	ML SM, SC-SM, ML	A-4 A-2, A-4	0 0	0	98-100 95-100	95-100 90-100	75-90 60-100	55-80 30-55	0-30 0-30	NP-4 NP-4
ToC: Townley-----	0-4 4-28 28-50	Silt loam Clay, channery silty clay Weathered bedrock	ML, CL-ML, CL CH, CL, MH, ML	A-4 A-7	0 0	0-2 0-2	80-98 75-95	70-95 65-95	65-90 60-92	50-65 55-90	15-35 40-72	NP-10 14-37

Soil Survey of Knox County, Tennessee

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
TsD: Townley-----	<u>In</u>											
	0-4	Silt loam	CL-ML, ML, CL	A-4	0	0-2	80-98	70-95	65-90	50-65	15-35	NP-10
	4-28	Clay, channery silty clay	CH, CL, MH, ML	A-7	0	0-2	75-95	65-95	60-92	55-90	40-72	14-37
	28-50	Weathered bedrock			---	---	---	---	---	---	---	---
	0-3	Channery clay, clay loam, fleggy clay	CL, CL-ML	A-4, A-6	0	5-35	77-100	53-85	48-85	37-81	13-31	1-11
	3-10	Channery clay, fleggy silty clay	CH, CL	A-6, A-7-6, A-7	0	5-35	75-100	57-80	51-80	43-76	39-57	16-26
	10-15	Weathered bedrock			---	---	---	---	---	---	---	---
	15-39	Unweathered bedrock			---	---	---	---	---	---	---	---
TvD, TvE, TvF: Townley-----	0-4	Silt loam	CL-ML, CL, ML	A-4	0	0-2	80-98	70-95	65-90	50-65	15-35	NP-10
	4-28	Clay, channery silty clay	CH, CL, MH, ML	A-7	0	0-2	75-95	65-95	60-92	55-90	40-72	14-37
	28-50	Weathered bedrock			---	---	---	---	---	---	---	---
	0-3	Channery silt loam	CL, CL-ML, SC-SM, SC	A-4	0	0-5	60-88	50-75	45-70	40-65	15-30	NP-10
	3-19	Very channery silt loam, extremely channery silt loam	SC-SM, SC, GC, GC-GM	A-1, A-2, A-4, A-6	0	0-5	35-70	23-50	15-45	15-40	20-40	2-15
	19-40	Weathered bedrock			---	---	---	---	---	---	---	---
Ur. Urban land												
Uu. Urban land- Udorthents												
W. Water												

Soil Survey of Knox County, Tennessee

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASTHO	>10 inches	3-10 inches	4	10	40	200		
Waf: Wallen-----	<u>In</u>											
	0-2	Moderately decomposed plant material	GP	A-1	---	---	---	---	---	---	---	---
	2-5	Very cobbly loam, gravelly fine sandy loam	SM, SC-SM, GC-GM, GM	A-1, A-2, A-4	0	25-55	35-65	30-60	20-50	10-40	15-35	NP-10
	5-24	Very cobbly loam, extremely stony fine sandy loam	GM, GC-GM, SM, SC-SM	A-1, A-2, A-4	0	25-55	35-65	30-60	20-50	10-40	15-35	NP-10
	24-30	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
WeB, WeC: Waynesboro-----												
	0-6	Loam, fine sandy loam	ML, CL-ML, CL, SM	A-4	0	0-5	85-100	80-100	70-95	43-70	18-30	2-9
	6-12	Clay loam, sandy clay loam	CL, SC	A-4, A-6, A-7	0	0-5	90-100	85-100	75-95	45-75	30-41	9-17
	12-62	Clay, sandy clay, clay loam	ML, MH, CL	A-4, A-6, A-7	0	0-5	90-100	80-100	70-98	55-75	35-68	9-32
WeD2: Waynesboro-----												
	0-4	Loam, fine sandy loam	SM, ML, CL, CL-ML	A-4	0	0-5	85-100	80-100	70-95	43-70	18-30	2-9
	4-15	Clay loam, sandy clay loam	SC, CL	A-4, A-6, A-7	0	0-5	90-100	85-100	75-95	45-75	30-41	9-17
	15-62	Clay, sandy clay, clay loam	ML, CL, MH	A-4, A-6, A-7	0	0-5	90-100	80-100	70-98	55-75	35-68	9-32
WSC: Waynesboro-----												
	0-5	Cobbly loam	SM, SC-SM, SC, ML	A-2, A-4	0	10-20	75-90	70-90	55-85	30-60	15-30	NP-8
	5-15	Clay loam, sandy clay loam	SC, CL	A-4, A-6, A-7	0	0-5	90-100	85-100	75-95	45-75	30-41	9-17
	15-62	Clay, sandy clay, clay loam	ML, MH, CL	A-4, A-6, A-7	0	0-5	90-100	80-100	70-98	55-75	35-68	9-32

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			Liquid limit	Plas- ticity index	
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40			200
WwB: Whitwell-----	<u>In</u>											
	0-16	Loam, silt loam	CL, ML, CL-ML	A-4	0	0-3	80-100	75-100	70-100	55-95	18-28	3-10
	16-47	Clay loam, loam, silt loam	SC, ML, CL-ML, CL	A-4, A-6	0	0-3	80-100	75-100	60-90	40-80	18-35	3-15
	47-65	Clay, clay loam, sandy clay loam	CL, SC	A-4, A-6, A-7	0	0-5	90-100	85-100	75-95	45-75	30-41	9-17

Table 16.—Physical and Chemical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth		Clay Pct	Moist bulk density g/cc	Permeability (Ksat) In/hr	Available water capacity In/in	Linear extensibility Pct		Organic matter Pct	Erosion factors			Soil reaction
	In	Pct					In/in	Pct		Kw	Kf	T	
AmC, AmD, AmE, AmF: Apison-----	0-10 10-29 29-33	7-27 18-40 ---	1.30-1.45 1.35-1.50 ---	0.6-2 0.6-2 ---	0.15-0.20 0.13-0.18 ---	0.0-2.9 0.0-2.9 ---	1.0-3.0 0.0-0.5 ---	.37 .37 ---	.37 .37 ---	3	4.5-5.5 4.5-5.5 ---		
Montevallo-----	0-3 3-19 19-23	12-27 12-27 ---	1.25-1.45 1.25-1.50 ---	0.6-2 0.6-2 ---	0.09-0.18 0.02-0.12 ---	0.0-2.9 0.0-2.9 ---	0.5-2.0 0.0-0.5 ---	.28 .32 ---	.32 .32 ---	2	4.5-6.0 4.5-6.0 ---		
Bd: Bloomington, drained-----	0-4 4-60	20-35 35-60	1.10-1.30 1.30-1.50	0.6-2 0.06-0.2	0.17-0.22 0.17-0.22	0.0-2.9 3.0-5.9	1.0-3.0 0.1-1.0	.37 .37	.37 .37	5	5.6-8.4 5.6-8.4		
Bloomington, undrained-----	0-4 4-60	20-35 35-60	1.10-1.30 1.30-1.50	0.6-2 0.06-0.2	0.17-0.22 0.17-0.22	0.0-2.9 3.0-5.9	1.0-3.0 0.1-1.0	.37 .37	.37 .37	5	5.6-8.4 5.6-8.4		
Bh: Bloomington-----	0-4 4-60	20-35 35-60	1.10-1.30 1.30-1.50	0.6-2 0.06-0.2	0.17-0.22 0.17-0.22	0.0-2.9 3.0-5.9	1.0-3.0 0.1-1.0	.37 .37	.37 .37	5	5.6-8.4 5.6-8.4		
Hamblen-----	0-6 6-67	15-25 18-35	1.30-1.45 1.30-1.45	0.6-2 0.6-2	0.18-0.20 0.17-0.20	0.0-2.9 0.0-2.9	1.0-3.0 0.1-0.5	.32 .32	.32 .32	5	5.1-7.3 5.1-7.3		
CcC, CcD, CcE: Coghill-----	0-2 2-6 6-34 34-60	---	---	2-6 2-6 0.6-2 0.6-2	---	---	---	---	---	5	---		
Corryton-----	0-6 6-13 13-61	8-27 27-40 35-60	1.30-1.50 1.35-1.55 1.35-1.55	0.6-2 0.6-2 0.2-0.6	0.15-0.24 0.16-0.24 0.12-0.22	0.0-2.9 0.0-2.9 3.0-5.9	0.5-2.0 0.5-1.0 0.0-0.5	.32 .32 .32	.32 .32 .32	5	4.5-6.0 4.5-6.0 4.5-6.0		
CeB3, CeC3, CeD3: Collegedale-----	0-7 7-62	27-45 40-60	1.40-1.60 1.45-1.60	0.2-0.6 0.2-0.6	0.14-0.20 0.12-0.16	3.0-5.9 3.0-5.9	1.0-2.0 0.0-0.5	.28 .24	.28 .24	5	4.5-5.5 4.5-5.5		

Soil Survey of Knox County, Tennessee

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth		Clay Pct	Moist bulk density g/cc	Permeability (Ksat) In/hr	Available water capacity In/in	Linear extensibility Pct		Organic matter Pct	Erosion factors			Soil reaction
	In	Pct					In/in	Pct		Kw	Kf	T	
CgB: Collegedale-----	0-7	27-45	1.40-1.60	0.2-0.6	0.14-0.20	3.0-5.9	1.0-2.0	.28	.28	5	4.5-5.5		
	7-62	40-60	1.45-1.60	0.2-0.6	0.12-0.16	3.0-5.9	0.0-0.5	.24	.24		4.5-5.5		
Loyston-----	0-3	27-60	1.20-1.40	0.6-2	0.15-0.20	3.0-5.9	1.0-4.0	.37	.37	1	6.1-7.8		
	3-10	40-60	1.35-1.60	0.2-0.6	0.08-0.15	3.0-5.9	0.1-1.0	.28	.28		6.1-7.8		
	10-15	---	---	---	---	---	---	---	---		---		
	15-39	---	---	---	---	---	---	---	---		---		
Rock outcrop.													
CkC, CkD: Collegedale-----	0-7	27-45	1.40-1.60	0.2-0.6	0.14-0.20	3.0-5.9	1.0-2.0	.28	.28	5	4.5-5.5		
	7-62	40-60	1.45-1.60	0.2-0.6	0.12-0.16	3.0-5.9	0.0-0.5	.24	.24		4.5-5.5		
Talbott-----	0-3	27-40	1.35-1.55	0.6-2	0.10-0.16	3.0-5.9	0.5-1.0	.32	.32	2	5.1-6.0		
	3-32	40-60	1.40-1.60	0.2-0.6	0.10-0.14	3.0-5.9	0.5-1.0	.24	.24		5.1-6.0		
	32-39	---	---	---	---	---	---	---	---		---		
CoB, CoC, CoD: Corryton-----	0-6	8-27	1.30-1.50	0.6-2	0.15-0.24	0.0-2.9	0.5-2.0	.32	.32	5	4.5-6.0		
	6-13	27-40	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	0.5-1.0	.32	.32		4.5-6.0		
	13-61	35-60	1.35-1.55	0.2-0.6	0.12-0.22	3.0-5.9	0.0-0.5	.32	.32		4.5-6.0		
CtB, CtC: Corryton-----	0-6	8-27	1.30-1.50	0.6-2	0.15-0.24	0.0-2.9	0.5-2.0	.32	.32	5	4.5-6.0		
	6-13	27-40	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	0.5-1.0	.32	.32		4.5-6.0		
	13-61	35-60	1.35-1.55	0.2-0.6	0.12-0.22	3.0-5.9	0.0-0.5	.32	.32		4.5-6.0		
Townley-----	0-4	12-27	1.30-1.60	0.6-2	0.12-0.14	0.0-2.9	0.5-2.0	.37	.37	3	3.6-5.5		
	4-28	40-60	1.30-1.60	0.06-0.2	0.12-0.18	3.0-5.9	0.0-0.5	.28	.32		3.6-5.5		
	28-50	---	---	---	---	---	---	---	---		---		
CzC, CzD: Corryton-----	0-6	8-27	1.30-1.50	0.6-2	0.15-0.24	0.0-2.9	0.5-2.0	.32	.32	5	4.5-6.0		
	6-13	27-40	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	0.5-1.0	.32	.32		4.5-6.0		
	13-61	35-60	1.35-1.55	0.2-0.6	0.12-0.22	3.0-5.9	0.0-0.5	.32	.32		4.5-6.0		
Udorthents.													
Urban land.													
DeB: Dewey-----	0-5	17-27	1.35-1.50	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	5	4.5-6.0		
	5-9	27-40	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	0.5-1.0	.32	.32		4.5-6.0		
	9-66	35-50	1.45-1.55	0.6-2	0.12-0.18	3.0-5.9	0.0-0.5	.24	.24		4.5-6.0		

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth		Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility		Organic matter	Erosion factors			Soil reaction
	In	Pct					In/in	Pct		Kw	Kf	T	
DeC2, DeD2, DeE2: Dewey-----	0-2	17-27	1.35-1.50	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	.32	.32	5	4.5-6.0
	2-9	27-40	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	0.5-1.0	.32	.32	.32	.32		4.5-6.0
	9-66	35-50	1.45-1.55	0.6-2	0.12-0.18	3.0-5.9	0.0-0.5	.24	.24	.24	.24		4.5-6.0
DgE3: Dewey-----	0-2	17-27	1.35-1.50	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	.32	.32	5	4.5-6.0
	2-66	35-50	1.45-1.55	0.6-2	0.12-0.18	3.0-5.9	0.0-0.5	.24	.24	.24	.24		4.5-6.0
Coghill-----	0-4	12-27	1.20-1.40	2-6	0.10-0.16	0.0-2.9	0.5-2.0	.28	.28	.28	.28	5	4.5-6.0
	4-34	30-60	1.25-1.50	0.6-2	0.09-0.15	3.0-5.9	0.1-1.0	.28	.28	.28	.28		4.5-6.0
	34-60	30-40	1.25-1.50	0.6-2	0.09-0.15	3.0-5.9	0.1-0.5	.28	.28	.28	.28		4.5-6.0
DwD, DwE: Dewey-----	0-2	17-27	1.35-1.50	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	.32	.32	5	4.5-6.0
	2-9	27-40	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	0.5-1.0	.32	.32	.32	.32		4.5-6.0
	9-66	35-50	1.45-1.55	0.6-2	0.12-0.18	3.0-5.9	0.0-0.5	.24	.24	.24	.24		4.5-6.0
Etowah-----	0-10	15-27	1.30-1.45	0.6-2	0.15-0.20	0.0-2.9	0.5-3.0	.32	.32	.32	.32	5	4.5-6.0
	10-64	27-50	1.40-1.55	0.6-2	0.16-0.20	0.0-2.9	0.0-0.5	.32	.32	.32	.32		4.5-6.0
DyC, DyD: Dewey-----	0-2	17-27	1.35-1.50	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	.32	.32	5	4.5-6.0
	2-9	27-40	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	0.5-1.0	.32	.32	.32	.32		4.5-6.0
	9-66	35-50	1.45-1.55	0.6-2	0.12-0.18	3.0-5.9	0.0-0.5	.24	.24	.24	.24		4.5-6.0
Udorthents.													
Urban land.													
Dz. Dumps	0-5	18-35	1.20-1.40	0.6-2	0.17-0.21	0.0-2.9	1.0-4.0	.37	.37	.37	.37	5	5.1-6.0
	5-44	20-35	1.25-1.45	0.6-2	0.17-0.21	0.0-2.9	0.5-1.0	.37	.37	.37	.37		5.1-6.0
	44-62	25-60	1.35-1.55	0.6-2	0.16-0.20	0.0-2.9	0.1-0.5	.37	.37	.37	.37		5.1-6.0
EmB, EmC: Emory-----	0-10	15-27	1.30-1.45	0.6-2	0.15-0.20	0.0-2.9	0.5-3.0	.32	.32	.32	.32	5	4.5-6.0
	10-64	27-50	1.40-1.55	0.6-2	0.16-0.20	0.0-2.9	0.0-0.5	.32	.32	.32	.32		4.5-6.0

Soil Survey of Knox County, Tennessee

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth		Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility		Organic matter	Erosion factors			Soil reaction
	In	Pct					In/in	Pct		Kw	Kf	T	
EvB: Etawah-----	0-10	15-27	1.30-1.45	0.6-2	0.15-0.20	0.0-2.9	0.5-3.0	.32	.32	5	4.5-6.0		
	10-64	25-50	1.40-1.55	0.6-2	0.16-0.20	0.0-2.9	0.0-0.5	.32	.32		4.5-6.0		
Minvale-----	0-9	20-35	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.28	.32	5	4.5-5.5		
	9-60	27-45	1.40-1.55	0.6-2	0.11-0.17	0.0-2.9	0.0-0.5	.28	.32		4.5-5.5		
FuC2, FuD2, FuE2: Fullerton-----	0-20	18-35	1.45-1.55	0.6-2	0.10-0.15	0.0-2.9	0.0-0.5	.24	.28	5	4.5-5.5		
	20-60	40-60	1.45-1.55	0.6-2	0.10-0.14	3.0-5.9	0.0-0.5	.20	.24		4.5-5.5		
FvC: Fullerton-----	0-20	15-27	1.45-1.55	0.6-2	0.10-0.16	0.0-2.9	0.5-2.0	.20	.32	5	4.5-5.5		
	20-60	40-60	1.45-1.55	0.6-2	0.10-0.14	3.0-5.9	0.0-0.5	.20	.28		4.5-5.5		
Minvale-----	0-9	20-35	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.28	.32	5	4.5-5.5		
	9-60	27-45	1.40-1.55	0.6-2	0.11-0.17	0.0-2.9	0.0-0.5	.28	.32		4.5-5.5		
FzC, FzD: Fullerton-----	0-20	15-27	1.45-1.55	0.6-2	0.10-0.16	0.0-2.9	0.5-2.0	.20	.32	5	4.5-5.5		
	20-60	40-60	1.45-1.55	0.6-2	0.10-0.14	3.0-5.9	0.0-0.5	.20	.28		4.5-5.5		
Udorthents. Urban land.													
He, HeB: Heiskell-----	0-18	7-27	1.30-1.45	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	5	5.1-7.3		
	18-46	27-40	1.30-1.45	0.2-0.6	0.17-0.20	0.0-2.9	0.1-1.0	.32	.32		5.1-7.3		
	46-67	12-60	1.30-1.50	0.2-0.6	0.17-0.22	3.0-5.9	0.1-1.0	.37	.37		5.6-8.4		
LoC: Loyston-----	0-3	27-60	1.20-1.40	0.6-2	0.15-0.20	3.0-5.9	1.0-4.0	.37	.37	1	6.1-7.8		
	3-10	40-60	1.35-1.60	0.2-0.6	0.08-0.15	3.0-5.9	0.1-1.0	.28	.28		6.1-7.8		
	10-15	---	---	---	---	---	---	---	---		---		
15-39	---	---	---	---	---	---	---	---		---			
Rock outcrop.													
LoE: Loyston-----	0-3	27-60	1.20-1.40	0.6-2	0.15-0.20	3.0-5.9	1.0-4.0	.37	.37	1	6.1-7.8		
	3-10	40-60	1.35-1.60	0.2-0.6	0.08-0.15	3.0-5.9	0.1-1.0	.28	.28		6.1-7.8		
	10-15	---	---	---	---	---	---	---	---		---		
15-39	---	---	---	---	---	---	---	---		---			

Soil Survey of Knox County, Tennessee

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth		Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility		Organic matter	Erosion factors			Soil reaction
	In	Pct					In/in	Pct		Kw	Kf	T	
LrF: Loyston-----	0-3	27-60	1.20-1.40	0.6-2	0.15-0.20	3.0-5.9	1.0-4.0	.37	.37	1	6.1-7.8		
	3-10	40-60	1.35-1.60	0.2-0.6	0.08-0.15	3.0-5.9	0.1-1.0	.28	.28		6.1-7.8		
	10-15	---	---	---	---	---	---	---	---		---		
	15-39	---	---	---	---	---	---	---	---		---		
Nonaburg-----	0-3	20-40	1.50-1.62	0.2-0.6	0.10-0.15	0.0-2.9	0.5-2.0	.28	.32	1	6.1-7.8		
	3-10	35-60	1.55-1.65	0.2-0.6	0.09-0.14	3.0-5.9	0.0-0.5	.17	.24		6.1-7.8		
	10-39	---	---	0.00-0.2	---	---	---	---	---		---		
Rock outcrop.													
LtC, LtD: Loyston-----	0-3	27-60	1.20-1.40	0.6-2	0.15-0.20	3.0-5.9	1.0-4.0	.37	.37	1	6.1-7.8		
	3-10	40-60	1.35-1.60	0.2-0.6	0.08-0.15	3.0-5.9	0.1-1.0	.28	.28		6.1-7.8		
	10-15	---	---	---	---	---	---	---	---		---		
	15-39	---	---	---	---	---	---	---	---		---		
Talbott-----	0-3	27-40	1.35-1.55	0.6-2	0.10-0.16	3.0-5.9	0.5-1.0	.32	.32	2	5.1-6.0		
	3-32	40-60	1.40-1.60	0.2-0.6	0.10-0.14	3.0-5.9	0.5-1.0	.24	.24		5.1-6.0		
	32-39	---	---	---	---	---	---	---	---		---		
Rock outcrop.													
MfD: Minvale-----	0-9	20-35	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.28	.32	5	4.5-5.5		
	9-60	27-45	1.40-1.55	0.6-2	0.11-0.17	0.0-2.9	0.0-0.5	.28	.32		4.5-5.5		
Fullerton-----	0-20	15-27	1.45-1.55	0.6-2	0.10-0.16	0.0-2.9	0.5-2.0	.20	.32	5	4.5-5.5		
	20-60	40-60	1.45-1.55	0.6-2	0.10-0.14	3.0-5.9	0.0-0.5	.20	.28		4.5-5.5		
MfE: Minvale-----	0-9	20-35	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.28	.32	5	4.5-5.5		
	9-60	27-45	1.40-1.55	0.6-2	0.11-0.17	0.0-2.9	0.0-0.5	.28	.32		4.5-5.5		
Bodine-----	0-1	---	---	2-6	---	---	---	---	---	5	---		
	1-16	18-27	1.40-1.60	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.15	.28		3.6-5.5		
	16-60	25-50	1.40-1.60	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.15	.28		3.6-5.5		
Fullerton-----	0-20	15-27	1.45-1.55	0.6-2	0.10-0.16	0.0-2.9	0.5-2.0	.20	.32	5	4.5-5.5		
	20-60	40-60	1.45-1.55	0.6-2	0.10-0.14	3.0-5.9	0.0-0.5	.20	.28		4.5-5.5		
NnD3, NnE3: Nonaburg-----	0-3	20-40	1.50-1.62	0.2-0.6	0.10-0.15	0.0-2.9	0.5-2.0	.28	.32	1	6.1-7.8		
	3-10	35-60	1.55-1.65	0.2-0.6	0.09-0.14	3.0-5.9	0.0-0.5	.17	.24		6.1-7.8		
	10-39	---	---	0.00-0.2	---	---	---	---	---		---		

Soil Survey of Knox County, Tennessee

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth		Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility		Organic matter	Erosion factors			Soil reaction
	In	Pct					In/in	Pct		Kw	Kf	T	
Ph: Pettyjon	0-6	18-27	1.20-1.50	0.6-2	0.17-0.22	0.0-2.9	1.0-3.0	.32	.32	5		6.1-7.3	
	6-65	18-35	1.20-1.50	0.6-2	0.17-0.22	0.0-2.9	0.1-1.0	.32	.32			6.1-7.3	
Hamblen	0-6	15-25	1.30-1.45	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	5		5.1-7.3	
	6-67	18-35	1.30-1.45	0.6-2	0.17-0.20	0.0-2.9	0.1-1.0	.32	.32			5.1-7.3	
Pz. Pits, mines, and dumps													
Ro: Rockdell	0-10	10-22	1.40-1.70	2-6	0.05-0.10	0.0-2.9	0.5-2.0	.20	.32	3		4.5-6.0	
	10-31	15-35	1.45-1.70	0.6-6	0.07-0.13	0.0-2.9	0.1-1.0	.15	.28			4.5-6.5	
	31-60	27-45	1.45-1.70	0.6-2	0.06-0.12	3.0-5.9	0.1-0.5	.10	.28			4.5-6.5	
SaC, SaD: Salacoa	0-3	---	---	0.6-2	---	---	---	---	---	5		---	
	3-14	7-27	1.35-1.50	0.6-2	0.12-0.20	0.0-2.9	0.0-0.5	.28	.28			5.1-6.0	
	14-66	10-40	1.40-1.60	0.6-2	0.09-0.15	0.0-2.9	0.0-0.5	.28	.28			5.1-6.0	
SbC: Salacoa	0-14	7-27	1.35-1.50	0.6-2	0.12-0.20	0.0-2.9	0.0-0.5	.28	.28	5		5.1-6.0	
	14-66	10-40	1.40-1.60	0.6-2	0.09-0.15	0.0-2.9	0.0-0.5	.28	.28			5.1-6.0	
Apison	0-10	7-27	1.30-1.45	0.6-2	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	3		4.5-5.5	
	10-29	18-35	1.35-1.50	0.6-2	0.13-0.18	0.0-2.9	0.0-0.5	.37	.37			4.5-5.5	
	29-36	---	---	0.00-0.2	---	---	---	---	---			---	
SeC, SeD: Salacoa	0-14	7-27	1.35-1.50	0.6-2	0.12-0.20	0.0-2.9	0.0-0.5	.28	.28	5		5.1-6.0	
	14-66	10-40	1.40-1.60	0.6-2	0.09-0.15	0.0-2.9	0.0-0.5	.28	.28			5.1-6.0	
Udorthents. Urban land.													
ShB, ShC: Shady	0-8	10-25	1.35-1.50	0.6-6	0.12-0.18	0.0-2.9	1.0-3.0	.28	.28	5		4.5-6.5	
	8-65	20-35	1.35-1.55	0.6-2	0.14-0.20	0.0-2.9	0.0-0.5	.28	.28			4.5-6.0	

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility (Ksat) In/hr	Available water capacity In/in	Linear extensi- bility		Organic matter Pct	Erosion factors			Soil reaction
	In	Pct					In/in	Pct		Kw	Kf	T	
So: Shady-----	0-8	10-25	1.35-1.50	0.6-6	0.12-0.18	0.0-2.9	1.0-3.0	.28	.28	.28	.28	5	4.5-6.5
	8-65	20-35	1.35-1.55	0.6-2	0.14-0.20	0.0-2.9	0.0-0.5	.28	.28	.28	.28		4.5-6.0
Whitwell-----	0-16	10-25	1.35-1.55	0.6-2	0.15-0.20	0.0-2.9	1.0-3.0	.32	.24	.32	.24	5	4.5-6.0
	16-47	18-35	1.40-1.70	0.6-2	0.14-0.20	0.0-2.9	0.5-2.0	.32	.32	.32	.32		4.5-5.5
	47-65	20-50	1.40-1.55	0.6-2	0.14-0.20	0.0-2.9	0.5-2.0	.28	.28	.28	.28		4.5-5.5
St: Steadman-----	0-5	12-27	1.10-1.30	0.6-2	0.17-0.22	0.0-2.9	1.0-3.0	.37	.37	.37	.37	5	5.6-7.8
	5-44	18-35	1.10-1.30	0.6-2	0.12-0.18	0.0-2.9	0.5-1.0	.32	.32	.32	.32		5.6-7.8
	44-65	30-60	1.30-1.50	0.6-2	0.17-0.22	3.0-5.9	0.5-1.0	.37	.37	.37	.37		5.6-7.8
SwB, SwC: Swafford-----	0-3	15-25	1.30-1.45	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	.32	.32	5	5.1-7.3
	3-17	18-32	1.40-1.55	0.6-2	0.14-0.18	0.0-2.9	0.5-1.0	.37	.37	.37	.37		4.5-6.0
	17-42	18-32	1.45-1.60	0.2-0.6	0.14-0.18	0.0-2.9	0.5-1.0	.32	.32	.32	.32		4.5-6.0
	42-60	20-40	1.40-1.55	0.6-2	0.14-0.18	0.0-2.9	0.5-1.0	.32	.32	.32	.32		4.5-6.0
TbC2: Talbott-----	0-3	27-40	1.35-1.55	0.6-2	0.10-0.16	3.0-5.9	0.5-1.0	.32	.32	.32	.32	2	5.1-6.0
	3-32	40-60	1.40-1.60	0.2-0.6	0.10-0.14	3.0-5.9	0.5-1.0	.24	.24	.24	.24		5.1-6.0
	32-39	---	---	---	---	---	---	---	---	---	---		---
Rock outcrop. Bradyville-----	0-3	18-27	1.40-1.55	0.6-2	0.18-0.22	0.0-2.9	0.5-2.0	.43	.43	.43	.43	3	5.1-6.5
	3-51	40-60	1.30-1.50	0.2-0.6	0.10-0.15	3.0-5.9	0.0-0.5	.28	.28	.28	.28		5.1-6.0
	51-59	---	---	---	---	---	---	---	---	---	---		---
Tc: Toccoa-----	0-4	7-17	1.35-1.45	2-6	0.09-0.12	0.0-2.9	1.0-2.0	.24	.24	.24	.24	5	5.1-6.5
	4-65	2-19	1.40-1.50	2-6	0.09-0.12	0.0-2.9	0.1-1.0	.20	.20	.20	.20		5.1-6.5
ToC: Townley-----	0-4	12-27	1.30-1.60	0.6-2	0.12-0.14	0.0-2.9	0.5-2.0	.37	.37	.37	.37	3	3.6-5.5
	4-28	40-60	1.30-1.60	0.06-0.2	0.12-0.18	3.0-5.9	0.0-0.5	.28	.32	.32	.32		3.6-5.5
	28-50	---	---	---	---	---	---	---	---	---	---		---
TSD: Townley-----	0-4	12-27	1.30-1.60	0.6-2	0.12-0.14	0.0-2.9	0.5-2.0	.37	.37	.37	.37	3	3.6-5.5
	4-28	40-60	1.30-1.60	0.06-0.2	0.12-0.18	3.0-5.9	0.0-0.5	.28	.32	.32	.32		3.6-5.5
	28-50	---	---	---	---	---	---	---	---	---	---		---

Soil Survey of Knox County, Tennessee

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Soil reaction
								In	Pct	Kf	
TsD: Loyston-----											
	0-3	27-60	1.20-1.40	0.6-2	0.15-0.20	3.0-5.9	1.0-4.0	.37	.37	1	6.1-7.8
	3-10	40-60	1.35-1.60	0.2-0.6	0.08-0.15	3.0-5.9	0.1-1.0	.28	.28		6.1-7.8
	10-15	---	---	---	---	---	---	---	---		---
15-39	---	---	---	---	---	---	---	---		---	---
TvD, TvE, TvF: Townley-----											
	0-4	12-27	1.30-1.60	0.6-2	0.12-0.14	0.0-2.9	0.5-2.0	.37	.37	3	3.6-5.5
	4-28	40-60	1.30-1.60	0.06-0.2	0.12-0.18	3.0-5.9	0.0-0.5	.28	.32		3.6-5.5
	28-50	---	---	---	---	---	---	---	---		---
Montevallo-----											
	0-3	12-27	1.25-1.45	0.6-2	0.09-0.18	0.0-2.9	0.5-2.0	.28	.32	2	4.5-6.0
	3-19	12-27	1.25-1.50	0.6-2	0.02-0.12	0.0-2.9	0.0-0.5	.32	.32		4.5-6.0
	19-40	---	---	---	---	---	---	---	---		---
Ur. Urban land											
Uu. Urban land- Udoorthents											
W. Water											
WaF: Wallen-----											
	0-5	8-20	1.40-1.55	2-6	0.05-0.09	0.0-2.9	0.5-2.0	.17	.28	2	4.5-6.0
	5-24	8-20	1.40-1.55	2-6	0.05-0.09	0.0-2.9	0.5-2.0	.17	.28		4.5-6.0
	24-30	---	---	---	---	---	---	---	---		---
Rock outcrop.											
WeB, WeC: Waynesboro-----											
	0-6	10-27	1.40-1.55	0.6-2	0.15-0.21	0.0-2.9	0.5-2.0	.28	.28	5	4.5-5.5
	6-12	20-35	1.40-1.55	0.6-2	0.14-0.20	0.0-2.9	0.0-1.0	.28	.28		4.5-5.5
	12-62	35-50	1.40-1.55	0.6-2	0.13-0.18	0.0-2.9	0.0-1.0	.28	.28		4.5-5.5
WeD2: Waynesboro-----											
	0-4	10-27	1.40-1.55	0.6-2	0.15-0.21	0.0-2.9	0.5-2.0	.28	.28	5	4.5-5.5
	4-15	20-35	1.40-1.55	0.6-2	0.14-0.20	0.0-2.9	0.0-1.0	.28	.28		4.5-5.5
	15-62	35-50	1.40-1.55	0.6-2	0.13-0.18	0.0-2.9	0.0-1.0	.28	.28		4.5-5.5

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility (Ksat) In/hr	Available water capacity In/in	Linear extensi- bility		Organic matter Pct	Erosion factors			Soil reaction
	In	Pct					Pct	Kw		Kf	T		
WsC: Waynesboro-----	0-5	12-27	1.40-1.55	0.6-2	0.08-0.14	0.0-2.9	0.5-2.0	.20	.28	5	4.5-5.5		
	5-15	20-35	1.40-1.55	0.6-2	0.14-0.20	0.0-2.9	0.0-1.0	.28	.28		4.5-5.5		
	15-62	35-50	1.40-1.55	0.6-2	0.13-0.18	0.0-2.9	0.0-1.0	.28	.28		4.5-5.5		
WwB: Whitwell-----	0-16	10-25	1.35-1.55	0.6-2	0.15-0.20	0.0-2.9	1.0-3.0	.32	.24	5	4.5-6.0		
	16-47	18-38	1.40-1.70	0.6-2	0.14-0.20	0.0-2.9	0.1-1.0	.32	.32		4.5-5.5		
	47-65	20-50	1.40-1.55	0.6-2	0.14-0.20	0.0-2.9	0.1-1.0	.28	.28		4.5-5.5		

Table 17.—Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydrologic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
AmC, AmD, AmE, AmF: Apison-----	B	Jan-Dec	---	---	---	---	---	---	None
Montevallo-----	D	Jan-Dec	---	---	---	---	---	---	None
Bd: Bloomingdale, drained----	D	January	0.5-1.5	>6.0	---	---	---	Brief	Occasional
		February	0.5-1.5	>6.0	---	---	---	Brief	Occasional
		March	0.5-1.5	>6.0	---	---	---	Brief	Occasional
		April	0.5-1.5	>6.0	---	---	---	Brief	Occasional
		May	---	---	---	---	---	Brief	Occasional
		November	---	---	---	---	---	Brief	Occasional
		December	0.5-1.5	>6.0	---	---	---	Brief	Occasional
Bloomingdale, undrained---	D	January	0.0	>6.0	0.5-2.0	Long	Occasional	---	None
		February	0.0	>6.0	0.5-2.0	Long	Occasional	---	None
		March	0.0	>6.0	0.5-2.0	Long	Occasional	---	None
		April	0.0	>6.0	0.5-2.0	Long	Occasional	---	None
		May	0.0	>6.0	0.5-2.0	Brief	Occasional	---	None
		November	0.0	>6.0	0.5-2.0	Brief	Occasional	---	None
		December	0.0	>6.0	0.5-2.0	Long	Occasional	---	None
Bh: Bloomingdale-----	D	January	0.0-1.0	>6.0	---	---	---	Brief	Occasional
		February	0.0-1.0	>6.0	---	---	---	Brief	Occasional
		March	0.0-1.0	>6.0	---	---	---	Brief	Occasional
		April	0.0-1.0	>6.0	---	---	---	Brief	Occasional
		May	0.0-1.0	>6.0	---	---	---	Brief	Occasional
		November	0.0-1.0	>6.0	---	---	---	Brief	Occasional
		December	0.0-1.0	>6.0	---	---	---	Brief	Occasional

Table 17.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Bh: Hamblen-----	C	January	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		February	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		March	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		April	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		May	---	---	---	---	---	Brief	Occasional
		November	---	---	---	---	---	Brief	Occasional
		December	1.5-3.0	>6.0	---	---	---	Brief	Occasional
CcC, CcD, CcE: Coghill-----	B	Jan-Dec	---	---	---	---	---	---	None
Corryton-----	B	Jan-Dec	---	---	---	---	---	---	None
CeB3, CeC3, CeD3: Collegedale-----	C	Jan-Dec	---	---	---	---	---	---	None
CgB: Collegedale-----	C	Jan-Dec	---	---	---	---	---	---	None
Loyston-----	D	Jan-Dec	---	---	---	---	---	---	None
Rock outcrop.									
CkC, CkD: Collegedale-----	C	Jan-Dec	---	---	---	---	---	---	None
Talbott-----	C	Jan-Dec	---	---	---	---	---	---	None
CoB, CoC, CoD: Corryton-----	B	Jan-Dec	---	---	---	---	---	---	None

Soil Survey of Knox County, Tennessee

Table 17.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
CtB, CtC: Corryton-----	B	Jan-Dec	---	---	---	---	None	---	None
Townley-----	C	Jan-Dec	---	---	---	---	None	---	None
CzC, CzD: Corryton-----	B	Jan-Dec	---	---	---	---	None	---	None
Udorthents. Urban land.									
DeB, DeC2, DeD2, DeE2: Dewey-----	B	Jan-Dec	---	---	---	---	None	---	None
DgE3: Dewey-----	B	Jan-Dec	---	---	---	---	None	---	None
Coghill-----	B	Jan-Dec	---	---	---	---	None	---	None
DwD, DwE: Dewey-----	B	Jan-Dec	---	---	---	---	None	---	None
Etowah-----	B	Jan-Dec	---	---	---	---	None	---	None
DyC, DyD: Dewey-----	B	Jan-Dec	---	---	---	---	None	---	None
Udorthents. Urban land.									
Dz. Dumps									

Soil Survey of Knox County, Tennessee

Table 17.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
EmB, EmC: Emory-----	B	Jan-Dec	---	---	---	---	---	---	None
EtB: Etowah-----	B	Jan-Dec	---	---	---	---	---	---	None
EvB: Etowah-----	B	Jan-Dec	---	---	---	---	---	---	None
Minvale-----	B	Jan-Dec	---	---	---	---	---	---	None
FuC2, FuD2, FuE2: Fullerton-----	B	Jan-Dec	---	---	---	---	---	---	None
FvC: Fullerton-----	B	Jan-Dec	---	---	---	---	---	---	None
Minvale-----	B	Jan-Dec	---	---	---	---	---	---	None
FzC, FzD: Fullerton-----	B	Jan-Dec	---	---	---	---	---	---	None
Udorthents. Urban land.									
He: Heiskell-----	C	January February March December	1.5-3.0 1.5-3.0 1.5-3.0 1.5-3.0	>6.0 >6.0 >6.0 >6.0	---	---	---	---	None None None None
									Occasional Occasional Occasional Occasional

Soil Survey of Knox County, Tennessee

Table 17.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
HeB: Heiskell-----	C	January	1.5-3.0	>6.0	---	---	---	---	None
		February	1.5-3.0	>6.0	---	---	---	---	None
		March	1.5-3.0	>6.0	---	---	---	---	None
		December	1.5-3.0	>6.0	---	---	---	---	None
LoC: Loyston-----	D	Jan-Dec	---	---	---	---	---	---	None
Rock outcrop.									
LoE: Loyston-----	D	Jan-Dec	---	---	---	---	---	---	None
LrF: Loyston-----	D	Jan-Dec	---	---	---	---	---	---	None
Nonaburg-----	D	Jan-Dec	---	---	---	---	---	---	None
Rock outcrop.									
LtC, LtD: Loyston-----	D	Jan-Dec	---	---	---	---	---	---	None
Talbott-----	C	Jan-Dec	---	---	---	---	---	---	None
Rock outcrop.									
MfD: Minvale-----	B	Jan-Dec	---	---	---	---	---	---	None
Fullerton-----	B	Jan-Dec	---	---	---	---	---	---	None

Soil Survey of Knox County, Tennessee

Table 17.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
MfE: Minvale-----	B	Jan-Dec	---	---	---	---	---	---	None
Bodine-----	B	Jan-Dec	---	---	---	---	---	---	None
Fullerton-----	B	Jan-Dec	---	---	---	---	---	---	None
NnD3, NnE3: Nonaburg-----	D	Jan-Dec	---	---	---	---	---	---	None
Ph: Pettyjon-----	B	January February March December	5.0-6.0 5.0-6.0 5.0-6.0 ---	>6.0 >6.0 >6.0 ---	---	---	---	Very brief Very brief Very brief Very brief	Occasional Occasional Occasional Occasional
Hamblen-----	C	January February March April December	1.5-3.0 1.5-3.0 1.5-3.0 1.5-3.0 1.5-3.0	>6.0 >6.0 >6.0 >6.0 >6.0	---	---	---	Very brief Very brief Very brief Very brief Very brief	Occasional Occasional Occasional None Occasional
Ro: Rockdell-----	B	January February March April November December	3.5-5.0 3.5-5.0 3.5-5.0 3.5-5.0 3.5-5.0 3.5-5.0	>6.0 >6.0 >6.0 >6.0 >6.0 >6.0	---	---	---	---	Rare Rare Rare None None Rare
Pz. Pits, mines, and dumps									
SaC, SaD: Salacoa-----	B	Jan-Dec	---	---	---	---	---	---	None

Soil Survey of Knox County, Tennessee

Table 17.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
SbC: Salacoa-----	B	Jan-Dec	---	---	---	---	---	---	None
Apison-----	B	Jan-Dec	---	---	---	---	---	---	None
SeC, SeD: Salacoa-----	B	Jan-Dec	---	---	---	---	---	---	None
Udorthents. Urban land.									
ShB, ShC: Shady-----	B	Jan-Dec	---	---	---	---	---	---	None
So: Shady-----	B	January February March December Jan-Dec	---	---	---	---	---	---	Rare Rare Rare Rare None
Whitwell-----	C	January February March April December	1.5-3.0 1.5-3.0 1.5-3.0 1.5-3.0 1.5-3.0	>6.0 >6.0 >6.0 >6.0 >6.0	---	---	---	---	Rare Rare Rare None Rare
St: Steadman-----	C	January February March April December	1.5-3.0 1.5-3.0 1.5-3.0 1.5-3.0 1.5-3.0	>6.0 >6.0 >6.0 >6.0 >6.0	---	---	---	Very brief Very brief Very brief Very brief Very brief	Occasional Occasional Occasional Occasional Occasional
SwB, SwC: Swafford-----	C	January February March	1.5-3.0 1.5-3.0 1.5-3.0	---	---	---	---	---	None None None

Soil Survey of Knox County, Tennessee

Table 17.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Tbc2: Talbott-----	C	Jan-Dec	---	---	---	---	---	---	None
Rock outcrop.									
Bradyville-----	C	Jan-Dec	---	---	---	---	---	---	None
Tc: Toccoa-----	B	January	4.0-6.0	>6.0	---	---	---	---	Rare
		February	4.0-6.0	>6.0	---	---	---	---	Rare
		March	4.0-6.0	>6.0	---	---	---	---	Rare
		April	4.0-6.0	>6.0	---	---	---	---	None
		December	4.0-6.0	>6.0	---	---	---	---	Rare
TOC: Townley-----	C	Jan-Dec	---	---	---	---	---	---	None
TSD: Townley-----	C	Jan-Dec	---	---	---	---	---	---	None
Loyston-----	D	Jan-Dec	---	---	---	---	---	---	None
TvD, TvE, TvF: Townley-----	C	Jan-Dec	---	---	---	---	---	---	None
Montevallo-----	D	Jan-Dec	---	---	---	---	---	---	None
Ur. Urban land									
Uu. Urban land-Udorthents									
W. Water									

Table 17.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Surface water depth	Ponding		Flooding	
			Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Waf: Wallen-----	B	Jan-Dec	---	---	---			---	None
Rock outcrop.									
Wec, WeC, WeD2, Wsc: Waynesboro-----	B	Jan-Dec	---	---	---			---	None
WwB: Whitwell-----	C	January February March April December	1.5-3.0 1.5-3.0 1.5-3.0 1.5-3.0 1.5-3.0	>6.0 >6.0 >6.0 >6.0 >6.0	---			---	Rare Rare Rare None Rare

Soil Survey of Knox County, Tennessee

Table 18.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
AmC, AmD, AmE, AmF: Apison-----	Bedrock (paralithic)	20-40	Very strongly cemented	None	Moderate	Moderate
Montevallo-----	Bedrock (paralithic)	10-20	Very strongly cemented	None	Moderate	Moderate
Bd: Bloomingdale, drained--	---	---	---	None	High	Low
Bloomingdale, undrained	---	---	---	None	High	Low
Bh: Bloomingdale-----	---	---	---	None	High	Low
Hamblen-----	---	---	---	None	Moderate	Moderate
CcC, CcD, CcE: Coghill-----	---	---	---	None	High	Moderate
Corryton-----	---	---	---	None	High	Moderate
CeB3, CeC3, CeD3: Collegedale-----	---	---	---	None	High	Moderate
CgB: Collegedale-----	---	---	---	None	High	Moderate
Loyston-----	Bedrock (paralithic)	10-15	Very strongly cemented	None	Moderate	Low
	Bedrock (lithic)	10-20	Indurated			
Rock outcrop.						
CKC, CKD: Collegedale-----	---	---	---	None	High	Moderate
Talbott-----	Bedrock (lithic)	20-40	Indurated	None	High	Moderate
CoB, CoC, CoD: Corryton-----	---	---	---	None	High	Moderate
CtB, CtC: Corryton-----	---	---	---	None	High	Moderate
Townley-----	Bedrock (paralithic)	20-40	Very strongly cemented	None	Moderate	High
CzC: Corryton-----	---	---	---	None	High	Moderate
Udorthents.						
Urban land.						

Soil Survey of Knox County, Tennessee

Table 18.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top <u>In</u>	Hardness		Uncoated steel	Concrete
CzD: Corryton----- Udorthents. Urban land.	---	---	---	None	Moderate	High
DeB, DeC2, DeD2, DeE2: Dewey-----	---	---	---	None	High	Moderate
DgE3: Dewey----- Coghill-----	---	---	---	None	High	Moderate
DwD, DwE: Dewey----- Etowah-----	---	---	---	None	High	Moderate
DyC, DyD: Dewey----- Udorthents. Urban land.	---	---	---	None	High	Moderate
Dz. Dumps						
EmB, EmC: Emory-----	---	---	---	None	Moderate	Moderate
EtB: Etowah-----	---	---	---	None	Low	Moderate
EvB: Etowah----- Minvale-----	---	---	---	None	Low	Moderate
FuC2, FuD2, FuE2: Fullerton-----	---	---	---	None	High	Moderate
FvC: Fullerton----- Minvale-----	---	---	---	None	High	Moderate
FzC, FzD: Fullerton----- Udorthents. Urban land.	---	---	---	None	Moderate	Low
He, HeB: Heiskell-----	---	---	---	None	High	Moderate

Soil Survey of Knox County, Tennessee

Table 18.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top <u>In</u>	Hardness		Uncoated steel	Concrete
LoC: Loyston-----	Bedrock (paralithic)	10-15	Very strongly cemented	None	Moderate	Low
	Bedrock (lithic)	10-20	Indurated			
Rock outcrop.						
LoE: Loyston-----	Bedrock (paralithic)	10-15	Very strongly cemented	None	Moderate	Low
	Bedrock (lithic)	10-20	Indurated			
LrF: Loyston-----	Bedrock (paralithic)	10-15	Very strongly cemented	None	Moderate	Low
	Bedrock (lithic)	10-20	Indurated			
Nonaburg-----	Bedrock (paralithic)	8-20	Very strongly cemented	None	High	Low
Rock outcrop.						
LtC, LtD: Loyston-----	Bedrock (paralithic)	10-15	Very strongly cemented	None	Moderate	Low
	Bedrock (lithic)	10-20	Indurated			
Talbott-----	Bedrock (lithic)	20-40	Indurated	None	High	Moderate
Rock outcrop.						
MfD: Minvale-----	---	---	---	None	Moderate	Low
Fullerton-----	---	---	---	None	High	Moderate
MfE: Minvale-----	---	---	---	None	Moderate	Low
Bodine-----	---	---	---	None	Low	High
Fullerton-----	---	---	---	None	High	Moderate
NnD3, NnE3: Nonaburg-----	Bedrock (paralithic)	8-20	Very strongly cemented	None	High	Low
Ph: Pettyjon-----	---	---	---	None	Moderate	Low
Hamblen-----	---	---	---	None	Moderate	Moderate
Pz. Pits, mines, and dumps						
RO: Rockdell-----	---	---	---	None	Low	Moderate
SaC, SaD: Salacoa-----	---	---	---	None	Moderate	Moderate

Soil Survey of Knox County, Tennessee

Table 18.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top <u>In</u>	Hardness		Uncoated steel	Concrete
SbC: Salacoa-----	---	---	---	None	Moderate	Moderate
Apison-----	Bedrock (paralithic)	20-40	Very strongly cemented	None	Moderate	Moderate
SeC, SeD: Salacoa-----	---	---	---	None	Moderate	Moderate
Udorthents.						
Urban land.						
ShB, ShC: Shady-----	---	---	---	None	Low	Moderate
So: Shady-----	---	---	---	None	Low	Moderate
Whitwell-----	---	---	---	None	Moderate	Moderate
St: Steadman-----	---	---	---	None	Moderate	Low
SwB, SwC: Swafford-----	---	---	---	None	Moderate	Moderate
TbC2: Talbot-----	Bedrock (lithic)	20-40	Indurated	None	High	Moderate
Rock outcrop.						
Bradyville-----	Bedrock (lithic)	40-60	Indurated	None	High	Moderate
Tc: Toccoa-----	---	---	---	None	Low	Moderate
ToC: Townley-----	Bedrock (paralithic)	20-40	Very strongly cemented	None	Moderate	High
TsD: Townley-----	Bedrock (paralithic)	20-40	Very strongly cemented	None	Moderate	High
Loyston-----	Bedrock (paralithic)	10-15	Very strongly cemented	None	Moderate	Low
	Bedrock (lithic)	10-20	Indurated			
TvD, TvE, TvF: Townley-----	Bedrock (paralithic)	20-40	Very strongly cemented	None	Moderate	High
Montevallo-----	Bedrock (paralithic)	10-20	Very strongly cemented	None	Moderate	Moderate
Ur. Urban land						

Soil Survey of Knox County, Tennessee

Table 18.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top <u>In</u>	Hardness		Uncoated steel	Concrete
Uu. Urban land-Udorthents						
W. Water						
WaF: Wallen-----	Bedrock (lithic)	20-40	Indurated	None	Low	High
Rock outcrop.						
WeB, WeC, WeD2, WsC: Waynesboro-----	---	---	---	None	High	High
WwB: Whitwell-----	---	---	---	None	Moderate	Moderate

Soil Survey of Knox County, Tennessee

Table 19.—Taxonomic Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Apison-----	Fine-loamy, siliceous, semiactive, thermic Typic Hapludults
Bloomington-----	Fine, mixed, semiactive, nonacid, thermic Typic Endoaquepts
Bodine-----	Loamy-skeletal, siliceous, semiactive, thermic Typic Paleudults
Bradyville-----	Fine, mixed, semiactive, thermic Typic Hapludalfs
Coghill-----	Fine, mixed, semiactive, thermic Typic Hapludults
Collegedale-----	Fine, mixed, semiactive, thermic Typic Paleudults
Corryton-----	Fine, mixed, semiactive, thermic Typic Hapludults
Dewey-----	Fine, kaolinitic, thermic Typic Paleudults
Emory-----	Fine-silty, siliceous, active, thermic Fluventic Humic Dystrudepts
Etowah-----	Fine-loamy, siliceous, semiactive, thermic Typic Paleudults
Fullerton-----	Fine, kaolinitic, thermic Typic Paleudults
Hamblen-----	Fine-loamy, siliceous, semiactive, thermic Fluvaquentic Eutrudepts
Heiskell-----	Fine-loamy, mixed, semiactive, thermic Aquic Hapludalfs
Loyston-----	Clayey, mixed, active, thermic Lithic Hapludalfs
Minvale-----	Fine-loamy, siliceous, subactive, thermic Typic Paleudults
Montevallo-----	Loamy-skeletal, mixed, subactive, thermic, shallow Typic Dystrudepts
Nonaburg-----	Clayey, mixed, active, thermic, shallow Inceptic Hapludalfs
Pettyjon-----	Fine-loamy, mixed, active, thermic Dystric Fluventic Eutrudepts
Rockdell-----	Loamy-skeletal, siliceous, active, thermic Dystric Fluventic Eutrudepts
Salacoa-----	Fine-loamy, mixed, active, thermic Typic Hapludalfs
Shady-----	Fine-loamy, mixed, subactive, thermic Typic Hapludults
*Steadman-----	Fine-silty, mixed, active, thermic Fluvaquentic Eutrudepts
Swafford-----	Fine-loamy, siliceous, semiactive, thermic Fraguaquic Paleudults
Talbott-----	Fine, mixed, semiactive, thermic Typic Hapludalfs
*Toccoa-----	Coarse-loamy, mixed, active, nonacid, thermic Typic Udifluvents
Townley-----	Fine, mixed, semiactive, thermic Typic Hapludults
Udorthents-----	Udorthents
Wallen-----	Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts
Waynesboro-----	Fine, kaolinitic, thermic Typic Paleudults
Whitwell-----	Fine-loamy, siliceous, semiactive, thermic Aquic Hapludults

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