United States Department of Agriculture

NRCS

Natural Resources Conservation Service

In cooperation with South Carolina Agricultural Experiment Station and South Carolina Land Resources Conservation Commission

Soil Survey of Calhoun County, South Carolina

How To Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

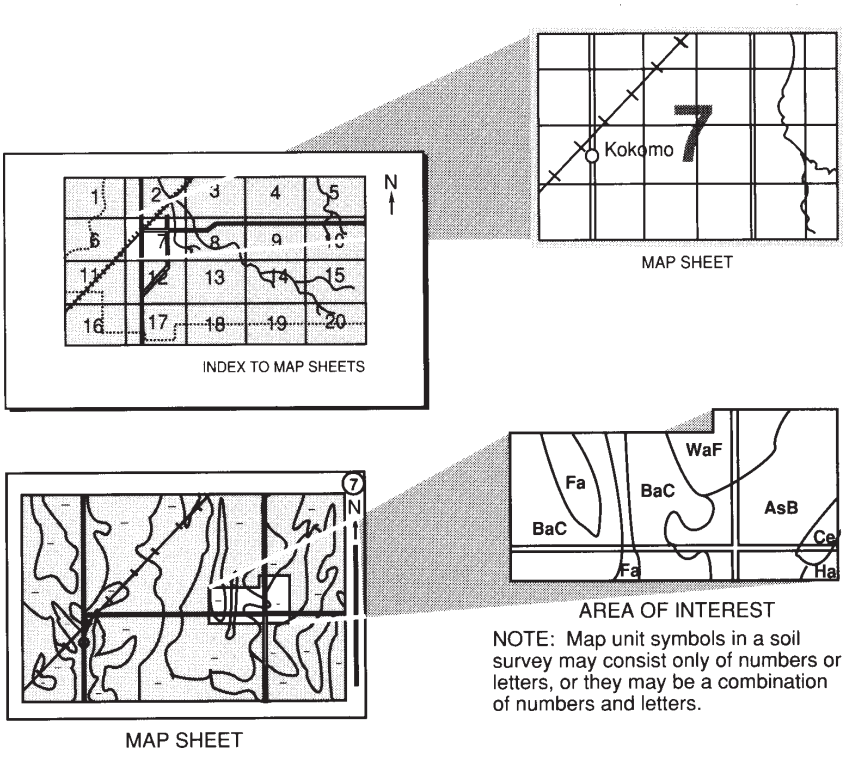
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



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 has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1992. Soil names and descriptions were approved in 1993. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1992. This soil survey was made cooperatively by the Natural Resources Conservation Service, the South Carolina Agricultural Experiment Station, and the South Carolina Land Resources Conservation Commission. It is part of the technical assistance furnished to the Calhoun County Soil and Water 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.

This soil survey updates the survey of Calhoun County published in 1963 *(6)*. It provides additional information and has larger maps, which show the soils in greater detail.

All programs and services of the Natural Resources Conservation Service are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

Cover: An area of Dothan loamy sand, 0 to 2 percent slopes, which is well suited to cotton. Cotton is a major contributor to the economy of Calhoun County.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

Contents

Foreword

This soil survey contains information that can be used in land-planning programs in Calhoun 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.

Walter W. Douglas
State Conservationist
Natural Resources Conservation Service

Soil Survey of Calhoun County, South Carolina

By Dennis J. DeFrancesco, Natural Resources Conservation Service

Soils surveyed by Dennis J. DeFrancesco, Mark Mann, and Cleveland Mitchell, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
the South Carolina Agricultural Experiment Station and the South Carolina Land Resources Conservation Commission

CALHOUN COUNTY is in the central part of South Carolina (fig. 1). It has a population of about 12,753. St. Matthews is the county seat and has a population of about 2,231. The total area of Calhoun County is about 392 square miles, or 250,900 acres.

Calhoun County is bounded on the south by Orangeburg County and on the west by Lexington County. It is separated from Richland County to the north and Sumter County to the northeast by the Congaree River. It is separated from Clarendon County to the east by Lake Marion.

Calhoun County is in three provinces, or major land resource areas (MLRAs), of the Coastal Plain *(3)*. About 30 percent of the county is in the Carolina and Georgia Sandhills MLRA. This area is in the northwestern part of the county. The highest elevation in the county, about 430 feet above sea level, occurs in this area, northwest of the intersection of State Road 31 and Interstate Highway 26. Most of the soils are well drained to excessively drained and are sandy. Local relief is in tens of feet.

About 60 percent of the county is in the Southern Coastal Plain MLRA. This area is mainly in the central and southeastern parts of the county. The lowest elevation in the

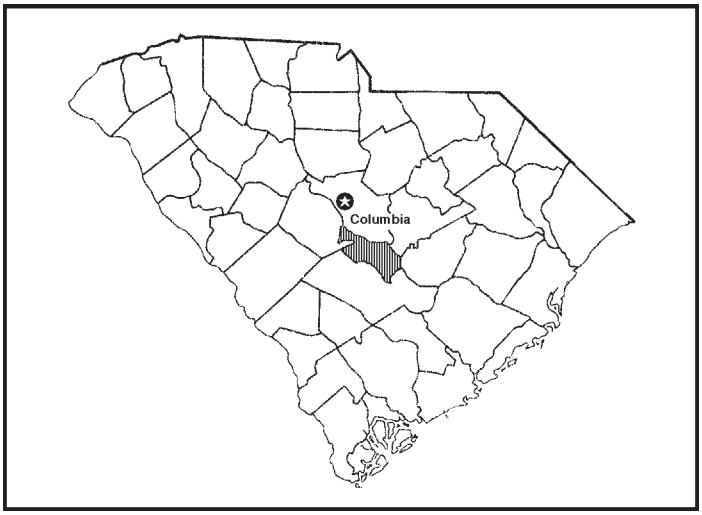


Figure 1.—Location of Calhoun County in South Carolina.

county, about 78 feet above sea level, occurs in this area, along the shore of Lake Marion at Poplar Creek Landing. Most of the soils are moderately well drained or well drained. Local relief is in tens of feet.

About 10 percent of the county is in the Atlantic Coast Flatwoods MLRA. This area is in the southeastern tip of the county. The soils are poorly drained to well drained. Local relief ranges mainly from a few feet to 10 or 20 feet.

Although Calhoun County is mostly rural, it has good roads that provide access to Columbia and Charleston. More than half of the county is woodland. The rest is used as cropland or pasture.

General Nature of the County

This section provides general information about the survey area. It briefly discusses the history and climate of Calhoun County.

History

Calhoun County was named after John C. Calhoun, a South Carolina statesman. It is not one of the original counties of South Carolina. It was formed on February 14, 1908, from parts of Orangeburg and Lexington Counties *(4)*.

The Congaree and Santee Rivers, which form the northern borders of the county, were named after the Indians who lived along their banks. The first known settler in the survey area was George Sterling, an Indian trader who arrived in 1704. French Huguenots and English had early settlements in the area. Groups of German-Swiss settlers first arrived in the 1730's.

In 1781, during the Revolutionary War, British forces occupied the plantation home, "Mount Joseph," of Rebecca Motte. They built defensive positions around it and called the area Fort Motte *(4)*.

In 1850, Totness, a summer resort village, became the first incorporated town in the survey area. In 1865, St. Matthew's Parish, which occupied much of the survey area, was established. The town of St. Matthews was established on March 24, 1876, from an area originally chartered as Lewisville *(4)*.

Agriculture was and remains the driving force in the economy of Calhoun County. Cotton and soybeans are the main cash crops. The county often is the leading producer statewide of these crops on a per acre basis. Pecans, timber products, small grains, and swine production are also important to the farm economy. Horse training and breeding are becoming a major business because of the county's favorable climate. Tourism is also economically significant.

Climate

Calhoun County is on the upper Coastal Plain of South Carolina. Its climate is characterized as humid and subtropical.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Orangeburg, South Carolina, in the period 1951 to 1980. Weather conditions at Orangeburg are representative of weather conditions in Calhoun County.

The average daily maximum and minimum temperatures range from 75.0 degrees F to 51.5 degrees, respectively. The average seasonal temperature varies from 46.3 degrees in winter to 79.1 degrees in summer. The annual extreme temperatures range from a high of 107 degrees in July 1952 to a low of 6 degrees in December 1962.

The total annual precipitation is 47.59 inches. Precipitation is greatest in July. The total precipitation during the growing season (April through October) is 29.46 inches, or about 62 percent of the total annual precipitation. The driest period is from mid October through mid November. In 2 years out of 10, precipitation during the growing

season is 14.5 inches or less. The heaviest 1-day rainfall during the period of record was 6.61 inches in September 1979. The total annual snowfall generally is less than 2 inches. A record snowfall of 17.2 inches occurred in February 1973. Table 2 provides data on the probability of precipitation.

The length of the growing season is influenced by temperature. Growing degree days are commonly used to describe the growth of crops during the frost free period. Table 3 provides data on growing degree units. Table 4 provides information on freeze dates and freeze periods. The average growing season, or frost free period, is 229 days. The annual total number of growing degree days exceeding a base temperature of 50 degrees is 5,599. During the period April through October, the total number of growing degree days exceeding a base temperature of 50 degrees is 3,928. Table 5 provides information on number of degree days for selected base temperatures.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils for specified uses. Soil scientists observed the steepness, length, and shape of slopes; the general pattern of drainage; the kinds of crops and native plants growing on the soils; 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 from 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 in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their 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-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. 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 are generally 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 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 assure 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.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by two or three kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. 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 soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns 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 (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

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

General Soil Map Units

The general soil map at the back of this publication 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 and some minor soils. It is named for the major soils. The soils making up one 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 be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or a 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.

Each map unit is rated for cultivated crops, woodland, and urban uses. Cultivated crops are those grown extensively in the survey area. Woodland refers to areas of native or introduced trees. Urban uses include residential, commercial, and industrial developments.

Soils of the Carolina and Georgia Sandhills

These soils are excessively drained to well drained and are mainly on nearly level to sloping uplands. Local relief is in tens of feet. Soils of this group make up about 28 percent of the county.

1. Troup-Fuquay-Alpin

Excessively drained to well drained, sandy soils that have a loamy or sandy subsoil

In this map unit, the landscape typically has moderate relief. It mainly consists of nearly level and gently sloping, broad ridges and includes the adjacent side slopes, which are separated by well defined drainageways. Slopes generally are rolling, are short or medium in length, and range from 0 to 10 percent.

This map unit makes up about 28 percent of the county. It is about 40 percent Troup soils, 18 percent Fuquay soils, 16 percent Alpin soils, and 26 percent soils of minor extent.

Troup soils are on nearly level and gently sloping, broad, convex ridges and the adjacent side slopes. Typically, the surface layer is brownish coarse sand. The subsurface layer is brownish and yellowish coarse sand. The subsoil is reddish sandy loam.

Fuquay soils are on nearly level and gently sloping, broad ridges. Typically, the surface and subsurface layers are brownish sand. The subsoil is brownish sandy clay loam and sandy clay and contains iron-rich nodules in the lower part.

Alpin soils are on nearly level to sloping, broad, convex ridges and the adjacent side slopes. Typically, the surface layer is brownish sand. The subsurface layer is yellowish sand. The subsoil is grayish sand that has thin bands of brownish loamy sand.

Of minor extent in this map unit are Vaucluse, Ailey, and Totness soils. Vaucluse and Ailey soils are on the steeper side slopes. Totness soils are on flood plains.

This map unit is mainly used as woodland. About 12 percent of the acreage is cleared and used for row crops, pasture, or hay. The cleared areas are mostly on the Fuquay soils.

The soils in this map unit are suited or poorly suited to corn, soybeans, and small grains. The major management problems are droughtiness, a low nutrient-holding capacity, and soil blowing. Maintaining crop residue on or near the surface increases moisture retention and the content of organic matter. Planting row crops and windbreaks perpendicular to wind direction, planting cover crops, and leaving crop residue on the surface help to control soil blowing on large fields.

These soils are suited or well suited to pasture and hay. Coastal bermudagrass and bahiagrass grow well if the soils are properly managed and fertilized. Proper stocking rates, pasture rotation, and restricted grazing during dry periods help to keep the pasture in good condition.

These soils are suited to woodland. Common trees are loblolly pine and longleaf pine. The sandy texture of the soils is a moderate limitation affecting the use of equipment. This limitation can be reduced by using wide-tired or crawler-type equipment. A moderate seedling mortality rate that is caused by droughtiness can be reduced by planting in furrows and by controlling competing vegetation.

These soils are suited or well suited to homesite development. The Fuquay soils have a severe limitation affecting septic tank absorption fields because of slow permeability in the subsoil. This limitation can be reduced by increasing the size of the absorption field.

Soils of the Southern Coastal Plain

These soils are well drained and are on nearly level to sloping uplands. Local relief is in tens of feet. Soils of this group make up about 57 percent of the county.

2. Dothan-Fuquay-Orangeburg

Well drained, sandy soils that have a loamy subsoil

In this map unit, the landscape typically has moderate relief. It consists of nearly level to sloping, narrow to broad ridges and the adjacent side slopes. Slopes generally are smooth, convex, and medium in length. They range from 0 to 10 percent. This unit includes sources of many well defined drainageways having narrow flood plains.

This map unit makes up about 32 percent of the county. It is about 25 percent Dothan soils, 20 percent Fuquay soils, 18 percent Orangeburg soils, and 37 percent soils of minor extent.

Dothan soils are on nearly level and gently sloping, convex ridges and the adjacent side slopes. Typically, the surface and subsurface layers are brownish loamy sand. The subsoil is brownish and yellowish sandy clay loam and sandy clay. It contains iron-rich nodules in the lower part.

Fuquay soils are on nearly level and gently sloping, convex ridges and side slopes. Typically, the surface and subsurface layers are brownish sand. The subsoil is brownish sandy clay loam and sandy clay. It contains iron-rich nodules in the lower part.

Orangeburg soils are on nearly level to sloping, convex, broad ridges and the adjacent side slopes. Typically, the surface layer is brownish loamy sand. The subsurface layer is yellowish loamy sand. The subsoil is reddish sandy clay loam.

Of minor extent in this map unit are Troup, Vaucluse, Suffolk, and Rains soils. Troup soils are on the sandier, broad ridges. Suffolk soils are on broad ridges at intermediate

elevations. Vaucluse soils are on the steeper side slopes. Rains soils are in depressions.

This map unit is mainly used as woodland. About 28 percent of the acreage is cleared and used for row crops, small grains, pasture, or hay.

The soils in this map unit are suited or well suited to corn, soybeans, and small grains. Erosion is a hazard on sloping fields. Conservation tillage, contour farming, and terraces help to control runoff and erosion.

These soils are well suited to pasture and hay. Coastal bermudagrass and bahiagrass grow well if the soils are properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

These soils are suited or well suited to woodland. Common trees are loblolly pine and longleaf pine. The main concern in producing and harvesting timber is a moderate seedling mortality rate in areas of the sandier Fuquay soils, which is caused by droughtiness. The seedling mortality rate can be reduced by planting in furrows and by controlling competing vegetation.

These soils are suited or well suited to homesite development. Moderately slow or slow permeability is a moderate or severe limitation affecting septic tank absorption fields. This limitation can be reduced by enlarging the absorption field.

3. Faceville-Orangeburg

Well drained, loamy or sandy soils that have a clayey or loamy subsoil

In this map unit, the landscape typically has moderate relief. It consists of broad to narrow, nearly level to sloping ridges that are separated by well defined drainageways. Slopes generally are smooth, convex, and medium in length but can range to complex, rolling, and short. They range from 0 to 10 percent.

This map unit makes up about 25 percent of the county. It is about 27 percent Faceville soils, 18 percent Orangeburg soils, and 55 percent soils of minor extent.

Faceville soils are at the highest elevations on broad, convex ridges and the adjacent side slopes. Typically, the surface layer is brownish fine sandy loam. The subsoil is reddish clay and sandy clay.

Orangeburg soils commonly are at the slightly lower elevations but also occur on broad ridges and the adjacent side slopes. Typically, the surface layer is brownish loamy sand. The subsurface layer is yellowish loamy sand. The subsoil is reddish sandy clay loam.

Of minor extent in this map unit are Greenville, Norfolk, Lucy, and Rains soils. Greenville soils are at the highest elevations on very broad ridges. Norfolk soils are at intermediate elevations. Lucy soils are on sandy ridges. Rains soils are in depressions.

This map unit is mainly used as woodland. About 42 percent of the acreage is cleared and used for row crops, small grains, pasture, or hay.

The soils in this map unit are well suited to cotton, corn, soybeans, and small grains. Erosion is a hazard on the more sloping fields. Conservation tillage, contour farming, and terraces help to control runoff and erosion.

These soils are well suited to pasture and hay. Coastal bermudagrass and bahiagrass grow well if the soils are properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

These soils are well suited to woodland. Loblolly pine is a common tree.

These soils are suited or well suited to homesite development.

Soils of the Atlantic Coast Flatwoods

These soils are moderately well drained to poorly drained and are on broad flats and in depressions. Most drainageways in areas of these soils are poorly defined, but a few drainageways that have narrow flood plains are well defined. Local relief ranges

mainly from a few feet to 10 or 20 feet. Soils of this group make up about 9 percent of the county.

4. Goldsboro-Rains-Lynchburg

Moderately well drained to poorly drained, sandy and loamy soils that have a loamy subsoil

In this map unit, the landscape typically has little relief. It consists of broad, nearly level and gently sloping ridges that are dissected by shallow drainageways and depressions. Slopes generally are long and smooth. They range from 0 to 6 percent.

This map unit makes up about 9 percent of the county. It is about 21 percent Goldsboro soils, 20 percent Rains soils, 17 Lynchburg soils, and 42 percent soils of minor extent.

Goldsboro soils are at the higher elevations on broad ridges and upland flats. Typically, the surface layer is grayish loamy sand. The subsurface layer is brownish sandy loam. The subsoil is sandy clay loam and fine sandy loam. It is yellowish in the upper part and brownish and grayish in the lower part.

Rains soils are at the lowest elevations in depressions and broad drainageways. Typically, the surface layer is grayish sandy loam. The subsurface layer is grayish fine sandy loam. The subsoil is grayish sandy clay loam.

Lynchburg soils are on low, broad interstream divides or slightly depressed upland flats. Typically, the surface layer is grayish loamy sand. The subsurface layer is brownish loamy sand. The subsoil is sandy clay loam. The upper part of the subsoil is brownish. The lower part is grayish and has mottles in shades of brown or red.

Of minor extent in this map unit are Dothan, Noboco, Norfolk, and Coxville soils. Dothan, Noboco, and Norfolk soils are at the highest elevations. Coxville soils are in depressions.

This map unit is mainly used as woodland. About 54 percent of the acreage is cleared and used for row crops, pasture, or hay. The cleared areas are mostly on the better drained soils.

The soils in this map unit are suited or well suited to corn, soybeans, and small grains. The more poorly drained soils at the lower elevations, however, require drainage to consistently produce high yields. Drainage can include open ditches, tile drains, or a combination of these measures. On all of the soils, returning crop residue to the soil helps to maintain good tilth, increases the rate of water infiltration, and improves yields. Planting row crops and windbreaks perpendicular to wind direction, planting cover crops, and leaving crop residue on the surface help to control soil blowing on large fields.

These soils are suited or well suited to pasture and hay. The better drained soils are well suited to improved bermudagrass, and the more poorly drained soils are well suited to bahiagrass. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition. In areas of the more poorly drained soils, shallow surface drains are needed to produce good yields.

These soils are well suited to woodland. Loblolly pine is a common tree. Seedlings grow well on the better drained soils if competing vegetation is controlled. The more poorly drained soils have a high site index, but seedling mortality and equipment limitations are severe if excess surface water is not removed. Plant competition and a hazard of windthrow are also severe limitations. Plant competition can be reduced by proper site preparation. Trees are subject to windthrow because of a high water table, which partially restricts rooting depth.

These soils are suited to very poorly suited to homesite development. Wetness is the main limitation, especially on the more poorly drained soils at the lower elevations. It is a severe limitation affecting septic tank absorption fields. Additions of suitable fill material or a specially designed septic system can help to overcome this limitation.

The better drained soils at the higher elevations have fewer limitations affecting homesite development and other engineering uses.

Soils of the Major Flood Plains and Terraces

These soils are on terraces and flood plains near creeks and streams, including the Four Hole Swamp and the Congaree River. Drainageways are well defined to poorly defined. Soils of this group make up about 6 percent of the county.

5. Eunola-Paxville

Moderately well drained and very poorly drained, sandy and loamy soils that have a loamy subsoil

In this map unit, the landscape typically has slight relief. It consists of broad, nearly level ridges and broad depressional areas. Most drainageways in this map unit are poorly defined. Slopes generally are smooth and medium in length. They are less than 2 percent.

This map unit makes up about 1 percent of the county. It is about 50 percent Eunola soils, 39 percent Paxville soils, and 11 percent soils of minor extent.

Eunola soils are on nearly level stream terraces of the Congaree River. Typically, the surface layer is grayish loamy sand. The subsoil is sandy clay loam. It is brownish in the upper part and grayish in the lower part. The substratum is grayish loamy sand.

Paxville soils are in depressions on stream terraces of the Congaree River. Typically, the surface layer is black loam and coarse sandy loam. The upper part of the subsoil is grayish and brownish sandy clay loam. The lower part is grayish coarse sandy loam.

Of minor extent in this map unit are Congaree, Chenneby, and Johnston soils. Congaree and Chenneby soils are at the higher elevations on flood plains. Johnston soils are at the lowest elevations.

This map unit is mainly used as woodland. About 15 percent of the acreage is cleared and used for row crops, pasture, or hay. The cleared areas are mostly on the better drained soils.

The soils in this map unit are well suited or suited to corn, soybeans, and small grains. The more poorly drained soils at the lower elevations require drainage to consistently produce high yields. Drainage can include open ditches, tile drains, or a combination of these measures. On all of the soils, returning crop residue to the soil helps to maintain good tilth, increases the rate of water infiltration, and improves yields. Planting row crops and windbreaks perpendicular to wind direction, planting cover crops, and leaving crop residue on the surface help to control soil blowing on large fields.

These soils are well suited or suited to pasture and hay. The better drained soils are well suited to improved bermudagrass, and the more poorly drained soils are suited to bahiagrass. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition. In areas of the more poorly drained soils, shallow surface drains are needed to produce good yields.

These soils are well suited to woodland. Loblolly pine is a common tree. Seedlings grow well on the better drained soils if competing vegetation is controlled. The more poorly drained soils have a high site index, but seedling mortality and equipment limitations are severe if excess surface water is not removed.

These soils are poorly suited or very poorly suited to homesite development. Wetness is the main limitation, especially on the more poorly drained soils at the lower elevations. It is a severe limitation affecting septic tank absorption fields. Additions of suitable fill material or a specially designed septic system can help to overcome this

limitation. The better drained soils have fewer limitations affecting homesite development and other engineering uses.

6. Congaree-Chenneby

Well drained and somewhat poorly drained, loamy soils that have a loamy or silty subsoil

In this map unit, the landscape typically has little relief. It consists of flood plains in the northern part of the county along the Congaree River. Slopes are less than 1 percent.

This map unit makes up about 4 percent of the county. It is about 64 percent Congaree soils, 18 percent Chenneby soils, and 18 percent soils of minor extent.

Congaree soils are at the higher elevations on flood plains, commonly adjacent to the Congaree River. Typically, the surface layer is brownish loam. The substratum is brownish silt loam, fine sandy loam, and sandy clay loam. It is mottled in the lower part.

Chenneby soils are at the lower elevations on flood plains, commonly adjacent to upland areas away from the Congaree River. Typically, the surface layer is brownish silt loam. The subsoil also is brownish silt loam. It has gray mottles in the lower part. The substratum is grayish silt loam.

Of minor extent in this map unit are Mullers and Johnston soils. Mullers soils are at the lower elevations, and Johnston soils are elevations below those of Mullers soils.

This map unit is mainly used as woodland. About 8 percent of the acreage is cleared and used for row crops, pasture, or hay. The cleared areas are mostly on the better drained Congaree soils.

The soils in this map unit are well suited to poorly suited to most agricultural uses, such as row crops and pasture. The better drained soils at the higher elevations can produce excellent yields, but flooding may delay planting or harvesting in some years. The poorly drained soils at the lower elevations have a greater hazard of flooding and a wetness limitation.

These soils are well suited to woodland. Common trees are loblolly pine, sweetgum, and yellow-poplar. Equipment limitations and seedling mortality are caused by the wetness and flooding and are the main concerns in producing and harvesting timber. These limitations can be minimized by using water-control measures, using wide-tired equipment, planting on raised beds, controlling competing vegetation, and operating equipment during the drier periods.

These soils are very poorly suited to homesite development. The wetness and the hazard of flooding are very severe limitations. These limitations can only be partially reduced by major reclamation projects.

7. Grifton-Elloree

Poorly drained, loamy and sandy soils that have a loamy subsoil

In this map unit, the landscape typically has little or no relief. It consists of flood plains near creeks and streams, including Four Hole Swamp and Flea Bite Creek. The soils in this map unit are mostly alkaline and are frequently flooded. They have water on or at the surface during most of the year. Slopes are less than 1 percent.

This map unit makes up about 1 percent of the county. It is about 52 percent Grifton soils, 35 percent Elloree soils, and 13 percent soils of minor extent.

Grifton soils are on well defined flood plains. Typically, the surface and subsurface layers are grayish fine sandy loam. The subsoil is grayish sandy clay loam and sandy loam. The substratum is grayish loamy fine sand and fine sand.

Elloree soils are on well defined flood plains. Typically, the surface layer is grayish loamy sand. The subsurface layer is grayish sand. The subsoil is grayish fine sandy loam and sandy clay loam. The substratum is grayish fine sandy loam.

This map unit is almost entirely used for native water-tolerant hardwoods (fig. 2).

Of minor extent in this map unit are Johnston soils. These soils are at the lowest elevations, commonly adjacent to terraces.

The soils in this map unit are very poorly suited to most agricultural uses, such as row crops and pasture. Wetness and the hazard of flooding are severe limitations. These limitations can only be partially reduced by major reclamation projects. Because of these limitations, this map unit generally is not cleared or used for row crops, pasture, or hay.

These soils are well suited to woodland. Common trees are loblolly pine, sweetgum, and yellow-poplar. Equipment limitations and seedling mortality are caused by the wetness and flooding and are the main concerns in producing and harvesting timber. These limitations can be minimized by using water-control measures, using wide-tired equipment, controlling competing vegetation, planting on raised beds, and operating equipment during the drier periods.

These soils are very poorly suited to homesite development. The wetness and the hazard of flooding are very severe limitations. These limitations can only be partially reduced by major reclamation projects.

Broad Land Use Considerations

The soils in Calhoun County vary widely in their suitability for major land uses. About 26 percent of the land in the county is used for cultivated crops, mainly soybeans, cotton, corn, and small grains. Areas of cropland are scattered throughout the county but are concentrated to some extent in general soil map units 2, 3, and 4.

Figure 2.—Dwarf palmetto thrives on Grifton and Elloree soils, frequently flooded, which have relatively high pH levels.

Soils in map unit 1 are dominantly sandy and require more land use treatments than other soils to produce good yields. Soils in map units 5, 6, and 7 are in very low areas and are occasionally to frequently flooded. They are very poorly suited to cropland.

About 2 percent of the county is used for pasture and hay. The soils in general soil map units 1, 2, 3, and 4 are suited or well suited to this purpose. Mild temperatures and moderately high rainfall enhance the suitability of the soils for adapted pasture grasses. Soils in map units 5, 6, and 7 are occasionally to frequently flooded. They are poorly suited to pasture and hay.

About 72 percent of the county is woodland. Soils in general soil map units 2, 3, 4, 5, and 6 are well suited to pines. Soils in map unit 1 are somewhat droughty, but they commonly produce satisfactory to good yields. Soils in map unit 7 are frequently flooded. They are only fairly suited to poorly suited to woodland.

A small percentage of the county is urban or built-up land or miscellaneous areas. Soils in general soil map units 1, 2, and 3 are well suited to urban development. Soils in map unit 4 have limitations caused by wetness, but small areas are suitable for building site development. Soils in map units 5, 6, and 7 are very poorly suited to urban uses because of flooding.

The potential for wildlife habitat is generally high for areas throughout the county. Soils in general soil map units 2, 3, and 4 are generally suited to habitat for openland wildlife. Soils in map units 1, 5, and 6 are generally suited to habitat for woodland wildlife and, in areas that have been cleared, to habitat for openland wildlife. Soils in map unit 7 are poorly drained and frequently flooded. They provide suitable habitat for wetland wildlife.

Detailed Soil Map Units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under the heading “Use and Management of the Soils.”

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil 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 or of the underlying material, 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 or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, 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, Orangeburg loamy sand, 2 to 6 percent slopes, is a phase of the Orangeburg series.

Some map units are made up of two or more major soils. These map units are called soil complexes or undifferentiated groups.

A *soil complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Ailey-Vaucluse complex, 6 to 15 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. Grifton and Elloree soils, frequently flooded, is an undifferentiated group in this survey area.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

Table 6 gives the acreage and proportionate extent of each map unit. Other tables (see “Contents”) 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.

AeB—Ailey sand, 0 to 6 percent slopes

This nearly level and gently sloping, well drained soil is on side slopes along drainageways of the Coastal Plain. Slopes are generally 3 or 4 percent. They are convex and smooth to irregular in shape and are about 100 to 300 feet long. Individual areas mainly range from 10 to 100 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—brownish sand

Subsurface layer:
7 to 29 inches—brownish sand

Subsoil:
29 to 40 inches—yellowish sandy loam
40 to 52 inches—yellowish sandy clay loam that is dense, compact, and slightly cemented in 40 percent of the mass

Substratum:
52 to 68 inches—reddish sandy loam

Included with this unit in mapping are small areas of Alpin, Troup, Pelion, and Vaucluse soils. The excessively drained Alpin soils and the well drained Troup soils have a sandy surface layer that is thicker than that of the Ailey soil. They are in the slightly higher areas. The well drained Pelion and Vaucluse soils have a sandy surface layer that is thinner than that of the Ailey soil. They are along slope breaks. Dissimilar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate in the upper part of the subsoil and slow in the lower part
Available water capacity: Low
Runoff: Slow
Erosion hazard: Slight
Depth to high water table: More than 6 feet

Most of this map unit is used as woodland or pasture. A few small areas are used as cropland.

This Ailey soil is poorly suited to row crops and small grains. The major management concerns are droughtiness and a low nutrient-holding capacity. Leaving crop residue on or near the surface helps to conserve moisture. Fertilizers are more efficient if they are applied at intervals rather than used in a single application.

This soil is suited to hay and pasture. Improved bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, and restricted use during dry periods help to keep the pasture in good condition.

This soil is suited to woodland. Longleaf pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation, seedling mortality, and a hazard of windthrow. The sandy texture of the soil is a moderate limitation affecting the use of equipment. This limitation can be reduced by using wide-tired or crawler-type equipment. Planting high-quality seedlings in shallow furrows on the contour can increase plant survival rates. Trees are subject to windthrow because of the compact lower part of the subsoil, which partially restricts rooting depth.

This soil is suited to urban development. The slow permeability in the lower part of the subsoil, however, is a severe limitation affecting septic tank absorption fields. This

limitation can be reduced by enlarging the absorption field. The soil has slight limitations affecting dwellings without basements and small commercial buildings.

AeC—Ailey sand, 6 to 10 percent slopes

This sloping, well drained soil is on side slopes along drainageways of the Coastal Plain. Slopes are generally 6 to 9 percent. They are convex and smooth to irregular in shape and are about 50 to 100 feet long. Individual areas mainly range from 75 to 200 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—brownish sand

Subsurface layer:
7 to 29 inches—brownish sand

Subsoil:
29 to 40 inches—yellowish sandy loam
40 to 52 inches—yellowish sandy clay loam that is dense, compact, and slightly cemented in 40 percent of the mass

Substratum:
52 to 68 inches—reddish sandy loam

Included with this unit in mapping are small areas of Alpin, Troup, Pelion, and Vaucluse soils. The excessively drained Alpin soils and the well drained Troup soils have a sandy surface layer that is thicker than that of the Ailey soil. They are in the slightly higher areas. The well drained Pelion and Vaucluse soils have a sandy surface layer that is thinner than that of the Ailey soil. They are along slope breaks. Dissimilar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Moderate in the upper part of the subsoil and slow in the lower part
Available water capacity: Low
Runoff: Medium
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Most of this map unit is used as woodland or pasture. A few small areas are used as cropland.

This Ailey soil is poorly suited to row crops and small grains. The major management concerns are erosion, droughtiness, and a low nutrient-holding capacity. Conservation tillage, contour farming, terraces, and strip crops help to control runoff and erosion. Leaving crop residue on or near the surface also helps to conserve moisture. Fertilizers are more efficient if they are applied at intervals rather than used in a single application.

This soil is suited to hay and pasture. Improved bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, and restricted use during dry periods help to keep the pasture in good condition.

This soil is suited to woodland. Longleaf pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation, seedling mortality, and a hazard of windthrow. The sandy texture of the soil is a moderate limitation affecting the use of equipment. This limitation can be reduced by using wide-tired or crawler-type equipment. Planting high-quality seedlings in shallow furrows on the contour can

increase plant survival rates. Trees are subject to windthrow because of the compact lower part of the subsoil, which partially restricts rooting depth.

This soil is poorly suited to urban development. The slow permeability in the lower part of the subsoil is a severe limitation affecting septic tank absorption fields. This limitation can be reduced by enlarging the absorption field. Installing absorption lines on the contour and using step down boxes in absorption lines improve the functioning of septic tank absorption fields. Installing a tile drainage system upslope can intercept and divert perched ground water that flows laterally towards the absorption field. The soil has slight limitations affecting dwellings without basement. The slope is a moderate limitation affecting small commercial buildings. Revegetating disturbed areas on construction sites as soon as possible helps to control erosion.

AmD—Ailey-Vaucluse complex, 6 to 15 percent slopes

This map unit consists of small areas of an Ailey soil and a Vaucluse soil that are so intermingled that they cannot be separated in mapping. This map unit is about 40 to 60 percent Ailey soil and 30 to 50 percent Vaucluse soil. These well drained soils are on side slopes parallel to drainageways of the Coastal Plain. Generally, the Ailey soil is on narrow ridgetops and shoulder slopes and the Vaucluse soil is on the adjacent back slopes. Slopes generally range from 9 to 13 percent. They are irregular in shape, undulating, and complex and are about 75 to 200 feet long. Individual areas mainly range from 30 to 150 acres in size.

Typically, the sequence, depth, and composition of the layers of this Ailey soil are as follows—

Surface layer:
0 to 7 inches—brownish sand

Subsurface layer:
7 to 29 inches—brownish sand

Subsoil:
29 to 40 inches—yellowish sandy clay loam
40 to 52 inches—yellowish sandy clay loam that is dense, compact, and slightly cemented in 40 percent of the mass

Substratum:
52 to 68 inches—reddish sandy loam

Typically, the sequence, depth, and composition of the layers of this Vaucluse soil are as follows—

Surface layer:
0 to 5 inches—brownish loamy sand

Subsurface layer:
5 to 19 inches—brownish sand

Subsoil:
19 to 28 inches—brownish sandy clay loam
28 to 48 inches—mottled brownish and reddish sandy clay that is dense, compact, and slightly cemented in 50 percent of the mass
48 to 62 inches—reddish, yellowish, and brownish coarse sandy loam and sandy loam

Included with this unit in mapping are small areas of Alpin, Troup, and Pelion soils. The excessively drained Alpin soils and the well drained Troup soils have a sandy surface layer that is thicker than that of the Ailey and Vaucluse soils. They are in the

slightly higher areas. The well drained Pelion soils have a sandy surface layer that is thinner than that of the Ailey and Vaucluse soils. They are along slope breaks. Dissimilar inclusions make up about 20 percent of this map unit.

Important soil properties of the Ailey soil—

Permeability: Moderate in the upper part of the subsoil and slow in the lower part
Available water capacity: Low
Runoff: Medium
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Important soil properties of the Vaucluse soil—

Permeability: Moderately slow in the upper part of the subsoil and slow in the lower part
Available water capacity: Moderate
Runoff: Rapid
Erosion hazard: Severe
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. A few areas are used as pasture or for row crops.

These Ailey and Vaucluse soils are poorly suited to row crops and small grains. The major management concerns are a hazard of erosion, droughtiness, and a low nutrient-holding capacity. Conservation tillage, contour farming, terraces, and strip crops help to control runoff and erosion. Leaving crop residue on or near the surface also helps to conserve moisture. Fertilizers are more efficient if they are applied at intervals rather than used in a single application.

These soils are suited to hay and pasture. Improved bermudagrass and bahiagrass grow well if the soils are properly managed and fertilized. Proper stocking rates, pasture rotation, and restricted use during dry periods help to keep the pasture in good condition.

These soils are suited to woodland. Longleaf pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation, seedling mortality, and a hazard of windthrow. The sandy texture of the soils is a moderate limitation affecting the use of equipment. This limitation can be reduced by using wide-tired or crawler-type equipment. Planting high-quality seedlings in shallow furrows on the contour can increase plant survival rates. Trees are subject to windthrow because of the compact lower part of the subsoil, which partially restricts rooting depth.

These soils are poorly suited to urban development. The slow permeability in the lower part of the subsoil is a severe limitation affecting septic tank absorption fields. This limitation can be partially reduced by enlarging the absorption field. Installing absorption lines on the contour and using step down boxes in absorption lines improve the functioning of septic tank absorption fields. Installing a tile drainage system upslope can intercept and divert perched ground water that flows laterally towards the absorption field. The slope is a severe limitation affecting small commercial buildings and a moderate limitation affecting dwellings without basements. Cutting and filling or major changes to building design can reduce this limitation. Revegetating disturbed areas on construction sites as soon as possible helps to control erosion.

AmE—Ailey-Vaucluse complex, 15 to 25 percent slopes

This map unit consists of small areas of an Ailey soil and a Vaucluse soil that are so intermingled that they cannot be separated at the scale selected for mapping. The map unit is about 40 to 60 percent Ailey soil and 30 to 50 percent Vaucluse soil. These well

drained soils are on narrow side slopes parallel to drainageways of the Coastal Plain. Slopes generally range from 16 to 19 percent. They are irregular in shape, undulating, and complex and are about 50 to 150 feet long. Individual areas mainly range from 20 to 125 acres in size.

Typically, the sequence, depth, and composition of the layers of this Ailey soil are as follows—

Surface layer:
0 to 7 inches—brownish sand

Subsurface layer:
7 to 29 inches—brownish sand

Subsoil:
29 to 40 inches—yellowish sandy clay loam
40 to 52 inches—yellowish sandy clay loam that is dense, compact, and slightly cemented in 40 percent of the mass

Substratum:
52 to 68 inches—reddish sandy loam

Typically, the sequence, depth, and composition of the layers of this Vaucluse soil are as follows—

Surface layer:
0 to 5 inches—brownish loamy sand

Subsurface layer:
5 to 19 inches—brownish sand

Subsoil:
19 to 28 inches—brownish sandy clay loam
28 to 48 inches—mottled brownish and reddish sandy clay that is dense, compact, and slightly cemented in 50 percent of the mass
48 to 62 inches—reddish, yellowish, and brownish coarse sandy loam and sandy loam

Included with this unit in mapping are small areas of Alpin, Troup, and Pelion soils. The excessively drained Alpin soils and the well drained Troup soils have a sandy surface layer that is thicker than that of the Ailey and Vaucluse soils. They are in the slightly higher areas. The well drained Pelion soils have a sandy surface layer that is thinner than that of the Ailey and Vaucluse soils. They are along slope breaks. Dissimilar inclusions make up about 15 percent of this map unit.

Important soil properties of the Ailey soil—

Permeability: Moderate in the upper part of the subsoil and slow in the lower part
Available water capacity: Low
Runoff: Medium
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Important soil properties of the Vaucluse soil—

Permeability: Moderately slow in the upper part of the subsoil and slow in the lower part
Available water capacity: Moderate
Runoff: Rapid
Erosion hazard: Severe
Depth to high water table: More than 6 feet

Most of this map unit is native woodland consisting of loblolly pine and longleaf pine.

These Ailey and Vaucluse soils are very poorly suited to row crops and small grains. The slope and the hard, compact subsoil cause a severe hazard of erosion that is difficult to reduce.

These soils are poorly suited to hay and pasture. The slope and the hard, compact subsoil cause a severe hazard of erosion, especially in galled areas around feeding troughs. Improved bermudagrass and bahiagrass grow well if the soils are properly managed and fertilized.

These soils are suited to woodland. Longleaf pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation, seedling mortality, and a hazard of windthrow. The sandy texture of the soils is a moderate limitation affecting the use of equipment. This limitation can be reduced by using wide-tired or crawler-type equipment. Planting high-quality seedlings in shallow furrows on the contour can increase plant survival rates. Trees are subject to windthrow because of the compact lower part of the subsoil, which partially restricts rooting depth.

These soils are very poorly suited to urban development. The slope and the slow permeability in the subsoil are severe limitations affecting septic tank absorption fields. These limitations are difficult to reduce. Installing absorption lines on the contour and using step down boxes in absorption lines improve the functioning of septic tank absorption fields. Installing a tile drainage system upslope can intercept and divert perched ground water that flows laterally towards the absorption field. The slope is a severe limitation affecting dwellings without basements and small commercial buildings. Cutting and filling or major changes to building design can reduce this limitation. Revegetating disturbed areas on construction sites as soon as possible helps to control erosion.

ApB—Alpin sand, 0 to 6 percent slopes

This excessively drained soil is on broad ridges and gentle side slopes of the Coastal Plain and the Sandhills. Slopes generally are about 2 to 4 percent. They are smooth and convex and are about 100 to 400 feet long. Individual areas mainly range from 100 to 300 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches—brownish sand

Subsurface layer:
3 to 62 inches—yellowish sand

Subsoil:
62 to 80 inches—grayish sand that has brownish bands of loamy sand

Included with this unit in mapping are small areas of Troup, Ailey, Lucy, Pelion, and Vaucluse soils. Troup soils are in landscape positions similar to those of the Alpin soil but have a deep subsoil containing a higher content of clay. Ailey and Lucy soils are on the more rolling landscapes. They have a loamy subsoil. Pelion and Vaucluse soils are not sandy. They are along slope breaks. Dissimilar inclusions make up about 10 percent of this map unit.

Important soil properties—

Permeability: Rapid
Available water capacity: Very low
Runoff: Slow

Erosion hazard: Slight
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. Most cleared areas are used as pasture, but a few areas are used for row crops or small grains.

This Alpin soil is poorly suited to row crops and small grains. Because of the sandy texture of the soil, drought-tolerant crops should be planted. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Leaving crop residue on or near the surface helps to conserve moisture and increase the content of organic matter. Stripcropping and conservation tillage help to control soil blowing. Fertilizers are more efficient if they are applied at intervals rather than used in a single application.

This soil is suited to hay and pasture. Coastal bermudagrass and improved bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition. Using this soil for pasture or hay can also effectively control soil blowing.

This soil is suited to woodland. Longleaf pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation and seedling mortality. Using tracked vehicles or wide-tired equipment reduces the equipment limitation. Seedling mortality caused by droughtiness can be reduced by planting seedlings in furrows and by controlling competing vegetation.

This soil is well suited to urban development. It has slight limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings.

ApC—Alpin sand, 6 to 10 percent slopes

This excessively drained soil is on side slopes parallel to drainageways of the Coastal Plain and the Sandhills. Slopes generally are about 6 to 8 percent. They are smooth and convex and are about 75 to 300 feet long. Individual areas mainly range from 50 to 200 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches—brownish sand

Subsurface layer:
3 to 62 inches—yellowish sand

Subsoil:
62 to 82 inches—grayish sand that has brownish bands of loamy sand

Included with this unit in mapping are small areas of Troup, Ailey, and Vaucluse soils. Troup soils are in landscape positions similar to those of the Alpin soil but have a deep subsoil containing a higher content of clay. Ailey soils are on the more rolling landscapes. They have a loamy subsoil. Vaucluse soils are not sandy. They are along slope breaks. Dissimilar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Rapid
Available water capacity: Very low
Runoff: Slow
Erosion hazard: Slight or moderate
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. Most cleared areas are used as pasture.

This Alpin soil is poorly suited to row crops and small grains. Because of the sandy texture of the soil, drought-tolerant crops should be planted. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Leaving crop residue on or near the surface helps to conserve moisture and increase the content of organic matter. Stripcropping and conservation tillage help to control soil blowing. Fertilizers are more efficient if they are applied at intervals rather than used in a single application. All tillage should be on the contour.

This soil is suited to hay and pasture. Coastal bermudagrass and improved bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition. Using this soil for pasture or hay can also effectively control soil blowing.

This soil is suited to woodland. Longleaf pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation and seedling mortality. Using tracked vehicles or wide-tired equipment reduces the equipment limitation. Seedling mortality caused by droughtiness can be minimized by planting seedlings in furrows and by controlling competing vegetation.

This soil is well suited to urban development. It has slight limitations affecting septic tank absorption fields and dwellings without basements. The slope is a severe limitation affecting small commercial buildings. Cutting and filling or changes to building design can reduce this limitation.

ApD—Alpin sand, 10 to 15 percent slopes

This excessively drained soil is on side slopes parallel to drainageways of the Coastal Plain and the Sandhills. Slopes generally are about 10 to 13 percent. They are convex and smooth to irregular in shape and are about 15 to 300 feet long. Individual areas mainly range from 30 to 200 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches—brownish sand

Subsurface layer:
3 to 62 inches—yellowish sand

Subsoil:
62 to 82 inches—grayish sand that has brownish bands of loamy sand

Included with this unit in mapping are small areas of Ailey and Vaucluse soils. Ailey soils are on the more rolling landscapes. They have a loamy subsoil. Vaucluse soils are not sandy. They are along slope breaks. Dissimilar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Rapid
Available water capacity: Very low
Runoff: Medium
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. Most cleared areas are used as pasture.

This Alpin soil is very poorly suited to row crops and small grains. The strongly sloping, irregular landscape of this map unit commonly limits the use of equipment.

Other management concerns include droughtiness, a low nutrient-holding capacity, and soil blowing.

This soil is suited to hay and pasture. Coastal bermudagrass and improved bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition. Using this soil for pasture or hay also can effectively control soil blowing.

This soil is suited to woodland. Longleaf pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation and seedling mortality. Using tracked vehicles or wide-tired equipment reduces the equipment limitation. Seedling mortality caused by droughtiness can be minimized by planting seedlings in furrows on the contour and by controlling competing vegetation.

This soil is suited to urban development. The slope is a moderate limitation affecting septic tank absorption fields and dwellings without basements and a severe limitation affecting small commercial buildings. Installing absorption lines on the contour and using step down boxes in absorption lines improve the functioning of septic tank absorption fields. Properly designing buildings can reduce the need for cutting and filling.

Ce—Chenneby silt loam, occasionally flooded

This somewhat poorly drained soil is on flood plains of the Congaree River and in smaller, narrow areas along creeks and drainageways in the northern part of the county. Slopes are less than 1 percent. Individual areas mainly range from 50 to 400 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches—brownish silt loam

Subsoil:
3 to 36 inches—brownish silt loam that has gray mottles in the lower part

Substratum:
36 to 62 inches—grayish silt loam

Included with this unit in mapping are small areas of Congaree, Mullers, Ogeechee, and Paxville soils. The well drained Congaree soils are in the higher areas near the river. The somewhat poorly drained Mullers soils, the poorly drained Ogeechee soils, and the very poorly drained Paxville soils are in the lower areas adjacent to uplands. Also included are Chenneby soils that have a surface layer of loam. Dissimilar and similar inclusions make up about 25 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Slight
High water table: At a depth of 1.0 to 2.5 feet in winter and early spring
Flooding: Occasional flooding for very brief to long periods in late winter and spring

Most of this map unit is native woodland. A few areas are cleared and used for row crops or pasture.

This Chenneby soil is suited to row crops and small grains and to hay and pasture. It produces good yields under proper management. Occasional flooding for brief

periods and wetness are the major limitations affecting all farming operations. A complete drainage system that includes protection from flooding can reduce these limitations. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized.

This soil is well suited to woodland. Loblolly pine and yellow-poplar are common trees. Plant competition is a severe limitation. Site preparation, prescribed burning, and cutting and girdling can minimize plant competition and help to ensure the maximum growth of seedlings. Occasional flooding for very brief to long periods can delay some operations.

This soil is very poorly suited to urban development. The flooding and wetness are severe limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. Dikes can be used to protect housing areas from flooding. Building houses on stilts can elevate them above flood levels.

Co—Congaree loam, occasionally flooded

This well drained soil is mostly on flood plains of the Congaree River. Slopes generally are less than 2 percent. Individual areas mainly range from 200 to 1,000 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches—brownish loam

Substratum:
9 to 80 inches—brownish loam, fine sandy loam, and sandy clay loam having grayish mottles in the lower part

Included with this unit in mapping are small areas of Chenneby, Mullers, Ogeechee, and Johnston soils. These soils are not well drained and are in the lower landscape positions. Also included are Congaree soils that have a surface layer of sandy loam. Dissimilar and similar inclusions make up about 10 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Slight
High water table: At a depth of 2.5 to 4.0 feet in winter and early spring
Flooding: Common flooding for brief periods in winter and spring

Most of this map unit is native woodland. A few areas are cleared and used for row crops or pasture.

This Congaree soil is well suited to row crops and small grains and to hay and pasture. It produces good yields under proper management. Common flooding for brief periods is the major management concern affecting all farming operations. Dikes can be used to protect some areas of cropland from flooding. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized.

This soil is well suited to woodland. Loblolly pine and yellow-poplar are common trees. The major management concerns are an equipment limitation and plant competition. Using tracked vehicles or wide-tired equipment reduces the equipment limitation. Plant competition can be minimized by proper site preparation. Common flooding for brief periods can delay some operations.

This soil is very poorly suited to urban development. The flooding is a severe limitation affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. Dikes can be used to protect housing areas from flooding. Building houses on stilts can elevate them above flood levels.

Cx—Coxville sandy loam

This nearly level, poorly drained soil is in slightly depressed areas and along drainageways of the Coastal Plain. Slopes are less than 1 percent. Individual areas mainly range from 5 to 100 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches—grayish sandy loam

Subsoil:
6 to 10 inches—grayish sandy clay loam that has brownish mottles
10 to 62 inches—grayish clay loam, clay, and sandy clay having reddish and brownish mottles

Included with this unit in mapping are small areas of Lynchburg soils. These somewhat poorly drained soils are in the slightly higher landscape positions. They make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderately slow
Available water capacity: High
Runoff: Slow to ponded
Erosion hazard: Slight
High water table: Within a depth of 1.0 foot in winter and spring

About half of this map unit is native woodland. Several areas have been cleared and are used for row crops or pasture.

This Coxville soil is suited to row crops and small grains. The wetness and the moderately slow permeability are the major management concerns. Surface drainage and land shaping help to remove excess surface water and lower the high water table.

This soil is suited to hay and pasture. The wetness is the major management concern. Surface drainage and land shaping help to remove excess water. Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and sweetgum are common trees. Plant competition and a hazard of windthrow are severe limitations, and an equipment limitation and seedling mortality are moderate limitations. Site preparation, prescribed burning, and cutting and girdling can minimize plant competition and help to ensure the maximum growth of seedlings. Using wide-tired or tracked equipment helps to reduce the equipment limitation. Planting seedlings on raised beds improves survival rates. Trees are subject to windthrow because of the restricted rooting depth caused by the high water table.

This soil is very poorly suited to urban development. The wetness and the moderately slow permeability are severe limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. These limitations generally preclude the use of onsite sewage disposal systems. Installing tile drainage systems around the foundation, adding suitable fill material, and land shaping so that surface water is directed away from buildings help to reduce the wetness on sites for dwellings without basements and small commercial buildings.

DoA—Dothan loamy sand, 0 to 2 percent slopes

This nearly level, well drained soil is on broad, smooth ridges in the uplands of the Coastal Plain. Slopes are generally 1 or 2 percent. They are convex and smooth to irregular in shape and are about 100 to 300 feet long. Individual areas mainly range from 100 to 300 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface and subsurface layers:
0 to 13 inches—brownish loamy sand

Subsoil:
13 to 40 inches—brownish sandy clay loam
40 to 62 inches—yellowish sandy clay loam that has brown, red, and gray mottles and contains significant amounts of plinthite

Included with this unit in mapping are small areas of Fuquay soils. These soils are in the slightly higher areas. They have a sandy surface layer that is thicker than that of the Dothan soil. They make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate in the upper part of the subsoil and moderately slow in the lower part
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Slight
High water table: Perched at a depth of 3 to 5 feet in winter and early spring

Most of this map unit is used for row crops or small grains. A few areas are used as pasture or native woodland.

This Dothan soil is well suited to row crops and small grains. There are no major management concerns. The soil produces good yields under proper management. Returning crop residue to the soil helps to maintain good tilth and the content of organic matter. Planting row crops and windbreaks perpendicular to the prevailing wind direction and leaving crop residue on the surface help to control soil blowing on large fields.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Plant competition is a moderate limitation. It can be reduced by proper site preparation. Loblolly pine is a common tree.

This soil is suited to urban development. The perched high water table and the moderately slow permeability in the lower part of the subsoil are severe limitations affecting septic tank absorption fields. These limitations can be reduced by specially designing the base of the absorption field and by increasing the size of the absorption field. The soil has slight limitations affecting dwellings without basements and small commercial buildings.

DoB—Dothan loamy sand, 2 to 6 percent slopes

This gently sloping, well drained soil is on side slopes along drainageways of the Coastal Plain. Slopes are generally 2 to 4 percent. They are convex and smooth to irregular in shape and are about 50 to 250 feet long. Individual areas mainly range from 20 to 300 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface and subsurface layers:
0 to 13 inches—brownish loamy sand

Subsoil:
13 to 40 inches—brownish sandy clay loam
40 to 62 inches—yellowish sandy clay loam that has brown, red, and gray mottles and contains significant amounts of plinthite

Included with this unit in mapping are small areas of Fuquay soils. These soils are in the slightly higher areas. They have a sandy surface layer that is thicker than that of the Dothan soil. They make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate in the upper part of the subsoil and moderately slow in the lower part
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Moderate
High water table: Perched at a depth of 3 to 5 feet in winter and early spring

Most of this map unit is used for row crops or small grains. A few areas are used as pasture or native woodland.

This Dothan soil is well suited to row crops and small grains. Erosion is a hazard. Conservation tillage, contour farming, stripcropping, and terraces help to control runoff and erosion. Tilth and fertility are improved by returning crop residue to the soil.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Plant competition is a moderate limitation. It can be reduced by proper site preparation. Loblolly pine is a common tree.

This soil is suited to urban development. The perched high water table and the moderately slow permeability in the lower part of the subsoil are severe limitations affecting septic tank absorption fields. These limitations can be reduced by specially designing the base of the absorption field and by increasing the size of the absorption field. Absorption lines should be installed on the contour. The soil has slight limitations affecting dwellings without basements and small commercial buildings.

EnA—Eunola loamy sand, 0 to 2 percent slopes

This moderately well drained, nearly level soil is on stream terraces of the Coastal Plain. Slopes generally are 0 or 1 percent. They are smooth and convex and are about 200 to 800 feet long. Individual areas mainly range from 15 to 200 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches—grayish loamy sand

Subsoil:
5 to 11 inches—brownish sandy loam
11 to 32 inches—brownish sandy clay loam
32 to 41 inches—grayish sandy loam

Substratum:
41 to 64 inches—grayish and brownish loamy coarse sand

Included with this unit in mapping are small areas of Fuquay, Noboco, and Goldsboro soils. Fuquay and Noboco soils are in the higher areas. Goldsboro soils generally do not occur on stream terraces. Dissimilar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Slight
High water table: At a depth of 1.5 to 2.5 feet in winter and early spring

Most of this map unit is native woodland. A few areas are cleared and used for row crops or small grains.

This Eunola soil is well suited to row crops and small grains. The major management concern is wetness. Random subsurface drains or surface drainage can reduce this limitation. Returning crop residue to the soil helps to maintain good tilth and the content of organic matter.

This soil is well suited to hay and pasture. Bahiagrass grows well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, and deferred grazing during wet periods help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and sweetgum are common trees. Plant competition is a moderate limitation. Proper site preparation can control initial plant competition, and spraying can control subsequent growth. A moderate equipment limitation can be reduced by using tracked vehicles or wide-tired equipment.

This soil is suited to poorly suited to urban development. The wetness is a severe limitation affecting septic tank absorption fields. Using filter lines installed at a shallow depth and fill material or selecting an alternate septic system help to improve the functioning of absorption fields. The wetness is a moderate limitation affecting dwellings without basements and small commercial buildings. It can be reduced by installing tile drainage systems around the foundation and by land shaping so that surface water is directed away from buildings.

FaA—Faceville fine sandy loam, 0 to 2 percent slopes

This nearly level, well drained soil is in broad areas on ridges of the Coastal Plain. Slopes generally are 1 or 2 percent. They are smooth and convex and are about 100 to 300 feet long. Individual areas mainly range from 15 to 150 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches—brownish fine sandy loam

Subsoil:
8 to 61 inches—reddish clay and sandy clay

Included with this unit in mapping are small areas of Norfolk, Orangeburg, and Dothan soils. Norfolk and Orangeburg soils are in landscape positions similar to those of the Faceville soil but have less clay in the subsoil. Dothan soils are on the slightly more rolling landscapes. They have iron-rich nodules in the lower part of the subsoil. Also included are Faceville soils that have a surface layer of loamy sand or sandy loam. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Slight
Depth to high water table: More than 6 feet

Most of this map unit is used for row crops or small grains. A few areas are used as pasture or woodland.

This Faceville soil is well suited to row crops and small grains. There are no major management concerns. The soil produces good yields under proper management. Returning crop residue to the soil helps to maintain good tilth and the content of organic matter.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Plant competition is a moderate limitation. It can be reduced by proper site preparation. Loblolly pine is a common tree.

This soil is well suited to urban development. It has only slight limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings.

FaB—Faceville fine sandy loam, 2 to 6 percent slopes

This well drained, gently sloping soil is on narrow ridgetops and side slopes on uplands of the Coastal Plain. Slopes generally are 2 to 5 percent. They are smooth and convex and are about 75 to 400 feet long. Individual areas mainly range from 10 to 100 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches—brownish fine sandy loam

Subsoil:
8 to 61 inches—reddish clay and sandy clay

Included with this unit in mapping are small areas of Norfolk, Orangeburg, and Dothan soils. Norfolk and Orangeburg soils are in landscape positions similar to those of the Faceville soil but have less clay in the subsoil. Dothan soils are on the slightly more rolling landscapes. They have iron-rich nodules in the lower part of the subsoil. Also included are Faceville soils that have a surface layer of loamy sand or sandy loam. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Most of this map unit is used for row crops or small grains. A few areas are used as pasture or woodland.

This Faceville soil is well suited to row crops and small grains. It produces good yields under proper management. Erosion is a hazard. Conservation tillage, contour farming, and terraces help to control runoff and erosion and conserve moisture (fig. 3).

Figure 3.—An area of Faceville fine sandy loam, 2 to 6 percent slopes. Planting skip-row cotton on the contour helps to control erosion on this soil.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Plant competition is a moderate limitation. It can be reduced by proper site preparation. Loblolly pine is a common tree.

This soil is well suited to urban development. It has only slight limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings.

FaC—Faceville fine sandy loam, 6 to 10 percent slopes

This well drained, sloping soil is on narrow side slopes parallel to drainageways of the Coastal Plain. Slopes generally are 6 to 8 percent. They are smooth and convex and are about 50 to 150 feet long. Individual areas mainly range from 10 to 60 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches—brownish fine sandy loam

Subsoil:
8 to 61 inches—reddish clay and sandy clay

Included with this unit in mapping are small areas of Orangeburg, Ailey, and Vaucluse soils. Orangeburg soils are in landscape positions similar to those of the

Faceville soil but have less clay in the subsoil. Ailey and Vaucluse soils are on the more rolling landscapes. Also included are Faceville soils that have a surface layer of loamy sand or sandy loam. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. A few areas are used as pasture or cropland.

This Faceville soil is suited to row crops and small grains. The major management concern is the hazard of erosion. All tillage should be on the contour. Conservation tillage, contour stripcropping, terraces, and grassed waterways help to control runoff and erosion.

This soil is well suited to hay and pasture. Improved bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. Few limitations affect producing and harvesting timber, but plant competition is a moderate limitation. Plant competition can be reduced by proper site preparation. Harvesting methods that disturb the soil as little as possible help to control erosion. These methods include moving logs and plowing firebreaks on the contour and locating skid trails, log landings, and temporary logging roads so that they do not lead to drainageways.

This soil is suited to urban development. It has slight limitations affecting septic tank absorption fields.

Installing absorption lines on the contour and using step down boxes in absorption lines improve the functioning of absorption fields. During extended periods of rainfall, effluent from onsite sewage disposal systems can seep to the surface at points downslope. The slope is a moderate limitation affecting small commercial buildings. The soil has slight limitations affecting dwellings without basements. Revegetating disturbed areas on construction sites as soon as possible helps to control erosion.

FuB—Fuquay sand, 0 to 6 percent slopes

This well drained soil is on broad ridgetops and side slopes of the Coastal Plain. Slopes generally are less than 4 percent. They are smooth and convex and are about 150 to 400 feet long. Individual areas mainly range from about 20 to 300 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—brownish sand

Subsurface layer:
7 to 23 inches—yellowish brown sand

Subsoil:
23 to 41 inches—brownish sandy clay loam
41 to 63 inches—brownish sandy clay loam that contains significant amounts of plinthite

Included with this unit in mapping are small areas of Ailey soils. These soils are on the more rolling landscapes. They have a compact and brittle subsoil. They make up about 10 percent of this map unit.

Important soil properties—

Permeability: Moderate in the upper part of the subsoil and slow in the lower part
Available water capacity: Low
Runoff: Slow
Erosion hazard: Slight
High water table: Perched at a depth of 4 to 6 feet in winter and early spring

Most of this map unit is native woodland. Large areas are cleared and used as cropland. A few areas are used as pasture.

This Fuquay soil is suited to row crops and small grains. The major management concerns are droughtiness (fig. 4), a low nutrient-holding capacity, and soil blowing. Conservation tillage and cover crops help to control soil blowing, conserve moisture, and increase the content of organic matter. Contour farming helps to control erosion in areas of long, smooth slopes. Fertilizers are more efficient if they are applied at intervals rather than used in a single application.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition. Using this soil for pasture or hay can also effectively control soil blowing.

This soil is suited to woodland. Longleaf pine and loblolly pine are common trees. The main concerns in producing and harvesting timber are an equipment limitation, seedling mortality, and plant competition. Using tracked vehicles or wide-tired equipment reduces the equipment limitation. A moderate seedling mortality rate

Figure 4.—Corn on Fuquay sand, 0 to 6 percent slopes. Irrigation helps to improve yields.

caused by droughtiness can be reduced by planting in furrows and by controlling competing vegetation. Plant competition can be reduced by proper site preparation.

This soil is suited to urban development. The slow permeability in the subsoil, however, is a severe limitation affecting septic tank absorption fields. This limitation can be reduced by increasing the size of the absorption field. The soil has slight limitations affecting dwellings without basements and small commercial buildings.

GoA—Goldsboro loamy sand, 0 to 2 percent slopes

This moderately well drained soil is on broad interstream divides on the Coastal Plain. Slopes are generally 0 or 1 percent. They are smooth and convex and are about 150 to 300 feet long. Individual areas mainly range from 10 to 200 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface and subsurface layers:
0 to 12 inches—brownish loamy sand

Subsoil:
12 to 55 inches—brownish sandy clay loam that has red and gray mottles in the lower part
55 to 62 inches—mottled grayish and reddish sandy clay loam

Included with this unit in mapping are small areas of Coxville, Ogeechee, Rains, Lynchburg, Noboco, and Norfolk soils. The poorly drained Coxville, Ogeechee, and Rains soils are at the lowest elevations. The somewhat poorly drained Lynchburg soils are at the slightly lower elevations. The well drained Noboco and Norfolk soils are at the higher elevations. Dissimilar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Slight
High water table: At a depth of 2 to 3 feet in winter and early spring

Most of this map unit is used for row crops or pasture. A few areas are native woodland.

This Goldsboro soil is well suited to row crops and small grains. The major management concern is wetness. Random subsurface drains or surface drainage can reduce wetness. Returning crop residue to the soil helps to maintain good tilth and the content of organic matter.

This soil is well suited to hay and pasture. Bahiagrass grows well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, and deferred grazing during wet periods help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation. Proper site preparation can control initial plant competition, and spraying can control subsequent growth.

This soil is suited to poorly suited to urban development. The wetness is a severe limitation affecting septic tank absorption fields. Using filter lines installed at a shallow depth and fill material or selecting an alternate septic system helps to improve the functioning of absorption fields. The wetness also is a moderate limitation affecting dwellings without basements and small commercial buildings. It can be reduced by installing tile drainage systems around the foundation and by land shaping so that surface water is directed away from buildings.

GrA—Greenville fine sandy loam, 0 to 2 percent slopes

This well drained, nearly level soil is on broad upland ridges of the Coastal Plain. Slopes generally are 1 or 2 percent. They are smooth and convex and are about 100 to 300 feet long. Individual areas mainly range from 20 to 200 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—reddish fine sandy loam

Subsoil:
7 to 68 inches—reddish sandy clay and clay

Included with this unit in mapping are small areas of Norfolk, Orangeburg, and Dothan soils. Norfolk and Orangeburg soils are in landscape positions similar to those of the Greenville soil but have less clay in the subsoil. Dothan soils are on the slightly more rolling landscapes. They have iron-rich nodules in the lower part of the subsoil. Also included are Greenville soils that have a surface layer of sandy loam. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Slight
Depth to high water table: More than 6 feet

Most of this map unit is used for row crops or small grains. A few areas are used as pasture or woodland.

This Greenville soil is well suited to row crops and small grains. There are no major management concerns. The soil produces good yields under proper management. Returning crop residue to the soil helps to maintain good tilth and the content of organic matter.

This soil is well suited to hay and pasture. There are no major management concerns. Coastal bermudagrass and improved bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation. Site preparation, prescribed burning, and cutting and girdling can minimize plant competition and help to ensure the maximum growth of seedlings.

This soil is well suited to urban development. The moderately permeable subsoil is a moderate limitation affecting septic tank absorption fields. This limitation can be reduced by increasing the size of the absorption field. The soil has slight limitations affecting dwellings without basements and small commercial buildings.

GrB—Greenville fine sandy loam, 2 to 6 percent slopes

This well drained, gently sloping soil is on narrow ridgetops and side slopes of the Coastal Plain. Slopes generally are 2 to 5 percent. They are smooth and convex and are about 50 to 200 feet long. Individual areas mainly range from 15 to 150 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—reddish fine sandy loam

Subsoil:
7 to 68 inches—reddish sandy clay and clay

Included with this unit in mapping are small areas of Dothan, Norfolk, and Orangeburg soils. Dothan soils are on the slightly more rolling landscapes. They have iron-rich nodules in the lower part of the subsoil. Norfolk and Orangeburg soils are in landscape positions similar to those of the Greenville soil but have less clay in the subsoil. Also included are Greenville soils that have a surface layer of sandy loam. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Most of this map unit is used for row crops or small grains. A few small areas are used as pasture or woodland.

This Greenville soil is well suited to row crops and small grains. It produces good yields under proper management. Erosion is a hazard. Conservation tillage, contour farming, and terraces help to control runoff and erosion and conserve moisture.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation. Site preparation, prescribed burning, and cutting and girdling can minimize plant competition and help to ensure the maximum growth of seedlings.

This soil is well suited to urban development. The moderately permeable subsoil is a moderate limitation affecting septic tank absorption fields. This limitation can be reduced by increasing the size of the absorption field. Absorption lines should be installed on the contour. The soil has slight limitations affecting dwellings without basements and small commercial buildings.

GrC—Greenville fine sandy loam, 6 to 10 percent slopes

This well drained, sloping soil is on narrow side slopes parallel to drainageways of the Coastal Plain. Slopes generally are 6 to 8 percent. They are smooth and convex and are about 50 to 150 feet long. Individual areas mainly range from 10 to 50 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—reddish fine sandy loam

Subsoil:
7 to 68 inches—reddish sandy clay and clay

Included with this unit in mapping are small areas of Orangeburg, Ailey, and Vaucluse soils. Orangeburg soils are in landscape positions similar to those of the Greenville soil but have less clay in the subsoil. Ailey and Vaucluse soils are on the more rolling landscapes. Also included are Greenville soils that have a surface layer of

sandy loam. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Severe
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. A few areas are used as pasture or cropland.

This Greenville soil is suited to row crops and small grains. The major management concern is the hazard of erosion. All tillage should be on the contour. Conservation tillage, contour stripcropping, terraces, and grassed waterways help to control runoff and erosion.

This soil is well suited to hay and pasture. Improved bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation. Site preparation, prescribed burning, and cutting and girdling can minimize plant competition and help to ensure the maximum growth of seedlings. Harvesting methods that disturb the soil as little as possible help to control erosion. These methods include moving logs and plowing firebreaks on the contour and locating skid trails, log landings, and temporary logging roads so that they do not lead to drainageways.

This soil is poorly suited to urban development. The moderately slow permeability in the subsoil is a moderate limitation affecting septic tank absorption fields. This limitation can be reduced by increasing the size of the absorption field. Installing absorption lines on the contour and using step down boxes in absorption lines improve the functioning of absorption fields. During extended periods of rainfall, effluent from onsite sewage disposal systems can seep to the surface at points downslope. The slope is a slight limitation affecting dwellings without basements and a moderate limitation affecting small commercial buildings. Revegetating disturbed areas on construction sites as soon as possible helps to control erosion.

Gt—Grifton and Elloree soils, frequently flooded

This map unit consists of areas of a Grifton soil and an Elloree soil. These soils have the same interpretations for use and management because they are subject to the same frequency and duration of flooding. These poorly drained soils are on narrow to broad flood plains of the Coastal Plain. They are frequently flooded for brief to long periods in winter and early spring. Slopes are less than 1 percent. Individual areas mainly range from about 100 to 500 acres in size but can range to almost 1,000 acres. A map unit may include only one of the soils.

Typically, the sequence, depth, and composition of the layers of this Grifton soil are as follows—

Surface layer:
0 to 5 inches—grayish fine sandy loam

Subsurface layer:
5 to 9 inches—grayish fine sandy loam

Subsoil:
9 to 42 inches—grayish sandy clay loam and sandy loam

Substratum:
42 to 64 inches—grayish loamy sand and fine sand

Typically, the sequence, depth, and composition of the layers of this Elloree soil are as follows—

Surface layer:
0 to 9 inches—grayish loamy sand

Subsurface layer:
9 to 29 inches—grayish sand

Subsoil:
29 to 48 inches—grayish fine sandy loam and sandy clay loam

Substratum:
48 to 62 inches—grayish fine sandy loam

Included with this unit in mapping are small areas of Johnston and Ogeechee soils. Johnston soils are in the lower, wetter areas. Ogeechee soils are in areas near tributaries of small streams. Dissimilar inclusions make up about 20 percent of this map unit.

Important soil properties of the Grifton soil—

Permeability: Slow
Available water capacity: High
Runoff: Very slow
Erosion hazard: Slight
High water table: Near the surface in winter and early spring
Flooding: Frequent flooding for brief to long periods in winter and spring

Important soil properties of the Elloree soil—

Permeability: Moderately rapid
Available water capacity: Moderate
Runoff: Very slow
Erosion hazard: Slight
High water table: At or near the surface in winter and early spring
Flooding: Frequent flooding for brief to long periods in winter and spring

Most of this map unit is native woodland.

These Grifton and Elloree soils are very poorly suited to row crops and poorly suited to pasture. Wetness and the hazard of flooding are severe limitations that can only be reduced by major reclamation projects.

These soils are well suited to the production of water-tolerant hardwoods. An equipment limitation, seedling mortality, plant competition, and a hazard of windthrow are caused by the wetness and flooding and are the main concerns in producing and harvesting timber. These limitations can be reduced by using water-control measures, using wide-tired equipment, controlling competing vegetation, planting seedlings on raised beds, and operating equipment during the drier periods. Trees are subject to windthrow because of the high water table, which partially restricts rooting depth.

These soils are very poorly suited to urban development. Wetness and the hazard of flooding are severe limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. These limitations can be only partially reduced by major reclamation projects.

Jo—Johnston fine sandy loam, frequently flooded

This very poorly drained soil is on flood plains of the Coastal Plain and the Sandhills. It floods for brief to long periods from late fall to early summer. Slopes are less than 1 percent. Individual areas mainly range from 30 to 200 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 34 inches—black fine sandy loam

Substratum:
34 to 65 inches—grayish brown and gray loamy fine sand and sand

Included with this unit in mapping are small areas of Totness, Ogeechee, and Rains soils. These soils are in the slightly higher areas. Also included are Johnston soils that have a surface layer of sandy loam and soils that have a surface layer of muck and are in the lower, wetter areas. Dissimilar and similar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Moderately rapid in the surface layer and rapid in the underlying material
Available water capacity: Moderate
Runoff: Very slow
Erosion hazard: Slight
High water table: At or above the surface in winter and early spring
Flooding: Frequent flooding for brief to long periods from winter through summer

Most of this map unit is native woodland.

This Johnston soil is very poorly suited to row crops and small grains and poorly suited to pasture. Wetness and the hazard of flooding are severe limitations that can be only partially reduced by major flood-control and drainage measures.

This soil is well suited to the production of water-tolerant hardwoods. An equipment limitation, seedling mortality, plant competition, and a hazard of windthrow are the main concerns in producing and harvesting timber. These limitations can be minimized by using wide-tired equipment, planting seedlings on raised beds, and operating equipment during the drier periods. Trees are subject to windthrow because of the high water table, which partially restricts rooting depth.

This soil is very poorly suited to urban development. Wetness and the hazard of flooding are severe limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. These limitations can be only partially reduced by major reclamation projects.

LuB—Lucy sand, 0 to 6 percent slopes

This well drained soil is on broad ridges and side slopes of the Coastal Plain. Slopes generally are 1 to 4 percent. They are smooth and convex and are about 100 to 400 feet long. Individual areas mainly range from about 10 to 100 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface and subsurface layers:
0 to 26 inches—brownish sand

Subsoil:
26 to 63 inches—red sandy clay loam

Included with this unit in mapping are small areas of Ailey, Fuquay, Alpin, and Troup soils. Ailey and Fuquay soils are on the more rolling landscapes. Alpin and Troup soils are on the broader plane ridges. Dissimilar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Low
Runoff: Slow
Erosion hazard: Slight
Depth to high water table: More than 6 feet

Most of this map unit is used for cropland, pasture, or hay. A few areas are used for native mixed hardwoods and pines.

This Lucy soil is suited to row crops and small grains. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Leaving crop residue on or near the surface helps to control soil blowing, conserve moisture, and increase the content of organic matter. Contour farming reduces soil erosion in areas of long, smooth slopes. Fertilizers are more efficient if they are applied at intervals rather than used in a single application.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized (fig. 5). Proper stocking rates, pasture rotation, and restricted use during dry periods help to keep the pasture in good condition. Using this soil for pasture or hay can also effectively control soil blowing.

Figure 5.—An area of Lucy sand, 0 to 6 percent slopes. Coastal bermudagrass thrives on this soil because this plant has a deep rooting system.

This soil is suited to woodland. Common trees are loblolly pine and longleaf pine. The main concerns in producing and harvesting timber are an equipment limitation, seedling mortality, and plant competition. Using tracked vehicles or wide-tired equipment reduces the equipment limitation. Seedling mortality caused by droughtiness can be reduced by planting seedlings in furrows and by controlling competing vegetation. Plant competition can be reduced by proper site preparation.

This soil is well suited to urban development. It has slight limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings.

Ly—Lynchburg loamy sand

This somewhat poorly drained soil is on broad interstream divides or slightly depressional upland flats of the Coastal Plain. Slopes generally are less than 1 percent. Individual areas mainly range from 10 to 60 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches—grayish loamy sand

Subsurface layer:
3 to 7 inches—brownish loamy sand

Subsoil:
7 to 17 inches—brownish sandy loam that has gray mottles
17 to 65 inches—grayish sandy clay loam that has reddish and yellowish mottles

Included with this unit in mapping are small areas of Coxville, Rains, Goldsboro, Noboco, and Norfolk soils. Coxville and Rains soils occur in the lower landscape positions and are wetter than the Lynchburg soil. Goldsboro, Noboco, and Norfolk soils occur in the higher landscape positions and are better drained than the Lynchburg soil. Also included are Lynchburg soils that have a surface layer of sandy loam or fine loam and soils that have a substantial decrease in clay within a depth of 60 inches. Dissimilar and similar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Slight
High water table: At a depth of 0.5 foot to 1.5 feet in winter and spring

Most of this map unit is used as native woodland or cropland. A few areas are used as pasture.

This Lynchburg soil is well suited to row crops and small grains (fig. 6). Wetness is the major management concern. Surface drainage and land shaping can minimize excess surface water and help to lower the high water table.

This soil is well suited to hay and pasture. Bahiagrass grows well if the soil is properly managed and fertilized. Surface drainage is needed and can be provided by open ditches, surface drains, or a combination of these measures. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and sweetgum are common trees. The wetness causes a moderate equipment limitation and a severe hazard of plant competition. Removing excess water, using wide-tired equipment, and operating equipment during the drier periods can reduce the wetness problem.

Figure 6.—Corn on Lynchburg loamy sand. If adequately drained, this soil can produce good yields of row crops.

This soil is poorly suited to urban development. Wetness is a severe limitation affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. This limitation generally precludes the use of septic tank absorption fields.

Installing tile drainage systems around the foundation, adding suitable fill material, and land shaping so that surface water is directed away from dwellings help to reduce the wetness on sites for dwellings without basements and small commercial buildings.

Mu—Mullers silty clay loam, frequently flooded

This somewhat poorly drained soil is on flood plains of the Congaree River and in smaller, narrow areas along creeks and drainageways in the northern part of the county. Slopes are less than 1 percent. Individual areas mainly range from 50 to 400 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 2 inches—brownish silty clay loam

Subsoil:

2 to 16 inches—brownish silt loam and silty clay loam having gray and red mottles in the lower part

16 to 64 inches—grayish silty clay and clay

Included with this unit in mapping are small areas of Congaree, Chenneby, Ogeechee, and Paxville soils. The well drained Congaree soils and the somewhat poorly drained Chenneby soils are in the higher areas near the river. The poorly drained Ogeechee soils and the very poorly drained Paxville soils are in the lower areas adjacent to uplands. Also included are Mullers soils that have a surface layer of silt loam. Dissimilar and similar inclusions make up about 25 percent of this map unit.

Important soil properties—

Permeability: Slow
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Slight
High water table: At a depth of 0.5 foot to 1.5 feet in winter and early spring
Flooding: Frequent flooding for brief to long periods in winter and spring

Most of this map unit is native woodland. A few areas are cleared and used for row crops or pasture.

This Mullers soil is suited to row crops, small grains, and hay and pasture. It produces good yields under proper management. Frequent flooding and wetness are the major limitations affecting all farming operations. A complete drainage system that includes protection from flooding can reduce these limitations. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized.

This soil is well suited to woodland consisting of water-tolerant hardwoods. Plant competition, an equipment limitation, seedling mortality, and a hazard of windthrow are severe limitations. Site preparation, prescribed burning, and cutting and girdling can minimize plant competition and help to ensure the maximum growth of seedlings. Frequent flooding for brief periods can delay some operations. Trees are subject to windthrow because of the high water table, which partially restricts rooting depth. Sweetgum is a common tree.

This soil is very poorly suited to urban development. The flooding and wetness are severe limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. Dikes can be used to protect housing areas from flooding. Building houses on stilts can elevate them above flood levels.

NoA—Noboco loamy sand, 0 to 2 percent slopes

This well drained, nearly level soil is on uplands of the Coastal Plain. Slopes generally are 1 or 2 percent. They are smooth and convex and are about 100 to 400 feet long. Individual areas mainly range from 15 to 100 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches—brownish loamy sand

Subsurface layer:
8 to 17 inches—yellowish fine sand

Subsoil:
17 to 45 inches—yellowish sandy clay loam
45 to 63 inches—yellowish sandy clay loam that has gray and red mottles

Included with this unit in mapping are small areas of Dothan, Goldsboro, and Lynchburg soils. Dothan soils are on the narrower ridges. Goldsboro and Lynchburg soils are at the lower elevations. Also included are Noboco soils that have a surface layer of loamy fine sand and soils that have a substantial decrease in clay within a

depth of 60 inches and that are near slope breaks. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Slight
High water table: At a depth of 2.5 to 4.0 feet in winter and early spring

Most of this map unit is used as cropland. A few areas are used as pasture or woodland.

This Noboco soil is well suited to row crops and small grains. There are no major management concerns. Residue management, such as minimum tillage and the use of cover crops, can improve tilth and fertility.

This soil is well suited to hay and pasture. Bahiagrass and improved bermudagrass grow well if the soil is properly managed and fertilized. There are no major management concerns. Rotational grazing and annual applications of fertilizer can help to maintain good-quality forage.

This soil is suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation and can be reduced by proper site preparation.

This soil is well suited to urban development. Wetness, however, is a severe limitation affecting septic tank absorption fields. The soil has slight limitations affecting dwellings without basements and small commercial buildings.

NoB—Noboco loamy sand, 2 to 6 percent slopes

This well drained, gently sloping soil is on side slopes of the Coastal Plain. Slopes generally are 2 to 4 percent. They are smooth and convex and are about 100 to 300 feet long. Individual areas mainly range from 10 to 60 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches—brownish loamy sand

Subsurface layer:
8 to 17 inches—yellowish fine sand

Subsoil:
17 to 45 inches—yellowish sandy clay loam
45 to 63 inches—yellowish sandy clay loam that has gray and red mottles

Included with this unit in mapping are small areas of Dothan soils. These soils are on the narrower ridges. Also included are Noboco soils that have a surface layer of loamy fine sand and soils that have a substantial decrease in clay within a depth of 60 inches and that are near slope breaks. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Moderate
High water table: At a depth of 2.5 to 4.0 feet in winter and early spring

Most of this map unit is used as cropland. A few areas are used as pasture or woodland.

This Noboco soil is well suited to row crops and small grains. It produces good yields under proper management. Erosion is a hazard. Conservation tillage, contour farming, and terraces help to control runoff and erosion and conserve moisture.

This soil is well suited to hay and pasture. Bahiagrass and bermudagrass grow well if the soil is properly managed and fertilized. There are no major management concerns. Rotational grazing and annual applications of fertilizer can help to maintain good-quality forage.

This soil is well suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation and can be reduced by site preparation.

This soil is suited to urban development. Wetness, however, is a severe limitation affecting septic tank absorption fields. This limitation can be reduced by specially designing the base of the absorption field. Absorption lines should be installed on the contour. The slope is a slight limitation affecting dwellings without basements and a moderate limitation affecting small commercial buildings.

NrA—Norfolk loamy sand, 0 to 2 percent slopes

This well drained, nearly level soil is on broad uplands of the Coastal Plain. Slopes generally are 0 to 2 percent. They are smooth and convex and are about 100 to 400 feet long. Individual areas mainly range from 29 to 90 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches—brownish loamy sand

Subsurface layer:
9 to 11 inches—brownish loamy sand

Subsoil:
11 to 62 inches—brownish sandy clay loam that has red and gray mottles in the lower part

Included with this unit in mapping are small areas of Dothan and Noboco soils. Dothan soils are on the narrower ridges. Noboco soils are in the slightly lower landscape positions. Also included are Norfolk soils that have a surface layer of loamy fine sand and soils that have a substantial decrease in clay within a depth of 60 inches and that are near slope breaks. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Slight
High water table: At a depth of 4 to 6 feet in winter and early spring

Most of this map unit is used as cropland. A few small areas are used as pasture or woodland.

This Norfolk soil is well suited to row crops and small grains. There are no major management concerns. Residue management, such as minimum tillage and the use of cover crops, can improve soil fertility.

This soil is well suited to hay and pasture. Improved bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. There are no major management concerns. Rotational grazing and annual applications of fertilizer can help to maintain good-quality forage.

This soil is suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation and can be reduced by proper site preparation.

This soil is suited to urban development. Wetness and the moderate permeability in the subsoil are moderate limitations affecting septic tank absorption fields. These limitations can be reduced by specially designing the base of the absorption field and by increasing the size of the absorption field. The soil has slight limitations affecting dwelling without basements and small commercial buildings.

NrB—Norfolk loamy sand, 2 to 6 percent slopes

This well drained, gently sloping soil is on side slopes of the Coastal Plain. Slopes generally are 2 to 4 percent. They are smooth and convex and are about 75 to 400 feet long. Individual areas mainly range from 15 to 80 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches—brownish loamy sand

Subsurface layer:
9 to 11 inches—brownish loamy sand

Subsoil:
11 to 62 inches—brownish sandy clay loam that has red and gray mottles in the lower part

Included with this unit in mapping are small areas of Dothan and Noboco soils. Dothan soils are on the narrower ridges. Noboco soils are in the slightly lower landscape positions. Also included are Norfolk soils that have a surface layer of loamy fine sand and soils that have a substantial decrease in clay within a depth of 60 inches and that are near slope breaks. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Moderate
High water table: At a depth of 4 to 6 feet in winter and early spring

Most of this map unit is used as cropland. A few small areas are used as pasture or woodland.

This Norfolk soil is well suited to row crops and small grains. The major management concern is the hazard of erosion. Conservation tillage, contour farming, and terraces help to control runoff and erosion. Returning crop residue to the soil improves tilth and the content of organic matter.

This soil is well suited to hay and pasture. Bahiagrass and coastal bermudagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation and can be reduced by proper site preparation.

This soil is suited to urban development. Wetness, however, is a moderate limitation affecting septic tank absorption fields. This limitation can be reduced by specially designing the base of the absorption field. Absorption lines should be installed on the contour. The soil has slight limitations affecting dwellings without basements. The slope is a moderate limitation affecting small commercial buildings.

Og—Ogeechee loamy sand

This nearly level, poorly drained soil is in slightly depressed areas and along drainageways of the Coastal Plain. Slopes are less than 1 percent. Individual areas mainly range from 8 to 50 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—brownish loamy sand

Subsurface layer:
7 to 16 inches—grayish loamy sand

Subsoil:
16 to 40 inches—grayish sandy clay loam
40 to 53 inches—grayish sandy loam

Substratum:
53 to 64 inches—grayish loamy sand

Included with this unit in mapping are small areas of Coxville and Lynchburg soils. Coxville soils are in the lower areas. They have more clay in the subsoil than the Ogeechee soil. Lynchburg soils are in the higher areas. Also included are Ogeechee soils that have a surface layer of sandy loam. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Slight
High water table: Within a depth of 1 foot in winter and early spring

About half of this map unit is native woodland. The rest has been cleared and is used as cropland or pasture.

This Ogeechee soil is suited to row crops and small grains. The major management concern is the high water table. If drained, the soil produces good yields. Open ditches and tile drainage systems reduce wetness. The soil is well suited to these measures. Water-control structures in open ditches help to maintain desired water levels during dry periods.

This soil is suited to hay and pasture. A drainage system is needed and can be provided by using shallow surface drains. Bahiagrass grows well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

This soil is well suited to woodland. Common trees are loblolly pine and sweetgum. An equipment limitation, seedling mortality, and plant competition are the main concerns in producing and harvesting timber. These limitations can be minimized by removing excess water, using wide-tired equipment, planting seedlings on raised beds, and operating equipment during the drier periods. Plant competition can be reduced by proper site preparation.

This soil is very poorly suited to urban development. Wetness is a severe limitation affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. This limitation generally precludes the use of onsite sewage disposal systems. Installing tile drainage systems around the foundation, adding suitable fill material, and land shaping so that surface water is directed away from buildings help to reduce the wetness on sites for dwellings without basements and small commercial buildings.

OrA—Orangeburg loamy sand, 0 to 2 percent slopes

This well drained, nearly level soil is on broad ridges and uplands of the Coastal Plain. Slopes generally are 1 or 2 percent. They are smooth and convex and are about 100 to 300 feet long. Individual areas mainly range from 20 to 80 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—brownish loamy sand

Subsurface layer:
7 to 16 inches—yellowish loamy sand

Subsoil:
16 to 75 inches—reddish sandy clay loam

Included with this unit in mapping are small areas of Dothan, Faceville, and Greenville soils. Dothan soils are on the slightly more rolling landscapes. Faceville and Greenville soils are on the broader, more plane ridgetops. Also included are Orangeburg soils that have a surface layer of sand. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Most of this map unit is used for row crops or small grains. A few areas are used as pasture or woodland.

This Orangeburg soil is well suited to row crops and small grains (fig. 7). There are no major management concerns. Returning crop residue to the soil helps to maintain good tilth and the content of organic matter. Planting row crops and windbreaks perpendicular to wind direction and leaving crop residue on the surface help to control soil blowing on large fields.

This soil is well suited to hay and pasture. Bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation. This limitation can be reduced by proper site preparation.

This soil is well suited to urban development. It has slight limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings.

Figure 7.—Defoliated cotton on Orangeburg loamy sand, 0 to 2 percent slopes.

OrB—Orangeburg loamy sand, 2 to 6 percent slopes

This well drained, gently sloping soil is on side slopes of the Coastal Plain. Slopes generally are 2 to 4 percent. They are smooth and convex and are about 75 to 250 feet long. Individual areas mainly range from 15 to 60 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—brownish loamy sand

Subsurface layer:
7 to 16 inches—yellowish loamy sand

Subsoil:
16 to 75 inches—reddish sandy clay loam

Included with this unit in mapping are small areas of Ailey, Vaucluse, Faceville, and Greenville soils. Ailey and Vaucluse soils are on the more rolling landscapes. Faceville and Greenville soils are in the broader, less dissected areas. Also included are Orangeburg soils that have a surface layer of sand. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Slight
Depth to high water table: More than 6 feet

Most of this map unit is used for row crops or small grains. A few areas are used as pasture or woodland.

This Orangeburg soil is well suited to row crops and small grains. It produces good yields under proper management. Erosion is a hazard. Conservation tillage, contour farming, and terraces help to control runoff and erosion and conserve moisture.

This soil is well suited to hay and pasture. Bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation. This limitation can be reduced by proper site preparation.

This soil is well suited to urban development. It has slight limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings.

OrC—Orangeburg loamy sand, 6 to 10 percent slopes

This well drained, sloping soil is on narrow side slopes that are parallel to drainageways of the Coastal Plain. Slopes generally are 6 to 8 percent. They are smooth and convex and are about 50 to 150 feet long. Individual areas mainly range from 10 to 50 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—brownish loamy sand

Subsurface layer:
7 to 16 inches—yellowish loamy sand

Subsoil:
16 to 75 inches—reddish sandy clay loam

Included with this unit in mapping are small areas of Ailey, Vaucluse, Faceville, and Greenville soils. Ailey and Vaucluse soils are on the more rolling landscapes. Faceville and Greenville soils are in the broader, less dissected areas. Also included are Orangeburg soils that have a surface layer of sand. Dissimilar and similar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Severe
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. A few areas are cleared and used as pasture or cropland.

This Orangeburg soil is suited to row crops and small grains. The major management concern is the hazard of erosion. All tillage should be on the contour.

Conservation tillage, contour stripcropping, terraces, and grassed waterways help to control runoff and erosion.

This soil is well suited to hay and pasture. Improved bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. Plant competition is a moderate limitation. This limitation can be reduced by proper site preparation. Harvesting methods that disturb the soil as little as possible help to control erosion. These methods include moving logs and plowing firebreaks on the contour and locating skid trails, log landings, and temporary logging roads so that they do not lead to drainageways.

This soil is suited to urban development. It has slight limitations affecting septic tank absorption fields. Installing absorption lines on the contour and using step down boxes in absorption lines improve the functioning of absorption fields. The slope is a moderate limitation affecting small commercial buildings. Revegetating disturbed areas on construction sites as soon as possible helps to control erosion. The soil has slight limitations affecting dwellings without basements.

Pa—Paxville loam

This very poorly drained soil is in broad depressions on terraces along the Congaree River in the northern part of the county. Slopes generally are less than 1 percent. Individual areas mainly range from 20 to 200 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 17 inches—black loam and coarse sandy loam

Subsoil:
17 to 46 inches—grayish and brownish sandy clay loam and clay loam
46 to 61 inches—grayish coarse sandy loam

Included with this unit in mapping are small areas of Mullers, Chenneby, Chewacla, Congaree, Eunola, and Ogeechee soils. These soils are in the higher landscape positions and are better drained than the Paxville soil. Also included are Paxville soils that have a surface layer of coarse sandy loam or sandy loam. Dissimilar and similar inclusions make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Very slow or ponded
Erosion hazard: Slight
High water table: 1 foot above the surface to 1 foot below in winter and spring
Flooding: Rare flooding for brief periods in winter and spring

Most of this map unit is native woodland. A few areas are cleared and used for planted pines.

This Paxville soil is suited to row crops and small grains. Wetness is the major management concern. Surface drainage helps to remove excess surface water and helps to lower the high water table.

This soil is suited to hay and pasture. Wetness is the major management concern. Surface drainage and land shaping help to remove excess water. Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

This soil is well suited to woodland consisting of water-tolerant hardwoods. A severe equipment limitation, seedling mortality, and a hazard of windthrow are the major management concerns. Site preparation, prescribed burning, and cutting and girdling can minimize plant competition and help to ensure the maximum growth of seedlings. Using wide-tired or tracked equipment helps to reduce the equipment limitation. Planting seedlings on raised beds improves survival rates. Trees are subject to windthrow because of the high water table, which partially restricts rooting depth.

This soil is very poorly suited to urban development. The ponding is a severe limitation affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. The flooding is a severe limitation affecting dwellings without basement and small commercial buildings. These limitations can be only partially reduced by major reclamation projects.

PeB—Pelion coarse sand, 2 to 6 percent slopes

This moderately well drained soil is on narrow ridges and short side slopes of the Coastal Plain and the Sandhills. Slopes generally range from 4 to 6 percent. They are convex and smooth to irregular in shape and are about 75 to 200 feet long. Individual areas mainly range from 10 to 100 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches—brownish coarse sand
5 to 9 inches—yellowish loamy coarse sand

Subsoil:
9 to 25 inches—sandy clay loam that is yellowish in the upper part and grayish and yellowish in the lower part
25 to 57 inches—yellowish, brownish, and grayish sandy clay loam and sandy loam that are firm, compact, and brittle in the upper part

Substratum:
57 to 68 inches—yellowish loamy coarse sand

Included with this unit in mapping are small areas of Ailey, Vaucluse, and Orangeburg soils. Ailey and Vaucluse soils are on the more rolling landscapes. Orangeburg soils are on the more plane landscapes. Also included are Pelion soils that have a surface layer of sand or loamy sand. Dissimilar and similar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Moderately slow or slow
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Moderate
High water table: Perched at a depth of 1.0 to 2.5 feet in winter and early spring

Most of this map unit is native woodland. A few areas are used as pasture or for row crops.

This Pelion soil is suited to row crops and small grains. The major management concern is the hazard of erosion. Conservation tillage, contour farming, terraces, and grassed waterways help to control runoff and erosion. Crop residue left on or near the surface also helps to control runoff and maintain tilth and the content of organic matter.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation, plant competition, and a hazard of windthrow. Building roads and skid trails on the contour can reduce maintenance costs and prevent excessive erosion. Trees are commonly subject to windthrow because the dense, compacted subsoil restricts root growth. Plant competition can be reduced by proper site preparation. Using tracked vehicles or wide-tired equipment reduces the equipment limitation.

This soil is poorly suited to urban development. Wetness caused by the perched water table is a severe limitation affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. The slow permeability is also a severe limitation affecting septic tank absorption fields. The limitations affecting septic systems can be reduced by specially designing the base of the absorption field and by enlarging the absorption field. Absorption lines should be installed on the contour. Land shaping so that surface water is directed away from buildings can reduce the wetness on sites for dwellings without basements and small commercial buildings.

PeC—Pelion coarse sand, 6 to 10 percent slopes

This moderately well drained soil is on side slopes of the Coastal Plain and the Sandhills. Slopes generally range from 6 to 9 percent. They are convex and irregular in shape and are about 50 to 200 feet long. Individual areas mainly range from 10 to 90 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches—brownish coarse sand
5 to 9 inches—yellowish loamy coarse sand

Subsoil:
9 to 25 inches—sandy clay loam that is yellowish in the upper part and grayish and yellowish in the lower part
25 to 57 inches—yellowish, brownish, and grayish sandy clay loam and sandy loam that are firm, compact, and brittle in the upper part

Substratum:
57 to 68 inches—yellowish loamy coarse sand

Included with this unit in mapping are small areas of Ailey, Vaucluse, and Orangeburg soils. Ailey and Vaucluse soils are on the more rolling landscapes. Orangeburg soils are on the more plane landscapes. Also included are Pelion soils that have a surface layer of sand or loamy sand. Dissimilar and similar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Moderately slow or slow
Available water capacity: Moderate
Runoff: Rapid
Erosion hazard: Severe
High water table: Perched at a depth of 1.0 to 2.5 feet in winter and early spring

Most of this map unit is native woodland. A few areas are used as pasture.

This Pelion soil is poorly suited to row crops and small grains. The major management concern is the hazard of erosion. Tillage should be minimum. If tillage is necessary, it should be on the contour. Conservation tillage, contour farming, terraces, and grassed waterways help to control runoff and erosion. Crop residue left on or near the surface also helps to control runoff and helps to maintain tilth and the content of organic matter.

This soil is suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation, plant competition, and a hazard of windthrow. Building roads and skid trails on the contour can reduce maintenance costs and prevent excessive erosion. Trees are commonly subject to windthrow because the dense, compacted subsoil restricts root growth. Plant competition can be reduced by proper site preparation. Using tracked vehicles or wide-tired equipment reduces the equipment limitation.

This soil is poorly suited to urban development. Wetness caused by the perched water table is a severe limitation affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. The slow permeability is also a severe limitation affecting septic tank absorption fields. The limitations affecting septic systems can be reduced by specially designing the base of the absorption field and by enlarging the absorption field. Absorption lines should be installed on the contour. Land shaping so that surface water is directed away from buildings can reduce the wetness on sites for dwellings without basements and small commercial buildings.

PeD—Pelion coarse sand, 10 to 15 percent slopes

This moderately well drained soil is on narrow side slopes of the Coastal Plain and the Sandhills. Slopes generally range from 10 to 13 percent. They are convex and irregular in shape and are about 50 to 150 feet long. Individual areas mainly range from 10 to 70 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches—brownish coarse sand
5 to 9 inches—yellowish loamy coarse sand

Subsoil:
9 to 25 inches—sandy clay loam that is yellowish in the upper part and grayish and yellowish in the lower part
25 to 57 inches—yellowish, brownish, and grayish sandy clay loam and sandy loam that are firm, compact, and brittle in the upper part

Substratum:
57 to 68 inches—yellowish loamy coarse sand

Included with this unit in mapping are small areas of Ailey and Vaucluse soils. These soils are in the more rolling areas. Also included are Pelion soils that have a surface layer of sand or loamy sand. Dissimilar and similar inclusions make up about 25 percent of this map unit.

Important soil properties—

Permeability: Moderately slow or slow
Available water capacity: Moderate
Runoff: Rapid

Erosion hazard: Severe
High water table: Perched at a depth of 1.0 to 2.5 feet in winter and early spring

Most of this map unit is native woodland.

This Pelion soil is very poorly suited to row crops and small grains because of the slope and the hazard of erosion. Because of these severe limitations, the soil is better suited to pasture or woodland than to cropland.

This soil is suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Livestock grazing should be managed to protect the soil from excessive erosion.

This soil is suited to woodland. Loblolly pine is a common tree. The main concerns in producing and harvesting timber are an equipment limitation, plant competition, and a hazard of windthrow. Building roads and skid trails on the contour can reduce maintenance costs and prevent excessive erosion. Trees are commonly subject to windthrow because the dense, compacted subsoil restricts root growth. Plant competition can be reduced by proper site preparation. Using tracked vehicles or wide-tired equipment reduces the equipment limitation.

This soil is very poorly suited to urban development. Wetness caused by the perched water table is a severe limitation affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. The slow permeability in the subsoil is also a severe limitation affecting septic tank absorption fields. The limitations affecting septic systems can be reduced by specially designing the base of the absorption field and by enlarging the absorption field. Absorption lines should be installed on the contour. Land shaping so that surface water is directed away from buildings can reduce the wetness on sites for dwellings without basements and small commercial buildings. The slope is a severe limitation affecting small commercial buildings.

Ra—Rains sandy loam

This nearly level, poorly drained soil is on flats and in slightly depressional areas of the Coastal Plain. Slopes are less than 1 percent. Individual areas mainly range from 8 to 50 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—grayish sandy loam

Subsurface layer:
7 to 14 inches—grayish fine sandy loam

Subsoil:
14 to 62 inches—grayish sandy clay loam

Included with this unit in mapping are small areas of Coxville and Lynchburg soils. Coxville soils are commonly in the lower areas. They have more clay in the subsoil than the Rains soil. Lynchburg soils are in the higher areas. Also included are Rains soils that have a surface layer of fine sandy loam. Dissimilar and similar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow

Erosion hazard: Slight
High water table: Within a depth of 1.0 foot in winter and early spring

About half of this map unit is native woodland. The rest is cleared and used as cropland or pasture.

This Rains soil is suited to row crops and small grains. The major management concern is the high water table. If drained, the soil produces good yields. Open ditches and tile drainage systems can reduce wetness. This soil is well suited to these measures. Water-control structures in open ditches help to maintain desired water levels during dry periods.

This soil is suited to hay and pasture. A drainage system is needed and can be provided by using shallow surface drains. Bahiagrass grows well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

This soil is well suited to woodland. Common trees are loblolly pine and sweetgum. An equipment limitation, seedling mortality, a hazard of windthrow, and plant competition are the main concerns in producing and harvesting timber. These limitations can be minimized by removing excess water, using wide-tired equipment, planting seedlings on raised beds, and operating equipment during the drier periods. Plant competition can be reduced by proper site preparation. Trees are subject to windthrow because of the high water table, which partially restricts rooting depth.

This soil is very poorly suited to urban development. Wetness is a severe limitation affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. This limitation generally precludes the use of onsite sewage disposal systems. Installing tile drainage systems around the foundation, adding suitable fill material, and land shaping so that surface water is directed away from buildings help to reduce the wetness on sites for dwellings without basements and small commercial buildings.

SuA—Suffolk loamy sand, 0 to 2 percent slopes

This well drained, nearly level soil is on broad ridges of the Coastal Plain. Slopes generally are 1 or 2 percent. They are smooth and convex and are about 100 to 600 feet long. Individual areas mainly range from 10 to 100 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface and subsurface layers:
0 to 12 inches—brownish and yellowish loamy sand

Subsoil:
12 to 25 inches—brownish sandy clay loam
25 to 48 inches—brownish and yellowish sandy loam
48 to 66 inches—yellowish loamy sand and sand

Included with this unit in mapping are small areas of Dothan, Fuquay, Noboco, Norfolk, and Orangeburg soils. These soils are on the broader, more plane ridges. They make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow

Erosion hazard: Slight
Depth to high water table: More than 6 feet

Most of this map unit is used for row crops or small grains. A few areas are used as pasture or woodland.

This Suffolk soil is well suited to row crops and small grains. There are no major management concerns. Returning crop residue to the soil helps to maintain good tilth and the content of organic matter. Planting row crops and windbreaks perpendicular to wind direction and leaving crop residue on the surface help to control soil blowing on large fields.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. Plant competition is a limitation affecting woodland use and management. It can be reduced by proper site preparation.

This soil is well suited to urban development. The moderate permeability in the subsoil is a moderate limitation affecting septic tank absorption fields. This limitation can be reduced by enlarging the absorption field. The soil has slight limitations affecting dwellings without basements and small commercial buildings.

SuB—Suffolk loamy sand, 2 to 6 percent slopes

This well drained, gently sloping soil is on broad ridges and side slopes of the Coastal Plain. Slopes generally are 2 to 4 percent. They are smooth and convex and are about 100 to 300 feet long. Individual areas mainly range from 10 to 100 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 12 inches—brownish and yellowish loamy sand

Subsoil:
12 to 25 inches—brownish sandy clay loam
25 to 48 inches—brownish and yellowish sandy loam
48 to 66 inches—yellowish loamy sand and sand

Included with this unit in mapping are small areas of Dothan, Fuquay, Noboco, Norfolk, and Orangeburg soils. These soils are on the broader, more plane ridges and on slopes that are longer than those of the Suffolk soil. They make up about 15 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Moderate
Runoff: Slow
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Most of this map unit is used for row crops or small grains. A few areas are used as pasture or woodland.

This Suffolk soil is well suited to row crops and small grains. The major management concern is the hazard of erosion. Conservation tillage, contour farming, and terraces help to control runoff and erosion. Leaving crop residue on or near the surface helps to maintain tilth and the content of organic matter.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. Few limitations affect woodland use and management.

This soil is suited to urban development. The moderate permeability in the subsoil is a moderate limitation affecting septic tank absorption fields. This limitation can be reduced by enlarging the absorption field. The soil has slight limitations affecting dwellings without basements and small commercial buildings. Absorption lines should be installed on the contour. The slope is a moderate limitation affecting small commercial buildings.

To—Totness loamy coarse sand, frequently flooded

This poorly drained soil is on flood plains of the Coastal Plain. It is frequently flooded for brief to long periods from late fall to early summer. Slopes are less than 1 percent. Individual areas mainly range from 30 to 200 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches—grayish loamy coarse sand

Substratum:
7 to 48 inches—grayish coarse sand
48 to 74 inches—black and grayish mucky loam, loam, and coarse sandy loam
74 to 80 inches—brownish sand

Included with this unit in mapping are small areas of Johnston, Ogeechee, and Rains soils. The very poorly drained Johnston soils and unnamed soils that have a mucky surface layer are in areas that are wetter for longer periods. The poorly drained Ogeechee and Rains soils have more clay in the subsoil than the Totness soil. Also included are Totness soils that have a surface layer of coarse sand, sand, coarse sandy loam, or sandy loam. Dissimilar and similar inclusions make up about 25 percent of this map unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Low
Runoff: Very slow
Erosion hazard: Slight
High water table: At the surface in winter and early spring
Flooding: Frequent flooding for brief to long periods from winter to early summer

Most of this map unit is native woodland.

This Totness soil is very poorly suited to row crops and small grains and poorly suited to pasture. Wetness and the hazard of flooding are severe limitations that can be only partially reduced by major flood-control and drainage measures.

This soil is well suited to water-tolerant hardwoods. An equipment limitation, seedling mortality, a hazard of windthrow, and plant competition are the main concerns in producing and harvesting timber. These limitations can be minimized by using wide-tired equipment, planting seedlings on raised beds, and operating equipment during the drier periods. Plant competition can be reduced by proper site preparation. Trees are subject to windthrow because of the high water table, which partially restricts rooting depth.

This soil is very poorly suited to urban development. Wetness and the hazard of flooding are severe limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings. These limitations can be only partially reduced by major reclamation projects.

TrB—Troup coarse sand, 0 to 6 percent slopes

This somewhat excessively drained, nearly level and gently sloping soil is on broad ridges and side slopes of the Coastal Plain. Slopes generally are 1 to 4 percent. They are smooth and convex and are about 100 to 700 feet long. Individual areas mainly range from 30 to 400 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches—brownish coarse sand

Subsurface layer:
2 to 58 inches—brownish and yellowish coarse sand

Subsoil:
58 to 80 inches—reddish coarse sandy loam

Included with this unit in mapping are small areas of Ailey, Fuquay, Lucy, and Alpin soils. Ailey, Fuquay, and Lucy soils are on the more rolling landscapes. Alpin soils are on the broader, more plane landscapes. Also included are Troup soils that have a surface layer of sand. Dissimilar and similar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Rapid in the upper part and moderate in the lower part
Available water capacity: Low
Runoff: Slow
Erosion hazard: Slight
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. A few areas are cleared and used as pasture or cropland.

This Troup soil is poorly suited to row crops and small grains. Because of the sandy texture of the soil, drought-tolerant crops should be planted. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Leaving crop residue on or near the surface helps to conserve moisture and increase the content of organic matter. Stripcropping and conservation tillage help to control soil blowing. Fertilizers are more efficient if they are applied at intervals rather than used in a single application. This soil is suited to hay and pasture. Coastal bermudagrass and improved bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition. Using this soil for pasture or hay can also effectively control soil blowing.

This soil is suited to woodland. Loblolly pine and longleaf pine are common trees (fig. 8). The main concerns in producing and harvesting timber are an equipment limitation, seedling mortality, and plant competition. Using tracked vehicles or wide-tired equipment reduces the equipment limitation. Seedling mortality caused by droughtiness can be reduced by planting seedlings in furrows and by controlling competing vegetation. Plant competition can be reduced by proper site preparation.

Figure 8.—A plantation of loblolly pine that is protected by a firebreak on Troup coarse sand, 0 to 6 percent slopes.

This soil is well suited to urban development. It has slight limitations affecting septic tank absorption fields, dwellings without basements, and small commercial buildings.

TrC—Troup coarse sand, 6 to 10 percent slopes

This somewhat excessively drained, sloping soil is on side slopes of the Coastal Plain. Slopes generally are 6 to 8 percent. They are smooth and convex and are about 75 to 600 feet long. Individual areas mainly range from 25 to 400 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches—brownish coarse sand

Subsurface layer:
2 to 58 inches—brownish and yellowish coarse sand

Subsoil:
58 to 80 inches—reddish coarse sandy loam

Included with this unit in mapping are small areas of Ailey, Lucy, and Alpin soils. Ailey and Lucy soils are on the more rolling landscapes. Alpin soils are on the broader, more plane landscapes. Also included are Troup soils that have a surface layer of sand. Dissimilar and similar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Rapid in the upper part and moderate in the lower part
Available water capacity: Low
Runoff: Medium
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Most of this map unit is native woodland consisting of upland oaks, loblolly pine, and longleaf pine. A few areas are cleared and used as pasture.

This Troup soil is poorly suited to row crops and small grains. Because of the sandy texture of the soil, drought-tolerant crops should be planted. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Leaving crop residue on or near the surface helps to conserve moisture and increase the content of organic matter. Stripcropping and conservation tillage help to control soil blowing. Fertilizers are more efficient if they are applied at intervals rather than used in a single application. All tillage should be on the contour.

This soil is suited to hay and pasture. Coastal bermudagrass and improved bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition. Using this soil for pasture or hay can also effectively control soil blowing.

This soil is suited to woodland. Loblolly pine and longleaf pine are common trees. The main concerns in producing and harvesting timber are an equipment limitation, seedling mortality, and plant competition. Using tracked vehicles or wide-tired equipment reduces the equipment limitation. Seedling mortality caused by droughtiness can be reduced by planting seedlings in furrows and by controlling competing vegetation. Plant competition can be reduced by proper site preparation.

This soil is suited to urban development. It has slight limitations affecting septic tank absorption fields and dwellings without basements. The slope is a moderate limitation affecting small commercial buildings.

UdB—Udorthents, loamy, 0 to 4 percent slopes

This map unit consists of borrow pits or borrow areas from which material has been excavated for roadfill, pond dams, and highway interchanges. The soils in this unit consist of the material remaining after most of the soil layers were removed. The soil material exposed in the pits is generally loamy. It mainly consists of underlying material from areas of Ailey, Troup, Pelion, and Vaucluse soils.

Slopes in this map unit generally are 0 to 4 percent. They are irregular in shape. On the edges of the excavations, slopes commonly range to more than 50 percent. Individual areas mainly range from 8 to 200 acres in size.

Included in this unit in mapping are areas where fill material has been placed on uplands, terraces, and flood plains for construction purposes. These areas include extensively cut and filled areas, areas of sanitary landfills, and industrial sites.

The physical properties of the soils in this map unit are highly variable. Generally, the permeability is moderate to slow and the available water capacity is moderate or low.

Most of this map unit is barren or sparsely vegetated with pines and grasses. The soils are very poorly suited to row crops, small grains, pasture, and woodland because of a low level of fertility, a low content of organic matter, and the hard consistency of the soils when dry. Extensive reclamation is necessary if the soils are to be productive.

The suitability of this map unit for urban development is variable. Specific onsite investigation is needed to determine the suitabilities and limitations affecting any proposed use.

VaB—Vaucluse loamy sand, 2 to 6 percent slopes

This well drained soil is on narrow ridges and short side slopes parallel to drainageways of the Coastal Plain. Slopes generally range from 4 to 6 percent. They are convex and smooth to irregular in shape and are about 75 to 200 feet long. Individual areas mainly range from 10 to 90 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches—brownish loamy sand

Subsurface layer:
5 to 19 inches—brownish sand

Subsoil:
19 to 28 inches—brownish sandy clay loam
28 to 48 inches—mottled brownish and reddish sandy clay that is dense, compact, and slightly cemented in 50 percent of the mass
48 to 62 inches—reddish, yellowish, and brownish coarse sandy loam and sandy loam

Included with this unit in mapping are small areas of Ailey, Orangeburg, and Pelion soils. These soils are on the more plane landscapes. Also included are Vaucluse soils that have a surface layer of sand. Dissimilar and similar inclusions make up about 20 percent of this map unit.

Important soil properties—

Permeability: Moderately slow in the upper part of the subsoil and slow in the lower part
Available water capacity: Moderate
Runoff: Medium
Erosion hazard: Moderate
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. A few areas are used as pasture or for row crops.

This Vaucluse soil is suited to row crops and small grains. The major management concern is the hazard of erosion. Conservation tillage, contour farming, terraces, and grassed waterways help to control runoff and erosion. Crop residue left on or near the surface also helps to control runoff and helps to maintain tilth and the content of organic matter.

This soil is well suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. The main concerns in producing and harvesting timber are seedling mortality and a hazard of windthrow. Building roads and skid trails on the contour can reduce maintenance costs and

prevent excessive erosion. Trees are subject to windthrow because the dense, compact subsoil restricts root growth. Planting seedlings in furrows improves survival rates.

This soil is suited to urban development. The slow permeability, however, is a severe limitation affecting septic tank absorption fields. This limitation can be reduced by enlarging the absorption field. Installing absorption lines on the contour and using step down boxes in absorption lines improve the functioning of the septic tank absorption fields. Installing a tile drainage system upslope can intercept and divert ground water that flows laterally towards the absorption field. The soil has slight limitations affecting dwellings without basements. The slope is a moderate limitation affecting small commercial buildings. Properly designing buildings can reduce the need for cutting and filling.

VaC—Vaucluse loamy sand, 6 to 10 percent slopes

This well drained soil is on narrow side slopes parallel to drainageways of the Coastal Plain. Slopes generally range from 6 to 9 percent. They are convex and smooth to irregular in shape and are about 50 to 200 feet long. Individual areas mainly range from 10 to 80 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches—brownish loamy sand

Subsurface layer:
5 to 19 inches—brownish sand

Subsoil:
19 to 28 inches—brownish sandy clay loam
28 to 48 inches—mottled brownish and reddish sandy clay that is dense, compact, and slightly cemented in 50 percent of the mass
48 to 62 inches—reddish, yellowish, and brownish coarse sandy loam and sandy loam

Included with this unit in mapping are small areas of Ailey, Orangeburg, and Pelion soils. These soils are on the more plane landscapes. Also included are Vaucluse soils that have a surface layer of sand. Dissimilar and similar inclusions make up about 10 percent of this map unit.

Important soil properties—

Permeability: Moderately slow in the upper part of the subsoil and slow in the lower part
Available water capacity: Moderate
Runoff: Medium or rapid
Erosion hazard: Severe
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. A few areas are used as pasture or for row crops.

This Vaucluse soil is poorly suited to row crops and small grains. The major management concern is the hazard of erosion. Tillage should be minimum. If tillage is necessary, it should be on the contour. Conservation tillage, contour farming, terraces, and grassed waterways help to control runoff and erosion. Crop residue left on or near the surface also helps to control runoff and helps to maintain tilth and the content of organic matter.

This soil is suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is suited to woodland. Loblolly pine is a common tree. The main concerns in producing and harvesting timber are seedling mortality and a hazard of windthrow. Building roads and skid trails on the contour can reduce maintenance costs and prevent excessive erosion. Trees are subject to windthrow because the dense, compact subsoil restricts root growth. Planting seedlings in furrows improves survival rates.

This soil is poorly suited to urban development. The slow permeability and the slope are severe limitations affecting septic tank absorption fields. These limitations can be reduced by enlarging the absorption field, installing absorption lines on the contour, and using step down boxes in absorption lines. Because of the slope, however, effluent can surface at points downslope. The slope is a moderate limitation affecting dwellings without basements and a severe limitation affecting small commercial buildings. Properly designing buildings can reduce the need for cutting and filling. Revegetating disturbed areas on construction sites as soon as possible helps to control erosion.

VaD—Vaucluse loamy sand, 10 to 15 percent slopes

This well drained soil is on narrow side slopes parallel to drainageways of the Coastal Plain. Slopes generally range from 10 to 13 percent. They are convex and smooth to irregular in shape and are about 50 to 150 feet long. Individual areas mainly range from 10 to 70 acres in size.

Typically, the sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches—brownish loamy sand

Subsurface layer:
5 to 19 inches—brownish sand

Subsoil:
19 to 28 inches—brownish sandy clay loam
28 to 48 inches—mottled brownish and reddish sandy clay that is dense, compact, and slightly cemented in 50 percent of the mass
48 to 62 inches—reddish, yellowish, and brownish coarse sandy loam and sandy loam

Included with this unit in mapping are small areas of Ailey and Pelion soils. These soils are on the more plane landscapes. Also included are Vaucluse soils that have a surface layer of sand. Dissimilar and similar inclusions make up about 10 percent of this map unit.

Important soil properties—

Permeability: Moderately slow in the upper part of the subsoil and slow in the lower part
Available water capacity: Moderate
Runoff: Rapid
Erosion hazard: Severe
Depth to high water table: More than 6 feet

Most of this map unit is native woodland. A few areas are used as pasture.

This Vaucluse soil is very poorly suited to row crops and small grains because of

the slope and the hazard of erosion. Because of these severe limitations, the soil is better suited to pasture or woodland than to cropland.

This soil is suited to hay and pasture. Coastal bermudagrass and bahiagrass grow well if the soil is properly managed and fertilized. Livestock grazing should be managed to protect the soil from excessive erosion.

This soil is suited to woodland. Loblolly pine is a common tree. The main concerns in producing and harvesting timber are seedling mortality and a hazard of windthrow. Building roads and skid trails on the contour can reduce maintenance costs and prevent excessive erosion. Trees are subject to windthrow because the dense, compact subsoil restricts root growth. Planting seedlings in furrows improves survival rates.

This soil is poorly suited to urban development. The slow permeability and the slope are severe limitations affecting septic tank absorption fields. These limitations can be reduced by enlarging the absorption field, installing absorption lines on the contour, and using step down boxes between absorption lines. Because of the slope, however, effluent can surface at points downslope. The slope is a moderate limitation affecting dwellings without basements and a severe limitation affecting small commercial buildings. Properly designing buildings can reduce the need for cutting and filling. Revegetating disturbed areas on construction sites as soon as possible helps to control erosion.

Prime Farmland

In this section, prime farmland is defined and the soils in Calhoun County that are considered prime farmland are discussed.

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. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops (fig. 9). Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. The moisture supply must be adequate, and the growing season must be sufficiently long. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources. Farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or woodland or for other purposes. They are used for food or fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Prime farmland soils usually receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not frequently flooded during the growing season. The slope ranges mainly from 0 to 6 percent.

Figure 9.—An area of Norfolk loamy sand, 0 to 2 percent slopes. This soil is considered prime farmland and is well suited to row crops.

The map units that make up prime farmland in Calhoun County are listed in table 7. The location of each map unit is shown on the detailed soil maps at the back of this publication. The extent of each unit is given in table 6. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

Soils that have limitations because of a high water table or a hazard of flooding qualify as prime farmland only in areas where these limitations have been overcome by drainage measures or flood control. The need for these measures is indicated in parentheses after the map unit name in table 7. Onsite evaluation is necessary to determine whether or not these limitations have been overcome by corrective measures.

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 for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for 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 that is in harmony with nature.

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.

Crops and Pasture

Gene E. Hardee, conservation agronomist, Natural Resources Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Natural Resources Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

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.

In 1982, according to the Calhoun County Soil and Water Conservation District, about 93,600 acres in Calhoun County were used as pastureland, hayland, or cropland. Of this acreage, about 83,500 acres were used for field crops, mainly cotton, soybeans, corn, wheat, and rye, and about 850 acres were used for orchards, mainly peaches and pecans.

Since 1986, about 19,800 acres have been removed from crop production through the Conservation Reserve Program. More than 63,000 acres remain in crop production.

The soils in the county are well suited to increased production of food. In 1982, according to the County Resources Inventory, more than 70,000 acres of potential good cropland were used for timber or pasture. In addition to converting this land to cropland, the production of food can be increased by extending the latest technology for crop production to all of the cropland in county. This soil survey can help the application of this technology.

Generally, the soils in the county that are well suited to crops and pasture also are suited to urban development. According to the 1982 County Resources Inventory, about 2,500 acres in Calhoun County are urban and built-up land. The acreage of urban and built-up land has increased at the rate of about 100 acres per year. Using this soil survey to make land use decisions, which will influence the future role of farming in the county, is discussed in the section "Broad Land Use Considerations."

Soil erosion is a major concern on about 40 percent of the land in Calhoun County. It is a hazard on about 40 percent of the pastureland and cropland. Water erosion commonly is a hazard on soils that have slopes of more than 2 percent and on soils that have very long slopes of 1 to 2 percent. Erosion is a hazard on many soils that are used for crops. Soil blowing is a concern on clean-tilled sandy soils. It primarily results in damage to young plants rather than in actual soil loss.

Loss of the surface layer through erosion reduces productivity and pollutes streams. Soil productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging on soils that have a clayey subsoil and on soils that have a layer in or below the subsoil, such as a dense, somewhat brittle layer, that limits the depth of the root zone. Faceville and Greenville soils are examples of soils that have a clayey subsoil, and Vaucluse soils are an example of soils that have a layer that limits rooting depth. Erosion also reduces productivity on deep, sandy soils, such as Ailey, Alpin, Lucy, and Troup soils, mainly because it results in the loss of nutrients and fine soil particles.

Soil erosion on farmland results in the sedimentation of streams. Controlling erosion minimizes the pollution of streams by sediments and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

In some sloping fields, the original friable surface layer has eroded away and spots of soils that have a clayey surface layer or a surface layer of sandy clay loam occur. Seedbed preparation and tillage are difficult in these spots. Such spots are common on the most sloping part of intensively cropped areas of Faceville, Greenville, Orangeburg, and Pelion soils.

The best method for controlling water erosion is a combination of structural measures that remove excess water from the field and cropping and tillage systems that provide surface cover and help to control runoff. Diversions and terraces reduce the length of slope, and grassed waterways remove excess water from the field.

Contour farming reduces the amount and velocity of runoff (fig. 10). Cropping systems that include sod crops in rotation and tillage that leaves crop residue on the surface provide a protective surface cover, help to control runoff, and increase water infiltration. Including forage crops of legumes and grasses in the cropping system on livestock farms, which require pasture and hay, helps to control erosion in sloping areas and provides nitrogen for the following crop.

Terraces and diversions are effective in controlling erosion on very deep, well drained soils that have uniform slopes, such as Dothan, Faceville, Greenville, Norfolk, Noboco, Orangeburg, and Suffolk soils. These systems, however, concentrate water and are not suited to the less stable soils that have a sandy surface layer, such as Ailey, Alpin, Lucy, and Troup soils. On these soils, effective erosion-control systems generally include contour farming, contour stripcropping, and conservation tillage.

Figure 10.—An area of Fuquay sand, 0 to 6 percent slopes. Planting soybeans on the contour helps to control erosion on this soil.

These systems reduce the amount and velocity of runoff and do not concentrate the runoff.

Information about erosion-control measures for each kind of soil in Calhoun County is available at the local office of the Natural Resources Conservation Service.

Damage to young plants caused by soil blowing is a major management concern on Ailey, Alpin, Dothan, Lucy, Noboco, Norfolk, Orangeburg, Pelion, Suffolk, Troup, and Vaucluse soils. It is especially a hazard in extensive fields that are not protected by plant cover. Conservation tillage, permanent vegetated strips, and strips of close-growing crops help to prevent soil blowing on sandy soils.

Soil drainage is a major management concern on about 17 percent of the soils in Calhoun County. Drainage to the extent needed for cropland and hayland, however, is feasible on only about 56 percent of these soils. The rest of these soils are wetlands. Drainage commonly is feasible on Coxville, Eunola, Goldsboro, Lynchburg, Pelion, and Rains soils and in some areas of Paxville soils. Because of inadequate outlets and the hazard of frequent flooding, drainage is generally not feasible on Chenneby, Grifton, Elloree, Johnston, and Totness soils (fig. 11). Congaree soils typically require protection from flooding.

Managing drainage in conformance with regulations concerning wetlands may require special permits and extra planning. The local office of the Natural Resources Conservation Service should be contacted for identification of hydric soils and potential wetlands.

A low available water capacity is a limitation in areas of Ailey, Alpin, Lucy, and Troup soils. This limitation can be reduced by managing crop residue, selecting the proper crop for planting, and irrigation. These soils are well suited to pasture grasses, such as bahiagrass and bermudagrass, and drought-tolerant crops, such as grain sorghum. Because nutrients are rapidly leached from these soils, frequent applications of fertilizer and lime are needed for good plant growth.

Figure 11.—An area of Johnston fine sandy loam, frequently flooded. This soil is very poorly drained and is on the lowest part of the landscape.

Soil fertility is naturally low in the soils in Calhoun County. Regular applications of lime and fertilizer are needed. Most of the soils are naturally moderately acid, strongly acid, or very strongly acid. The soils commonly require applications of ground limestone to raise and maintain a pH level suitable for good crop growth. Levels of available phosphorus and potash are naturally low in most of the soils. On deep, sandy soils, using fertilizers in split applications can reduce the amount of nutrients lost through leaching and the hazard of ground-water contamination. On all of the soils, additions of lime and fertilizer should be based on the results of soil tests, on the need of the crop, and on the expected level of yields. The Cooperative Extension Service can help in determining the needed amount of fertilizer and lime.

Soil tilth is an important factor in the germination of seeds and the infiltration of water into the soil. The surface layer of most soils in Calhoun County is sand or loamy sand. It is granular and porous and has weak structure. These conditions are generally ideal for the germination of seeds and the infiltration of water. The soils, however, generally have a very low content of organic matter and can retain only a small amount of moisture in the surface layer.

Fall tillage is generally not recommended. Most of the cropland is on sloping soils that are subject to water erosion or soil blowing if the soil is tilled in the fall. Fall tillage is used for some crops to control insects and disease. In these cases, a winter cover crop should be planted after the soils are tilled.

The soils and climate of the survey area are suitable for many field crops that are not commonly grown in the area. Soybeans, corn, and cotton are the principal row crops. A small acreage of cropland is used for watermelons, peanuts, and grain sorghum. Wheat and rye are the common close-growing crops. Oats, barley, pearl

millet, sudangrass, and several close-growing legumes, such as alfalfa, arrowleaf clover, and crimson clover, could also be grown for forage or seed. Bicolor lespedeza and sericea lespedeza are perennials grown for seed, forage, and wildlife habitat. The main perennial grasses grown for forage are bahiagrass, coastal bermudagrass, and tall fescue.

Specialty crops grown in the survey area include vegetables, small fruits, peaches, and pecans. A small acreage is used for cantaloupes, field peas, lima beans, okra, squash, sweet corn, tomatoes, collards, turnips, and strawberries. Large areas could be used for these crops and other specialty crops.

Deep soils that have good natural drainage, have a moderate or high available water capacity, and warm up early in spring are especially well suited to many vegetables. Crops generally can be planted and harvested early on Dothan, Faceville, Greenville, Lucy, Noboco, Norfolk, Orangeburg, and Suffolk soils.

The latest information and suggestions for crop production can be obtained from the local office of the Cooperative Extension Service or the Natural Resources Conservation 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 8. 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 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 are also 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 8 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 use as cropland *(8)*. 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 woodland and 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 Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use (fig. 12).

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

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

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

Class V soils are not likely to erode, but they have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

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, IIe. The letter *e* shows that the main hazard is the risk of erosion unless a close-growing plant cover is

Figure 12.—Soybeans on Orangeburg loamy sand, 0 to 2 percent slopes. This soil is in capability class I. It has few limitations affecting row crops.

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.

There are no subclasses in class I because the soils of this class have few limitations. The soils in class V are subject to little or no erosion, but they have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation. Class V contains only the subclasses indicated by *w, s,* or *c*.

The acreage of soils in each capability class and subclass is shown in table 9. The capability classification of each map unit is given in the yields table.

Woodland Management and Productivity

Norman Runge, forester, Natural Resources Conservation Service, helped prepare this section.

This section discusses the effects of soils on tree growth and forest management in Calhoun County.

Most of Calhoun County was originally forest land. Forests currently cover about 55 percent of the county, or 133,304 acres. They produce good stands of commercial trees. Pine species grow mainly on hills, and hardwood species generally are dominant on bottom land along rivers and creeks.

Southern pine and upland hardwood forest types make up about 87 percent of the forest land. Dominant pine species are longleaf pine and loblolly pine, and dominant upland hardwood species include oak and hickory. The rest of the forest land consists of bottom-land hardwood forest types, primarily oak, gum, and cypress.

The commercial value of forest products in Calhoun County is substantial. The productive capacity of the forest land is greatly below the potential.

Most of the existing commercial forest land could be improved by weeding undesirable species from stands. Continuous protection from grazing and fire and control of diseases and insects also are needed to improve stands. The level of forest management has improved significantly during recent years. The practice of uncontrolled burning, which was generally used in the survey area about two decades ago, has been replaced by fire protection measures or prescribed burning, or both. Additional forest management measures include planting genetically improved seedlings, natural regeneration, and fertilization.

Soils vary in their ability to produce trees. Available water capacity and depth of the root zone have major effects on tree growth. Fertility and texture also influence tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others, some are more susceptible to erosion after roads are built and timber is harvested, and some require special reforestation efforts. In the section “Detailed Soil Map Units,” the description of each map unit in the survey area suitable for timber includes information about productivity, limitations in harvesting timber, and management concerns in producing timber. The common forest understory plants also are listed. Table 10 summarizes this forestry information and rates the soils for a number of factors to be considered in management. *Slight, moderate,* and *severe* are used to indicate the degree of the major soil limitations to be considered in forest management.

Ratings of *erosion hazard* indicate the probability that damage may occur if site preparation or harvesting activities expose the soil. The risk is *slight* if no particular preventive measures are needed under ordinary conditions; *moderate* if erosion-control measures are needed for particular silvicultural activities; and *severe* if special

precautions are needed to control erosion for most silvicultural activities. Ratings of moderate or severe indicate the need for construction of higher standard roads, additional maintenance of roads, additional care in planning harvesting and reforestation activities, or the use of special equipment.

Ratings of *equipment limitation* indicate limits on the use of forest management equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, stoniness, and susceptibility of the surface layer to compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment is needed. On the steepest slopes, even tracked equipment cannot be operated and more sophisticated systems are needed. The rating is *slight* if equipment use is restricted by wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if slopes are so steep that wheeled equipment cannot be operated safely across the slope, if wetness restricts equipment use from 2 to 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. The rating is *severe* if slopes are so steep that tracked equipment cannot be operated safely across the slope, if wetness restricts equipment use for more than 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. Ratings of moderate or severe indicate a need to choose the best suited equipment and to carefully plan the timing of harvesting and other management activities.

Ratings of *seedling mortality* refer to the probability of the death of naturally occurring or properly planted seedlings of good stock in periods of normal rainfall, as influenced by kinds of soil or topographic features. Seedling mortality is caused primarily by too much water or too little water. The factors used in rating a soil for seedling mortality are texture of the surface layer, depth to a high water table and the length of the period when the water table is high, rock fragments in the surface layer, rooting depth, and the aspect of the slope. The mortality rate generally is highest on soils that have a sandy or clayey surface layer. The risk is *slight* if, after site preparation, expected mortality is less than 25 percent; *moderate* if expected mortality is between 25 and 50 percent; and *severe* if expected mortality exceeds 50 percent. Ratings of moderate or severe indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such as bedding, furrowing, installing a surface drainage system, and providing artificial shade for seedlings. Reinforcement planting is often needed if the risk is moderate or severe.

Ratings of *windthrow hazard* indicate the likelihood that trees will be uprooted by the wind. A restricted rooting depth is the main reason for windthrow. The rooting depth can be restricted by a high water table, a fragipan, or bedrock or by a combination of such factors as wetness, texture, structure, and depth. The risk is *slight* if strong winds cause trees to break but do not uproot them; *moderate* if strong winds cause an occasional tree to be blown over and many trees to break; and *severe* if moderate or strong winds commonly blow trees over. Ratings of moderate or severe indicate that care is needed in thinning or that the stand should not be thinned at all. Special equipment may be needed to prevent damage to shallow root systems in partial cutting operations. A plan for the periodic removal of windthrown trees and the maintenance of a road and trail system may be needed.

Ratings of *plant competition* indicate the likelihood of the growth or invasion of undesirable plants. Plant competition is more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is *slight* if competition from undesirable plants hinders adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is *moderate* if competition from undesirable plants hinders natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is *severe* if competition from undesirable plants hinders adequate natural or

artificial reforestation unless the site is intensively prepared and maintained. A moderate or severe rating indicates the need for site preparation to ensure the development of an adequately stocked stand. Managers must plan site preparation measures to ensure reforestation without delays.

The *potential productivity* of *common trees* on a soil is expressed as a *site index*. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate. The first tree listed for each soil is the indicator species for that soil. An indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

The *site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. The estimates of the productivity of the soils in this survey are based primarily on loblolly pine.

The *productivity class* represents the volume expected to be produced by the most important trees, expressed in cubic meters per hectare per year. Cubic meters per hectare can be converted to cubic feet per acre by multiplying by 14.3.

Trees to plant are those that are used for reforestation or, under suitable conditions, natural regeneration. They are suited to the soils and can produce a commercial wood crop. The desired product, topographic position (such as a low, wet area), seedling availability, and personal preference are four factors among many that can influence the choice of trees for use in reforestation.

Recreation

In table 11, the soils of the survey area are rated according to the limitations that affect their suitability for recreation. The ratings 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 are also important. Soils 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.

In table 11, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in table 11 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 14 and interpretations for dwellings without basements and for local roads and streets in table 13.

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 best soils have gentle slopes and are not wet or subject to flooding during the period of use. The surface absorbs rainfall readily but remains firm and is not dusty when dry. Strong slopes can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the period of use. The surface is firm after rains and is not dusty when dry.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes. The suitability of the soil for tees or greens is not considered in rating the soils.

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 appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 12, 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, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, soybeans, 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, flooding, and slope. Soil temperature and soil moisture are also considerations.

Examples of grasses and legumes are bahiagrass, bermudagrass, soybeans, sericea, clovers, 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, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, common lespedeza, pokeberry, elderberry, and partridge pea.

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, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of seed- and fruit-producing shrubs that are suitable for planting on soils rated *good* are shrub lespedeza, scuppernong grape, and crabapple.

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 and cedar.

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, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, cordgrass, 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, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer.

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, mink, 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 within a depth of 5 or 6 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 grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, soil wetness, depth to a high water table, 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

Table 13 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by soil texture and slope. The time of the year that excavations can be made is affected by depth to a high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family

dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. Depth to a high water table, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

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 stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to a high water table, flooding, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, depth to a high water table, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 14 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 14 also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

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 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, and flooding affect absorption of the effluent.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

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. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 14 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, depth to a high water table, flooding, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive 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 can cause construction problems.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the 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.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in table 14 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a water table, slope, and flooding affect both types of landfill. Texture, highly organic layers, and soil reaction affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

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.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 15 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

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 soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by a high 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 engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* 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 15, only the probability 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 engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source.

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.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They have little or no gravel and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an

appreciable amount of gravel, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, have slopes of more than 15 percent, or have a high water table at or near the surface.

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 releases a variety of plant nutrients as it decomposes.

Water Management

Table 16 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 limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives the restrictive features that affect each soil for drainage, irrigation, and grassed waterways.

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. 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 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 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 organic matter. 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 and permeability of the aquifer.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on layers that affect the rate of water movement, permeability, depth to a high water table or depth of standing water if the soil is subject to ponding, slope, susceptibility to flooding, and subsidence of organic layers. Excavating and grading and the stability of ditchbanks are affected by slope and the hazard of cutbanks caving. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The performance of a system is affected by the depth of the root zone and soil reaction.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Wetness and slope affect the construction of grassed waterways. A hazard of soil blowing, a low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined 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 grain-size distribution, plasticity, and compaction 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, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 17 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading "Soil Series and Their Morphology."

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 as much as 15 percent, 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 grain-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, SP-SM.

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 grain-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.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in table 17.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry 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.

The estimates of grain-size distribution, liquid limit, and plasticity index generally are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 18 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence the 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 (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major 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. A bulk density of more than 1.6 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 refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil 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 in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. 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.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major 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.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to soil blowing in cultivated areas. The groups indicate the susceptibility to soil blowing and the amount of soil lost. Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils are generally not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material. These soils are very highly erodible. Crops can be grown if intensive measures to control soil blowing are used.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material. These soils are slightly erodible. Crops can be grown if measures to control soil blowing are used.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay. These soils are very slightly erodible. Crops can be grown if ordinary measures to control soil blowing are used.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils are very slightly erodible. Crops can be grown if ordinary measures to control soil blowing are used.
8. Soils that are not subject to soil blowing because of rock fragments on the surface or because of surface wetness.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 18, 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 or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 19 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

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 permanent 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.

If a soil is assigned to two hydrologic groups in table 19, the first letter is for drained areas and the second is for undrained areas. Onsite investigation is needed, however, to determine the hydrologic group of the soil at a particular location.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflowing streams, by runoff from adjacent slopes, or by inflow from high tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not

considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

Table 19 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as *none, rare, occasional,* or *frequent. None* means that flooding is not probable. *Rare* means that flooding is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year). *Occasional* means that flooding occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year). *Frequent* means that flooding occurs often under normal weather conditions (the chance of flooding is more than 50 percent in any year). Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 days to 1 month), and *very long* (more than 1 month). The time of year that floods are most likely to occur is expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding 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 is 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.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 19 are the depth to the seasonal high water table; the kind of water table, that is, *perched* or *apparent;* and the months of the year that the water table commonly is highest. A water table that is seasonally high for less than 1 month is not indicated in table 19.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. “More than 6.0” indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves 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 in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel 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 is also expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Physical, Chemical, and Mineralogical Analyses of Selected Soils

By Bill R. Smith, professor, Department of Agronomy and Soils, South Carolina Agricultural Experiment Station, Clemson University.

The results of physical, chemical, and mineralogical analyses of three pedons are given in tables 20, 21, and 22. The data are for soils sampled at carefully selected sites. The Faceville and Coxville pedons are representative of the series and are described in the section "Soil Series and Their Morphology." Data for the Goldsboro pedon is from a supporting, or satellite, pedon. Soil samples were analyzed by the Soil Characterization Laboratory of the South Carolina Agricultural Experiment Station.

The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods *(7)*.

Particle-size distribution—pipette method (3A1).
Cation-exchange capacity—ammonium acetate, pH 7.0 (5A1).
Extractable bases—ammonium acetate, pH 7.0 (5B1a); calcium (6N2e); magnesium (6O2d); potassium (6Q2b); sodium (6P2b).
Extractable acidity—barium chloride-triethanolamine (6H1).
Extractable aluminum—potassium chloride (6G1e).
Cation-exchange capacity—sum of cations (5A3a).
Base saturation—sum of cations (5C3).
Effective cation-exchange capacity—sum of bases plus aluminum (5A3b).
Aluminum saturation—ammonium acetate extractable bases divided by effective cation-exchange capacity.
Reaction (pH)—1:1 water dilution (8C1a).
Clay mineralogy—x-ray diffraction (7A2a).

The cation-exchange capacities of the soils tested are rather low. Exchangeable bases are fairly low and tend to decrease as depth increases. Low cation-exchange capacities and low nutrient levels are common in soils in a warm, humid climate, such as that of the survey area. This climate favors the development of leached, acid soils that have low inherent fertility and a low nutrient-holding capacity.

The Coxville soil is in forest land and has not been limed or fertilized. Nutrient cycling by native vegetation results in a larger amount of exchangeable bases in the upper horizons and a decrease in the amount of exchangeable bases as depth increases. The amount of exchangeable aluminum is rather large in comparison to the amount of exchangeable bases in the lower Bt horizons. Percentages of aluminum saturation range from nearly 70 percent in the Bt2 horizon to more than 80 percent in the Bt4 horizon. Levels of aluminum saturation that are more than 20 to 30 percent may be toxic to some crops. Levels of aluminum saturation that are more than 60 percent are toxic to many crops.

The Goldsboro and Faceville soils are in cultivated areas and have been limed and fertilized. They have pH values that are somewhat greater than those in the Coxville soil, especially in the upper horizons. The Faceville soil was limed more than the Goldsboro soil and has higher pH values and higher percentages of base saturation. In the Faceville soil, the Bt1 horizon has higher levels of exchangeable bases than the overlying Ap and BA horizons. This situation is common in many of the cultivated soils of the Coastal Plains that have a low content of organic matter. The upper Bt horizon has more clay and therefore a higher nutrient-holding capacity than the surface horizons. Cations of the applied lime and fertilizers are leached downward and accumulate to some extent in the upper argillic horizon because this horizon has a higher content of clay. This phenomenon is reflected in the base saturation of the Bt1 horizon, which is greater than that in the overlying Ap and BA horizons. Aluminum

saturation values are very low in the Faceville soil throughout the upper 4 feet and are less than 20 percent to a depth of 5 feet. Levels of aluminum saturation are higher in the Goldsboro soil than in the Faceville soil. They range from 40 to 54 percent in the argillic horizon. Levels of aluminum saturation in the Goldsboro soil, however, are lower than those in the unlimed Coxville soil.

In the Faceville soil, the clay mineralogy of the argillic horizon dominantly consists of low-activity clays. This mineralogy is reflected in the low values (calculated on a clay basis) for effective cation-exchange capacity and for cation-exchange capacity, NH_4OAc pH 7.0. The Faceville soil has a kandic horizon. The argillic horizon in the Coxville and Goldsboro soils also contains a large amount of low-activity clays. Because the argillic horizon in these soils contains some vermiculite, however, the soils do not have a kandic horizon. This situation is typical in the wetter, more poorly drained soils of the Coastal Plains of the Southeast.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(9)*. 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 on laboratory measurements. Table 23 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven 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 Entisol.

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 Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

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; 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 Fluvaquents (*Fluva*, meaning flood plain, plus *aquent*, the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic 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 known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Aeric* identifies the subgroup that is not so wet as is typical of the great group. An example is Aeric Fluvaquents.

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 class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, mixed, acid, thermic Aeric Fluvaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series. The Mullers series is an example of fine, mixed, acid, thermic Aeric Fluvaquents in Calhoun County.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other 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" *(11)*. Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" and "Keys to Soil Taxonomy" *(9, 10)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Ailey Series

The Ailey series consists of well drained soils that formed in thick deposits of sandy and loamy sediments on the Coastal Plain and in the Sandhills. Permeability is moderate in the Bt horizon and slow in the Btx horizon. These soils are on ridges and side slopes. Slopes range from 0 to 25 percent. The soils are classified as loamy, siliceous, thermic Arenic Kanhapludults.

Ailey soils are in landscape positions adjacent to Alpin, Lucy, Pelion, Troup, and Vaucluse soils. Alpin soils to a depth of more than 80 inches are sandy throughout. Lucy soils do not have a Btx horizon. Pelion and Vaucluse soils have an argillic horizon within a depth of 20 inches.

Typical pedon of Ailey sand, 0 to 6 percent slopes; about 12 miles west of St. Matthews, about 1.3 miles east on S.C. Highway 172 from Staley's Crossroads at S-9-29, about 100 feet north of the road:

A—0 to 7 inches; brown (10YR 5/3) sand; weak fine granular structure; very friable; common fine roots; strongly acid; abrupt smooth boundary.

E—7 to 29 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; few fine roots; few pockets of clean sand grains; strongly acid; gradual smooth boundary.

Bt—29 to 40 inches; reddish yellow (7.5YR 6/6) sandy loam; weak medium subangular blocky structure; friable; very strongly acid; gradual smooth boundary.

Btx—40 to 52 inches; reddish yellow (7.5YR 6/6) sandy clay loam; many coarse prominent red (2.5YR 4/6) mottles; weak medium subangular blocky structure; firm; dense, compact, and slightly cemented in about 40 percent of the mass; strongly acid; gradual wavy boundary.

C—52 to 68 inches; red (2.5YR 4/8) sandy clay loam; many medium prominent reddish yellow (7.5YR 6/8) mottles; massive; friable; very strongly acid.

The solum is more than 48 inches thick. The soils are strongly acid or very strongly acid throughout, except for the surface layer in limed areas. The depth to a dense, compact, slightly cemented layer ranges from 32 to 45 inches. The content of gravel ranges from 0 to 5 percent, by volume.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. Texture is sand.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. Texture is sand.

The Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 6. The number of mottles in shades of red or brown ranges from none to common. Texture is sandy loam or sandy clay loam.

The Btx horizon has hue of 5YR or 7.5YR, value of 5 or 6, and chroma of 6 to 8. It has mottles in shades of red, brown, or yellow. It is sandy clay loam that is dense, brittle, and slightly cemented in about 20 to 40 percent of the mass.

The C horizon or 2C horizon, if it occurs, has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 to 8. It has mottles in shades of yellow, brown, red, or gray. Texture is coarse sandy loam, sandy loam, or sandy clay loam.

Alpin Series

The Alpin series consists of excessively drained, very rapidly permeable soils that formed in thick deposits of sandy marine and eolian sediments on the Coastal Plain and in the Sandhills. These soils are on broad ridges and side slopes. Slopes range from 0 to 15 percent. The soils are classified as thermic, coated, Argic Quartzipsamments.

Alpin soils are in landscape positions adjacent to Ailey, Troup, and Vaucluse soils. These adjacent soils have an argillic horizon.

Typical pedon of Alpin sand, 0 to 6 percent slopes; about 17.7 miles northwest of St. Matthews, 16.8 miles west on S.C. Highway 6 from U.S. Highway 601 in St. Matthews, 0.9 mile north on S-32-382, about 150 feet east on an unpaved road, about 50 feet north of the road:

A—0 to 3 inches; brown (10YR 5/3) sand; weak fine granular structure; very friable; common fine and common medium roots; common clean sand grains; strongly acid; clear smooth boundary.

E1—3 to 28 inches; brownish yellow (10YR 6/8) sand; single grained; loose; common fine roots; strongly acid; diffuse smooth boundary.

E2—28 to 62 inches; brownish yellow (10YR 6/6) sand; single grained; loose; few fine pockets of clean sand grains; strongly acid; diffuse smooth boundary.

E&Bt—62 to 82 inches; pinkish gray (7.5YR 7/2) sand (E); single grained; loose; strong brown (7.5YR 5/6) lamellae of loamy sand (Bt) that are 1/4- to 3/4-inch thick and about 1 to 3 inches apart; strongly acid.

The sand is more than 80 inches thick. The soils are moderately acid to very strongly acid throughout.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 3. Texture is sand.

The E horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8. Texture is sand.

The E part of the E&Bt horizon has hue of 7.5YR or 10YR, value of 7 or 8, and chroma of 2 to 4. Texture is sand. The Bt part (lamellae) has hue of 5YR or 7.5YR , value of 5 or 6, and chroma of 6 to 8. Texture is loamy sand or sandy loam. The lamellae are 1/4- to 3/4-inch thick and 1 to 3 inches apart. They occur below a depth of 50 inches.

Chenneby Series

The Chenneby series consists of somewhat poorly drained, moderately permeable soils that formed in loamy sediments washed predominantly from soils of the Piedmont. These soils are on major flood plains, mostly along the Congaree River. Slopes are less than 1 percent. The soils are classified as fine-silty, mixed, thermic Fluvaquentic Dystrochrepts.

Chenneby soils are in landscape positions adjacent to Mullers, Congaree, Johnston, and Paxville soils. Mullers, Johnston, and Paxville soils are shallower to a

high water table than the Chenneby soils, and Congaree soils are deeper to a high water table.

Typical pedon of Chenneby silt loam, occasionally flooded; about 18 miles northwest of St. Matthews, 3.5 miles west on S.C. Highway 6 from U.S. Highway 601 in St. Matthews, 13.1 miles northwest on U.S. Highway 176 from S.C. Highway 6, about 1.2 miles northeast on a field trail, about 15 feet northwest of the trail:

A—0 to 3 inches; dark brown (7.5YR 4/2) silt loam; moderate fine granular structure; friable; many fine, medium, and coarse roots; moderately acid; clear smooth boundary.

Bw1—3 to 15 inches; yellowish brown (10YR 5/4) silt loam; common fine faint pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; many fine and medium and common coarse roots; few fine flakes of mica; very strongly acid; clear smooth boundary.

Bw2—15 to 28 inches; light yellowish brown (10YR 6/4) silt loam; weak medium subangular blocky structure; friable; common medium and few coarse roots; few fine flakes of mica; common medium distinct light gray (10YR 7/1) iron depletions with clear boundaries; very strongly acid; gradual smooth boundary.

Bw3—28 to 36 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few fine roots; common fine flakes of mica; many coarse distinct light brownish gray (10YR 6/2) iron depletions with clear boundaries; strongly acid; gradual smooth boundary.

Bg—36 to 62 inches; light brownish gray (10YR 6/2) silt loam; weak medium subangular blocky structure; friable; common fine flakes of mica; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation with clear boundaries; very strongly acid.

The solum ranges from 40 to 70 inches. The soils are moderately acid to very strongly acid throughout, except for the surface layer in limed areas. In most pedons they have few or common flakes of mica.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 or 3. Texture is silt loam.

The upper part of the B horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 or 4. It has common masses of iron accumulation in shades of brown or red and common iron depletions in shades of gray. The iron depletions are within a depth of 24 inches. Texture is silt loam or silty clay loam.

The lower part of the B horizon has hue of 10YR, value of 4 to 6, and chroma of 1 to 4. It has masses of iron accumulation in shades of brown, yellow, or red and iron depletions in shades of gray. Texture is silt loam or silty clay loam.

Congaree Series

The Congaree series consists of well drained and moderately well drained, moderately permeable soils that formed in loamy alluvial sediments washed from soils of the Piedmont. These soils are on major flood plains, mostly along the Congaree River. Slopes are less than 2 percent. The soils are classified as fine-loamy, mixed, nonacid, thermic Typic Udifluvents.

Congaree soils are in landscape positions adjacent to Mullers, Chenneby, and Paxville soils. These adjacent soils are shallower to a high water table than the Congaree soils.

Typical pedon of Congaree loam, occasionally flooded; about 15 miles northwest of St. Matthews on U.S. Highway 176, about 1.85 miles northeast on S-9-353, about 0.9 mile east on an unmarked road, about 100 feet south on an unmarked woodland road, about 36 feet west of the road:

A—0 to 9 inches; brown (7.5YR 4/4) loam; weak fine granular structure; friable; many medium and many fine roots; common fine flakes of mica; strongly acid; gradual smooth boundary.
C1—9 to 29 inches; brown (7.5YR 4/3) loam; common fine faint reddish brown (5YR 5/4) mottles; massive; friable; common fine roots; common fine flakes of mica; strongly acid; gradual smooth boundary.
C2—29 to 40 inches; brown (7.5YR 4/4) loam; massive; friable; common horizontal lenses of brownish yellow loamy sand; common fine flakes of mica; common medium faint grayish brown (2.5Y 5/2) and few medium distinct very dark gray (10YR 3/1) iron depletions; moderately acid; gradual smooth boundary.
C3—40 to 50 inches; brown (7.5YR 4/4) sandy clay loam; massive; friable; common fine flakes of mica; common medium distinct grayish brown (2.5Y 5/2) iron depletions and common fine distinct red (2.5YR 4/6) masses of iron accumulation; moderately acid; clear smooth boundary.
C4—50 to 80 inches; light olive brown (2.5Y 5/4) fine sandy loam; common medium distinct reddish brown (5YR 5/4) and few medium distinct reddish brown (5YR 4/3) mottles; massive; friable; common fine flakes of mica; moderately acid.

The soils are moderately acid or strongly acid throughout, except for the surface layer in limed areas. In most pedons they have few to many flakes of mica.

The A horizon has hue of 7.5YR, value of 3 or 4, and chroma of 4. Texture is loam.

The C horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 3 or 4. In some pedons it has masses of iron accumulation in shades of red, brown, or yellow. Iron depletions occur below a depth of 20 inches. Texture is fine sandy loam, loam, or sandy clay loam.

Coxville Series

The Coxville series consists of poorly drained, moderately slowly permeable soils that formed in loamy and clayey sediments of the Coastal Plain. These nearly level soils are in slightly depressed areas or along drainageways. Slopes are less than 1 percent. The soils are classified as clayey, kaolinitic, thermic Typic Paleaquults.

Coxville soils are in landscape positions adjacent to Lynchburg, Ogeechee, and Rains soils. Lynchburg soils are deeper to a high water table than the Coxville soils. Ogeechee and Rains soils are fine-loamy.

Typical pedon of Coxville sandy loam; about 3.5 miles southwest of Creston on S.C. Highway 33, about 3.2 miles southeast on S-9-127, about 0.2 mile northeast on S-9-75, about 0.4 mile northeast on an unmarked farm road, about 16 feet northwest of the road:

A—0 to 6 inches; very dark gray (10YR 3/1) sandy loam; weak fine granular structure; very friable; common medium and few fine roots; strongly acid; clear smooth boundary.
Btg1—6 to 10 inches; gray (10YR 5/1) sandy clay loam; weak medium subangular blocky structure; friable; common fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; gradual smooth boundary.
Btg2—10 to 31 inches; gray (10YR 5/1) clay loam; moderate medium subangular blocky structure; firm; common medium distinct yellowish brown (10YR 5/6) and common medium distinct red (2.5YR 5/6) masses of iron accumulation; extremely acid; gradual smooth boundary.
Btg3—31 to 44 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; extremely acid; gradual smooth boundary.

Btg4—44 to 62 inches; light gray (10YR 6/1) sandy clay; strong medium subangular blocky structure; very firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; extremely acid.

The solum is more than 60 inches thick. The soils are strongly acid to extremely acid throughout, except for the surface layer in limed areas.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. Texture is sandy loam.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1. The horizon commonly is clay loam, sandy clay, or clay, but the upper part ranges to sandy clay loam. It has common masses of iron accumulation in shades of red, brown, or yellow.

Dothan Series

The Dothan series consists of well drained, moderately slowly permeable soils that formed in loamy and clayey sediments on uplands of the Coastal Plain. Slopes range from 0 to 6 percent. These soils are classified as fine-loamy, siliceous, thermic Plinthic Kandiudults.

Dothan soils are in landscape positions adjacent to Coxville, Fuquay, Lynchburg, Noboco, Norfolk, Ogeechee, Orangeburg, Rains, and Vaucluse soils. These adjacent soils, except for Fuquay soils, do not contain more than 5 percent plinthite within a depth of 60 inches. Fuquay soils are Arenic. Coxville, Lynchburg, Ogeechee, and Rains soils are shallower to a high water table than the Dothan soils.

Typical pedon of Dothan loamy sand, 2 to 6 percent slopes; about 14 miles southeast of St. Matthews, 1.7 miles south on U.S. 601 from S.C. Highway 6 in St. Matthews, 12.8 miles southeast on U.S. Highway 176, about 0.75 mile southwest of the southernmost intersection of S-9-176 and onto a field road, about 700 feet southeast of the field road:

Ap—0 to 7 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; moderately acid; abrupt smooth boundary.

E—7 to 13 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; moderately acid; clear smooth boundary.

Bt1—13 to 29 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid; gradual smooth boundary.

Bt2—29 to 40 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; common medium distinct red (2.5YR 4/8) masses of iron accumulation; about 2 percent nodules of plinthite; strongly acid; gradual smooth boundary.

Btv1—40 to 49 inches; brownish yellow (10YR 6/8) sandy clay; weak medium subangular blocky structure; firm; about 5 percent nodules of plinthite; common medium distinct very pale brown (10YR 7/3) iron depletions and many medium prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid; gradual smooth boundary.

Btv2—49 to 62 inches; brownish yellow (10YR 6/6) sandy clay; weak medium subangular blocky structure; firm; about 8 percent nodules of plinthite; common coarse distinct light gray (10YR 7/2) iron depletions and many coarse prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid.

The solum is more than 62 inches thick. The soils are strongly acid or very strongly acid throughout, except in limed areas. The depth to a horizon containing more than 5 percent plinthite ranges from 40 to 60 inches.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is loamy sand.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. Texture is sand or loamy sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8. In some pedons the lower part of this horizon has masses of iron accumulation in shades of red or brown. Texture is sandy loam or sandy clay loam.

The Btv horizon has hue of 10YR, value of 5 or 6, and chroma of 6 to 8, or it is a combination of masses of iron accumulation in shades of red, brown, or yellow and iron depletions in shades of gray. It contains 5 to 12 percent nodules of plinthite. Texture is sandy clay loam or sandy clay.

Elloree Series

The Elloree series consists of poorly drained, moderately rapidly permeable soils that formed in sandy and loamy sediments on the Coastal Plain. These soils are on flood plains. Slopes are less than 1 percent. The soils are classified as loamy, siliceous, thermic Arenic Endoaqualfs.

Elloree soils are in landscape positions adjacent to Coxville, Grifton, Ogeechee, and Rains soils. These adjacent soils have an argillic horizon within a depth of 20 inches. Coxville, Ogeechee, and Rains soils are more acid than the Elloree soils.

Typical pedon of Elloree loamy sand in an area of Grifton and Elloree soils, frequently flooded; about 13 miles southeast of St. Matthews, 1.7 miles south on U.S. Highway 601 from S.C. Highway 6 in St. Matthews, 11.0 miles southeast on U.S. Highway 176, about 0.6 mile southwest on S-9-19, about 4,000 feet south on a field road, 1,400 feet southwest of the road:

A—0 to 9 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; friable; many fine and common medium roots; strongly acid; clear smooth boundary.

E—9 to 29 inches; light gray (10YR 7/2) sand; single grained; loose; few fine roots; moderately acid; clear wavy boundary.

Btg1—29 to 40 inches; light gray (10YR 7/2) fine sandy loam; weak medium subangular blocky structure; friable; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid; gradual smooth boundary.

Btg2—40 to 48 inches; gray (N 6/0) sandy clay loam; weak medium subangular blocky structure; friable; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; slightly acid; diffuse smooth boundary.

Cg—48 to 62 inches; gray (10YR 6/1) fine sandy loam; massive; friable; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and few medium distinct bluish gray (5B 6/1) iron depletions; slightly acid.

The solum is more than 40 inches thick. The soils are slightly acid or moderately acid in the A horizon, moderately acid to neutral in the E horizon, and strongly acid to moderately alkaline throughout the lower part of the profile.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1. Texture is loamy sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Texture is sand or loamy sand.

The Btg horizon has hue of 10YR or is neutral in hue and has value of 6 or 7 and chroma of 0 to 2. It has masses of iron accumulation in shades of brown or yellow. Texture is dominantly sandy loam and fine sandy loam but ranges to sandy clay loam.

The Cg horizon has hue of 10YR or is neutral in hue and has value of 6 or 7 and chroma of 0 to 2. Texture is loamy sand, sandy loam, or fine sandy loam.

Eunola Series

The Eunola series consists of moderately well drained, moderately permeable soils that formed in sandy and loamy sediments on the Coastal Plain. These soils are on stream terraces. Slopes are 0 to 2 percent. The soils are classified as fine-loamy, siliceous, thermic Aquic Hapludults.

Eunola soils are in landscape positions adjacent to Chenneby, Lynchburg, and Paxville soils. These adjacent soils are shallower to a high water table than the Eunola soils.

Typical pedon of Eunola loamy sand, 0 to 2 percent slopes; about 18 miles northwest of St. Matthews, 3.5 miles west on S.C. Highway 6 from U.S. Highway 601 in St. Matthews, 14.25 miles northwest on U.S. Highway 176, about 1.6 miles northeast of the road:

A—0 to 5 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; friable; few coarse, common medium, and many fine roots; very strongly acid; gradual smooth boundary.

Bt1—5 to 11 inches; yellowish brown (10YR 5/4) sandy loam; weak fine granular structure; friable; few coarse and common medium roots; very strongly acid; gradual smooth boundary.

Bt2—11 to 27 inches; yellowish brown (10YR 5/4) sandy clay loam; common medium faint yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; few medium roots; very strongly acid; gradual smooth boundary.

Bt3—27 to 32 inches; brown (10YR 5/3) sandy clay loam; weak medium subangular blocky structure; friable; common fine distinct light gray (10YR 7/2) iron depletions and common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; gradual smooth boundary.

Btg—32 to 41 inches; light gray (10YR 7/1) sandy loam; weak medium subangular blocky structure; friable; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; gradual smooth boundary.

2C1—41 to 46 inches; light gray (10YR 7/1) loamy coarse sand; massive; friable; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; gradual smooth boundary.

2C2—46 to 60 inches; dark brown (10YR 4/3) loamy coarse sand; massive; friable; very strongly acid; clear smooth boundary.

2C3—60 to 64 inches; brown (7.5YR 5/2) coarse sandy loam; common medium distinct reddish brown (5YR 5/4) mottles; massive; firm; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. The soils are strongly acid or very strongly acid throughout, except for the surface layer in limed areas.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Texture is loamy sand.

The upper part of the Bt horizon commonly has hue of 10YR but has hue of 2.5Y in some areas. It has value of 5 to 7 and chroma of 4 to 6. It has common or many masses of iron accumulation in shades of yellow, brown, or red and iron depletions in shades of gray. Texture is sandy loam or sandy clay loam.

The lower part of the Bt horizon has the same hue and value as the upper part but has chroma ranging from 0 to 6. It has common or many masses of iron accumulation in shades of yellow, brown, or red and iron depletions in shades of gray. Texture is sandy clay loam.

The C horizon has hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 1 to 4. It is loamy coarse sand, loamy sand, or sandy loam or consists of these textures stratified with sandy clay loam.

Faceville Series

The Faceville series consists of well drained, moderately permeable soils that formed in clayey marine sediments on uplands of the Coastal Plain. Slopes range from 0 to 10 percent. These soils are classified as clayey, kaolinitic, thermic Typic Kandiudults.

Faceville soils are in landscape positions adjacent to Dothan, Greenville, Orangeburg, Noboco, and Norfolk soils. Dothan, Orangeburg, Noboco, and Norfolk soils are fine-loamy. Dothan, Noboco, and Norfolk soils have hues that are yellower than 5YR. Greenville soils have color values that are less than 4.

Typical pedon of Faceville fine sandy loam, 2 to 6 percent slopes; about 3 miles east of St. Matthews, 1.1 miles east on S.C. Highway 6 from U.S. Highway 601, about 1.85 miles northeast on S-9-43, about 50 feet south of the road:

Ap—0 to 8 inches; brown (7.5YR 5/4) fine sandy loam; weak fine granular structure; friable; common fine roots; moderately acid; clear smooth boundary.
Bt1—8 to 34 inches; red (2.5YR 4/6) clay; weak medium subangular blocky structure; friable; moderately acid; diffuse smooth boundary.
Bt2—34 to 48 inches; red (2.5YR 4/6) clay; common medium distinct reddish yellow (7.5YR 6/6) mottles; weak medium subangular blocky structure; friable; few ironstone and quartz nodules; strongly acid; diffuse smooth boundary.
Bt3—48 to 61 inches; red (2.5YR 4/6) sandy clay; many coarse distinct reddish yellow (7.5YR 6/6) mottles; weak medium subangular blocky structure; friable; very strongly acid.

The solum is more than 65 inches thick. The soils are moderately acid to very strongly acid in the upper part, except for the surface in limed areas, and strongly acid or very strongly acid in the lower part.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4. Texture is fine sandy loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. In some pedons the lower part of this horizon has few to many mottles in shades of yellow or brown. Texture is sandy clay or clay.

Fuquay Series

The Fuquay series consists of well drained soils that formed in sandy and loamy marine sediments on uplands of the Coastal Plain. Permeability is moderate in the upper part of the subsoil and slow in the lower part. Slopes range from 0 to 6 percent. These soils are classified as loamy, siliceous, thermic Arenic Plinthic Kandiudults.

Fuquay soils are in landscape positions adjacent to Ailey, Dothan, Noboco, Norfolk, and Orangeburg soils. Ailey soils have a hard, compact, slightly cemented subsoil. Dothan, Noboco, Norfolk, and Orangeburg soils have an argillic horizon within a depth of 20 inches.

Typical pedon of Fuquay sand, 0 to 6 percent slopes; about 14 miles south of St. Matthews, 1.7 miles southwest on U.S. Highway 601 from S.C. Highway 6, about 12.8 miles southeast on U.S. Highway 176, about 0.6 mile southwest of the southernmost intersection of S-9-176, about 0.3 mile southwest on a field road, 120 feet northwest of the road:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; friable; neutral; clear smooth boundary.
E—7 to 23 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; slightly acid; clear smooth boundary.

Bt—23 to 41 inches; strong brown (7.5YR 5/6) sandy clay loam; common medium distinct red (10R 4/8) mottles; weak medium subangular blocky structure; friable; about 1 percent nodules of plinthite; very strongly acid; diffuse smooth boundary.
Btv1—41 to 53 inches; strong brown (7.5YR 5/8) sandy clay loam; many coarse prominent red (10R 4/8) mottles; weak medium subangular blocky structure; friable; about 6 percent nodules of plinthite; very strongly acid; gradual smooth boundary.
Btv2—53 to 63 inches; strong brown (7.5YR 5/8) sandy clay; many coarse prominent red (10R 4/8) mottles; weak medium subangular blocky structure; friable; about 8 percent nodules of plinthite; common medium distinct light gray (10YR 7/2) iron depletions; very strongly acid.

The solum is more than 65 inches thick. The soils range from moderately acid to very strongly acid throughout, except for the surface layer in limed areas. The depth to a horizon containing more than 5 percent plinthite ranges from 38 to 60 inches.

The A or Ap horizon has hue of 10YR, value of 4, and chroma of 2 or 3. Texture is sand.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 4. Texture is sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8. It has few or common mottles in shades of red or yellow. Texture is sandy clay loam.

The Btv horizon has colors similar to those of the Bt horizon. The number of gray iron depletions having a higher content of clay ranges from none to common. The horizon is more friable than surrounding areas with higher chroma. It is sandy clay loam or sandy clay and contains 5 to 10 percent nodules of plinthite.

Goldsboro Series

The Goldsboro series consists of moderately well drained, moderately permeable soils that formed in loamy sediments on the Coastal Plain. These soils are on broad interstream divides. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, siliceous, thermic Aquic Paleudults.

Goldsboro soils are in landscape positions adjacent to Coxville, Lynchburg, Noboco, Norfolk, and Rains soils. Coxville soils have a clayey particle-size control section. Lynchburg and Rains soils are shallower to a high water table than the Goldsboro soils, and Noboco and Norfolk soils are deeper to a high water table.

Typical pedon of Goldsboro loamy sand, 0 to 2 percent slopes; about 2.6 miles southeast of Creston, 2.5 miles southeast on S.C. Highway 6 from S.C. Highway 33, about 0.70 mile southwest on S-9-128, about 100 feet south of the road:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; moderately acid; clear smooth boundary.
E—7 to 12 inches; very pale brown (10YR 7/3) loamy sand; weak fine granular structure; very friable; common fine roots; moderately acid; clear smooth boundary.
Bt1—12 to 28 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; strongly acid; gradual smooth boundary.
Bt2—28 to 40 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; common medium prominent red (10YR 4/6) masses of iron accumulation and few medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual smooth boundary.
Bt3—40 to 55 inches; yellowish brown (10YR 5/4) sandy clay loam; moderate medium subangular blocky structure; friable; many medium distinct light gray (10YR 6/1) iron depletions and common medium distinct yellowish red (5YR 4/6) masses of iron accumulation; very strongly acid; gradual smooth boundary.

Bt4—55 to 62 inches; about 45 percent light gray (10YR 6/1) and 45 percent yellowish red (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; common medium prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid.

The solum is more than 60 inches thick. The soils are strongly acid or very strongly acid throughout, except in limed areas.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2. Texture is loamy sand.

The E horizon, if it occurs, has hue of 10YR, value of 6 or 7, and chroma of 3 to 6. Texture is loamy sand or fine sandy loam.

The upper part of the Bt horizon has hue of 10YR, value of 5 to 7, and chroma of 4 to 8. The lower part has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 1 to 8, or it has a combination of these colors. The horizon has common or many masses of iron accumulation in shades of yellow, brown, or red. Iron depletions with low chroma, which are indicative of wetness, range from few to many and occur at a depth of 19 to 30 inches. Texture is sandy loam or sandy clay loam.

Greenville Series

The Greenville series consists of well drained, moderately permeable soils that formed in clayey sediments on uplands of the Coastal Plain. Slopes range from 0 to 10 percent. The soils are classified as clayey, kaolinitic, thermic Rhodic Kandiudults.

Greenville soils are in landscape positions adjacent to Dothan, Faceville, Norfolk, and Orangeburg soils. Dothan, Norfolk, and Orangeburg soils have a fine-loamy particle-size control section. Faceville soils have a control section with value of 4 or more.

Typical pedon of Greenville fine sandy loam, 0 to 2 percent slopes; about 2.5 miles southeast of Fort Motte, 600 feet northeast on U.S. Highway 601 from Wiles Crossroads at S.C. Highway 419, about 28 feet west of the road:

Ap—0 to 7 inches; yellowish red (5YR 5/6) fine sandy loam; weak fine granular structure; friable; common fine roots; moderately acid; clear smooth boundary.

Bt1—7 to 12 inches; dark red (2.5YR 3/6) sandy clay; weak medium subangular blocky structure; friable; common fine roots; strongly acid; clear smooth boundary.

Bt2—12 to 31 inches; dark red (2.5YR 3/6) clay; moderate medium subangular blocky structure; firm; strongly acid; diffuse smooth boundary.

Bt3—31 to 68 inches; dark red (10R 3/6) clay; moderate medium subangular blocky structure; firm; very strongly acid.

The solum is more than 60 inches thick. The soils are strongly acid or very strongly acid throughout, except for the surface layer in limed areas.

The A horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6. Texture is fine sandy loam.

The Bt horizon has hue of 10R or 2.5YR, value of 3, and chroma of 4 to 6. In some pedons the lower part of this horizon has mottles in shades of red or brown. Texture is sandy clay or clay.

Grifton Series

The Grifton series consists of poorly drained, moderately permeable soils that formed in loamy and sandy sediments on the Coastal Plain. These soils are on flood plains. Slopes are less than 1 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Endoaqualfs.

Grifton soils are in landscape positions adjacent to Coxville, Elloree, Johnston, Lynchburg, Noboco, Norfolk, and Rains soils. Coxville, Lynchburg, Noboco, Norfolk, and Rains soils are Ultisols. Coxville soils are clayey. Lynchburg, Noboco, and Norfolk soils are deeper to a high water table than the Grifton soils. Elloree soils are Arenic. Johnston soils have a thick umbric epipedon.

Typical pedon of Grifton fine sandy loam in an area of Grifton and Elloree soils, frequently flooded; about 15 miles southeast of St. Matthews, 12 miles southeast on U.S. Highway 176 from U.S. Highway 601, about 1.4 miles southwest on S-9-19, about 100 feet southeast of the road:

A—0 to 5 inches; dark gray (10YR 4/1) fine sandy loam; weak fine subangular blocky structure; friable; few fine and common medium roots; moderately acid; clear smooth boundary.

E—5 to 9 inches; gray (10YR 6/1) fine sandy loam; weak fine subangular blocky structure; friable; few fine roots; slightly acid; gradual wavy boundary.

Btg—9 to 29 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; firm; very sticky, very plastic; common medium distinct light yellowish brown (2.5Y 6/4) masses of iron accumulation; mildly alkaline; gradual wavy boundary.

BCg—29 to 42 inches; gray (10YR 6/1) fine sandy loam; weak medium subangular blocky structure; friable; common medium distinct yellowish brown (2.5Y 6/4) masses of iron accumulation; moderately alkaline; gradual wavy boundary.

Cg1—42 to 51 inches; light gray (10YR 7/2) loamy fine sand; massive; friable; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; moderately alkaline; gradual wavy boundary.

Cg2—51 to 64 inches; light gray (10YR 7/1) fine sand; massive; very friable; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; moderately alkaline.

The solum is more than 40 inches thick. The soils are slightly acid or moderately acid in the A and E horizons and slightly acid to moderately alkaline in the B and C horizons.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Texture is fine sandy loam.

The E horizon, if it occurs, has hue of 10YR, value of 4 to 7, and chroma of 1. Texture is loamy sand or fine sandy loam.

The Btg horizon has hue of 10YR, value of 4 to 6, and chroma of 1. In most pedons it has common masses of iron accumulation with higher chroma. Texture is sandy clay loam that is firm and very sticky and very plastic.

The BCg horizon has colors similar to those of the Btg horizon. Texture is sandy loam or fine sandy loam.

The Cg horizon has hue of 10YR, value of 6 or 7, and chroma of 1 or 2. Texture is variable but commonly is fine sand, loamy sand, or loamy fine sand.

Johnston Series

The Johnston series consists of very poorly drained soils that formed in loamy and sandy sediments on the Coastal Plain and in the Sandhills. These soils are moderately rapidly permeable in the A horizon and rapidly permeable in the C horizon. They are on flood plains. Slopes are less than 1 percent. The soils are classified as coarse-loamy, siliceous, thermic Cumulic Humaquepts.

Johnston soils are in landscape positions adjacent to Coxville, Elloree, Grifton, Lynchburg, Ogeechee, and Rains soils. These adjacent soils have an argillic horizon

and have more clay in the control section than the Johnston soils. Elloree and Grifton soils are Alfisols. Lynchburg, Ogeechee, and Rains soils are Ultisols.

Typical pedon of Johnston fine sandy loam, frequently flooded; about 1.8 miles southwest of Creston on S.C. Highway 33, about 1.4 miles southeast on S-9-27, about 60 feet west of the road:

A—0 to 34 inches; black (10YR 2/1) fine sandy loam; massive; friable; many medium and few fine roots; thin deposits of very dark grayish brown loamy sand on surface; very strongly acid; gradual smooth boundary.
Cg1—34 to 55 inches; grayish brown (2.5Y 5/2) loamy fine sand; common medium distinct grayish brown (10YR 5/2) mottles; single grained; friable; many medium and few fine roots; very strongly acid; gradual smooth boundary.
Cg2—55 to 65 inches; light gray (10YR 7/1) sand; single grained; loose; very strongly acid.

The soils are strongly acid or very strongly acid throughout.

The A horizon has hue of 10YR or is neutral in hue and has value of 2 or 3 and chroma of 0 to 2. Texture is fine sandy loam.

The Cg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. Texture is sand, loamy sand, or loamy fine sand.

Lucy Series

The Lucy series consists of well drained soils that formed in sandy and loamy sediments on uplands of the Coastal Plain. These soils are moderately permeable in the subsoil. They are on broad ridges and side slopes. Slopes range from 0 to 6 percent. The soils are classified as loamy, siliceous, thermic Arenic Kandiudults.

Lucy soils are in landscape positions adjacent to Ailey, Fuquay, Orangeburg, Troup, and Vaucluse soils. Ailey soils have a dense, compact subsoil. Troup soils are Grossarenic. Fuquay soils are plinthic. Vaucluse and Orangeburg soils have an argillic horizon within a depth of 20 inches.

Typical pedon of Lucy sand, 0 to 6 percent slopes; 1.1 miles northeast of St. Matthews, about 0.85 mile northeast on U.S. Highway 601 from S.C. Highway 6 in St. Matthews, 0.1 mile southeast on an unmarked road, about 285 feet northeast of the road:

Ap—0 to 7 inches; brown (10YR 4/3) sand; weak fine granular structure; very friable; many fine roots; strongly acid; gradual smooth boundary.
E—7 to 26 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; few fine roots; very strongly acid; gradual smooth boundary.
Bt1—26 to 46 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid; diffuse smooth boundary.
Bt2—46 to 63 inches; red (2.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. The soils are strongly acid or very strongly acid throughout, except for the surface layer in limed areas.

The A horizon has hue of 10YR, value of 4 to 6, and chroma of 2 or 3. Texture is sand.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 4 or 5. Texture is sand.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 6 to 8. Texture is sandy clay loam.

Lynchburg Series

The Lynchburg series consists of somewhat poorly drained, moderately permeable soils that formed in loamy sediments on the Coastal Plain. These soils are on low, broad interstream divides or slightly depressional upland flats. Slopes are less than 1 percent. The soils are classified as fine-loamy, siliceous, thermic Aeric Paleaquults.

Lynchburg soils are in landscape positions adjacent to Coxville, Goldsboro, Noboco, Norfolk, Ogeechee, and Rains soils. Coxville, Ogeechee, and Rains soils are shallower to a high water table than the Lynchburg soils. Coxville soils have a clayey particle-size control section. Goldsboro, Noboco, and Norfolk soils are deeper to a high water table than the Lynchburg soils.

Typical pedon of Lynchburg loamy sand; about 2.6 miles southeast of Creston, 2.5 miles southeast on S.C. Highway 6 from S.C. Highway 33, about 0.85 mile southwest on S-9-128, about 500 feet northwest of the road:

A—0 to 3 inches; very dark gray (10YR 3/1) loamy sand; weak medium granular structure; very friable; few large, common medium, and many fine roots; very strongly acid; clear smooth boundary.

E—3 to 7 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; few coarse and medium and common fine roots; very common fine faint reddish yellow (10YR 5/4) masses of iron accumulation; strongly acid; clear smooth boundary.

BE—7 to 17 inches; light yellowish brown (10YR 6/4) sandy loam; weak medium subangular blocky structure; friable; few coarse and common medium roots; common medium distinct reddish yellow (7.5YR 6/6) masses of iron accumulation and common medium faint light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual smooth boundary.

Btg1—17 to 37 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; common medium prominent brownish yellow (10YR 6/8) masses of iron accumulation; strongly acid; diffuse smooth boundary.

Btg2—37 to 48 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; common coarse prominent reddish yellow (7.5YR 6/8) and common medium distinct red (2.5YR 4/6) masses of iron accumulation; strongly acid; diffuse smooth boundary.

Btg3—48 to 65 inches; gray (N 6/0) sandy clay loam; weak medium subangular blocky structure; friable; common coarse prominent red (2.5YR 4/6) and common medium distinct reddish yellow (7.5YR 6/8) masses of iron accumulation; strongly acid.

The solum is more than 60 inches thick. The soils are strongly acid or very strongly acid throughout, except for the surface layer in limed areas.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. Texture is loamy sand.

The E horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 to 4. Texture is loamy sand.

The Bt horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It has iron depletions in shades of gray. Texture is sandy clay loam.

The Btg horizon has hue of 10YR or is neutral in hue and has value of 4 to 6 and chroma of 0 to 2. The Bt and Btg horizons have masses of iron accumulation in shades of yellow, red, or brown. Texture is sandy clay loam.

Mullers Series

The Mullers series consists of somewhat poorly drained, slowly permeable soils that formed in loamy sediments washed predominantly from soils that formed in material weathered from schist, gneiss, granite, phyllite, and other metamorphic and

igneous rocks. These soils are on major flood plains, mostly along the Congaree River. Slopes are less than 1 percent. The soils are classified as fine, mixed, acid, thermic Aeric Fluvaquents.

Mullers soils are in landscape positions adjacent to Chenneby, Congaree, Johnston, Ogeechee, and Paxville soils. Chenneby, Johnston, and Paxville soils are shallower to a high water table than the Mullers soils, and Congaree soils are deeper to a high water table.

Typical pedon of Mullers silty clay loam, frequently flooded; about 18 miles northwest of St. Matthews, 3.4 miles west on S.C. Highway 6 from U.S. Highway 601 in St. Matthews, 12.2 miles northwest on U.S. Highway 176 from S.C. Highway 6, about 0.4 mile north of S-9-31 at U.S. Highway 176, about 1.1 miles north on a field road, about 30 feet north of the field road:

A—0 to 2 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine granular structure; friable; many fine and many medium roots; silt residues on leaf surfaces; strongly acid; clear smooth boundary.

Bw1—2 to 10 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; common fine and few medium roots; common medium faint yellowish brown (10YR 5/4) and common medium distinct yellowish red (5YR 5/8) masses of iron accumulation; extremely acid; gradual smooth boundary.

Bw2—10 to 16 inches; brown (10YR 5/3) silty clay loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; few medium roots; many medium distinct yellowish red (5YR 5/8) masses of iron accumulation and many coarse distinct light brownish gray (10YR 6/2) iron depletions; extremely acid; clear smooth boundary.

Bg1—16 to 33 inches; gray (10YR 5/1) silty clay; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; common fine distinct red (2.5YR 5/6) masses of iron accumulation; strongly acid; gradual smooth boundary.

Bg2—33 to 64 inches; dark gray (10YR 4/1) clay; weak medium subangular blocky structure; firm; slightly sticky, slightly plastic; few fine dark manganese concretions; common medium faint very dark gray (10YR 3/1) iron depletions and common medium distinct reddish yellow (5YR 6/6) masses of iron accumulation; extremely acid.

The thickness of the solum ranges from 40 to more than 70 inches. The soils are very strongly acid or extremely acid throughout. The quantity of flakes of mica ranges from none to common throughout the profile, except for the surface layer. The 10- to 40-inch control section contains more than 25 percent silt.

The A horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 2 to 4. Texture is silty clay loam.

The Bw horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6 and has few to many iron depletions with chroma of 2 or less, or it is a combination of masses of iron accumulations in shades of brown or red and iron depletions in shades of gray. Texture is silt loam or silty clay loam.

The Bg horizon has hue of 10YR or is neutral in hue and has value of 4 to 7 and chroma of 0 or 1. It has masses of iron accumulation in shades of brown, yellow, or red. Texture is silty clay loam, silty clay, or clay.

Noboco Series

The Noboco series consists of well drained, moderately permeable soils that formed in loamy sediments on uplands of the Coastal Plain. Slopes range from 0 to 6 percent. These soils are classified as fine-loamy, siliceous, thermic Typic Paleudults.

Noboco soils are in landscape positions adjacent to Goldsboro, Lynchburg, Norfolk, Orangeburg, and Rains soils. Goldsboro, Lynchburg, and Rains soils are shallower to a high water table than the Noboco soils, and Norfolk and Orangeburg soils are deeper to a high water table.

Typical pedon of Noboco loamy sand, 0 to 2 percent slopes; about 12.7 miles southeast of St. Matthews, 1.8 miles south on U.S. Highway 601 from S.C. Highway 6, about 10.8 miles southeast on U.S. Highway 176, about 0.1 mile east on a field road, about 30 feet south of the field road:

Ap—0 to 8 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; very strongly acid; abrupt wavy boundary.
E—8 to 17 inches; olive yellow (2.5Y 6/6) fine sand; weak fine granular structure; very friable; very strongly acid; clear smooth boundary.
Bt1—17 to 34 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid; gradual smooth boundary.
Bt2—34 to 45 inches; olive yellow (2.5Y 6/8) sandy clay loam; common medium distinct red (2.5YR 4/6) and common medium faint reddish yellow (7.5YR 6/6) mottles; weak medium subangular blocky structure; friable; very strongly acid; gradual smooth boundary.
Bt3—45 to 55 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium prominent red (2.5YR 4/6) mottles; weak medium subangular blocky structure; friable; common medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual smooth boundary.
Bt4—55 to 63 inches; brownish yellow (10YR 6/8) sandy clay loam; common coarse prominent red (10R 4/8) mottles; weak medium subangular blocky structure; friable; common coarse distinct light gray (10YR 7/1) iron depletions; red mottles are firm, and grayish iron depletions are friable; very strongly acid.

The solum is more than 60 inches thick. The soils are strongly acid or very strongly acid throughout, except for the surface layer in limed areas. Iron depletions with chroma of 2 or less occur at a depth of 30 to 48 inches.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2. Texture is loamy sand.

The E horizon, if it occurs, has hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 3 to 6. Texture is fine sand, loamy sand, or loamy fine sand.

The upper part of the Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 8. The lower part has the same colors as the upper part and has mottles in shades of red, brown, or yellow and iron depletions in shades of gray, or it has a combination of these colors. The Bt horizon generally is sandy clay loam but ranges to sandy clay below a depth of about 50 inches.

Norfolk Series

The Norfolk series consists of well drained, moderately permeable soils that formed in loamy sediments on uplands of the Coastal Plain. Slopes range from 0 to 6 percent. These soils are classified as fine-loamy, siliceous, thermic Typic Kandiudults.

Norfolk soils are in landscape positions adjacent to Goldsboro, Lynchburg, Noboco, Ogeechee, Orangeburg, and Rains soils. Goldsboro, Lynchburg, Noboco, Ogeechee, and Rains soils are shallower to a high water table than the Norfolk soils. Orangeburg soils are redder than the Norfolk soils.

Typical pedon of Norfolk loamy sand, 0 to 2 percent slopes; about 10 miles southeast of St. Matthews, 1.7 miles south on U.S. Highway 601 from S.C. Highway 6 in St. Matthews, 8.2 miles southeast on U.S. Highway 176, about 0.1 mile northeast on S-9-214, about 75 feet southeast of the road in a field:

Ap—0 to 9 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; common medium and common fine roots; slightly acid; abrupt wavy boundary.
E—9 to 11 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; few fine roots; strongly acid; abrupt wavy boundary.
Bt1—11 to 36 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid; diffuse smooth boundary.
Bt2—36 to 51 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium faint strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable; strongly acid; gradual smooth boundary.
Bt3—51 to 62 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct light red (2.5YR 5/6) mottles; weak medium subangular blocky structure; friable; common medium distinct light gray (10YR 7/2) iron depletions; extremely acid.

The solum is more than 60 inches thick. The soils are strongly acid to extremely acid throughout, except in limed areas. Gray iron depletions, which are indicative of wetness, occur below a depth of 50 inches.

The A horizon has hue of 10YR, value of 4 to 6, and chroma of 2 or 3. Texture is loamy sand.

The E horizon, if it occurs, has hue of 10YR, value of 6 or 7, and chroma of 4. Texture is loamy sand or sand.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8. Few or common reddish mottles may occur. The lower part of the Bt horizon has colors similar to those of the upper part but also can have value of 7. It has mottles in shades of red, brown, or yellow or iron depletions in shades of gray. The Bt horizon is sandy clay loam.

Ogeechee Series

The Ogeechee series consists of poorly drained, moderately permeable soils that formed in loamy and sandy sediments on uplands of the Coastal Plain. These nearly level soils are in drainageways or in slight depressions. Slopes are less than 1 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Endoaquults.

Ogeechee soils are in landscape positions adjacent to Coxville, Goldsboro, Grifton, Lynchburg, and Rains soils. Coxville, Goldsboro, Lynchburg, and Rains soils do not have a 20 percent decrease in clay within a depth of 60 inches. Goldsboro and Lynchburg soils are deeper to a high water table than the Ogeechee soils. Grifton soils are Alfisols.

Typical pedon of Ogeechee loamy sand; about 11.1 miles southeast of St. Matthews, 1.7 miles south on U.S. Highway 601 from S.C. Highway 6 in St. Matthews, 8.1 miles southeast on U.S. Highway 176, about 0.7 mile southwest on S-9-90, about 0.6 mile southeast on S-9-126, about 50 feet southeast of the road:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; very strongly acid; clear smooth boundary.
E—7 to 16 inches; light brownish gray (10YR 6/2) loamy sand; common medium distinct brownish yellow (10YR 6/6) mottles; weak fine granular structure; friable; strongly acid; clear smooth boundary.
Btg1—16 to 31 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; strongly acid; gradual smooth boundary.
Btg2—31 to 40 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; common medium distinct brownish yellow

(10YR 6/6) and few medium prominent red (2.5YR 4/6) masses of iron accumulation; strongly acid; gradual smooth boundary.
BCg—40 to 53 inches; light gray (10YR 7/1) sandy loam; weak medium subangular blocky structure; friable; common coarse pockets of sand; common medium distinct brownish yellow (10YR 6/6) and few fine distinct red (2.5YR 4/6) masses of iron accumulation; strongly acid; gradual smooth boundary.
Cg—53 to 64 inches; light brownish gray (10YR 6/2) loamy sand; massive; friable; common medium faint light yellowish brown (10YR 6/4) masses of iron accumulation; very strongly acid.

The solum is more than 52 inches thick. The soils are strongly acid or very strongly acid throughout, except for the surface layer in limed areas.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. Texture is loamy sand.

The E horizon, if it occurs, has hue of 10YR, value of 6, and chroma of 1 or 2. Texture is loamy sand.

The Btg horizon has hue of 10YR, value of 6 or 7, and chroma of 1 or 2. The lower part of this horizon has common or many masses of iron accumulation in shades of red, brown, or yellow. Texture is sandy clay loam.

The BCg horizon has hue of 10YR or 2.5Y or is neutral in hue and has value of 5 to 7 and chroma of 0 to 2. Texture is sandy loam or sandy clay loam.

The Cg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 1 or 2. The horizon ranges from sand to sandy clay loam and is commonly stratified with other textures.

Orangeburg Series

The Orangeburg series consists of well drained, moderately permeable soils that formed in loamy sediments on uplands of the Coastal Plain. Slopes range from 0 to 10 percent. These soils are classified as fine-loamy, siliceous, thermic Typic Kandiudults.

Orangeburg soils are in landscape positions adjacent to Ailey, Dothan, Faceville, Greenville, Norfolk, and Vaucluse soils. Ailey soils have a sandy surface layer that is 20 to 40 inches thick. Faceville and Greenville soils are clayey. Dothan and Norfolk soils are yellower than the Orangeburg soils. Vaucluse soils have a firm, compact subsoil.

Typical pedon of Orangeburg loamy sand, 2 to 6 percent slopes; about 9 miles west of St. Matthews, 8 miles west on S.C. Highway 6 from U.S. Highway 601, about 0.85 mile southwest on S.C. Highway 172, about 100 feet south of the road:

Ap—0 to 7 inches; brown (10YR 4/3) loamy sand; weak medium granular structure; very friable; common fine roots; strongly acid; abrupt wavy boundary.
E—7 to 16 inches; reddish yellow (7.5YR 6/6) loamy sand; weak fine granular structure; very friable; common fine roots; strongly acid; gradual wavy boundary.
Bt1—16 to 35 inches; yellowish red (5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; strongly acid; diffuse smooth boundary.
Bt2—35 to 58 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; strongly acid; diffuse smooth boundary.
Bt3—58 to 75 inches; red (2.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; very strongly acid.

The solum is more than 75 inches thick. The soils are moderately acid to strongly acid in the A and E horizons and strongly acid or very strongly acid in the Bt horizon.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4 or has hue of 7.5YR and value and chroma of 4. Texture is loamy sand.

The E horizon, if it occurs, has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 6. Texture is sand or loamy sand.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. Texture is sandy clay loam.

Paxville Series

The Paxville series consists of very poorly drained, moderately permeable soils that formed in loamy sediments on the Coastal Plain. These soils are on terraces of the Congaree River. Slopes are less than 1 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Umbraquults.

Paxville soils are in landscape positions adjacent to Chenneby, Congaree, and Johnston soils. These adjacent soils are on flood plains. They do not have an argillic horizon.

Typical pedon of Paxville loam; about 19 miles northwest of St. Matthews, 3.5 miles west on S.C. Highway 6 from U.S. Highway 601 in St. Matthews, 15.25 miles northwest on U.S. Highway 176, about 0.5 mile northeast on S-9-393, about 0.4 mile east on a woodland road, about 50 feet north of the road:

A1—0 to 12 inches; black (N 2/0) loam; weak fine granular structure; friable; common clean sand grains; few medium flakes of mica; very strongly acid; gradual smooth boundary.

A2—12 to 17 inches; black (10YR 2/1) coarse sandy loam; weak fine granular structure; friable; few fine flakes of mica; extremely acid; gradual smooth boundary.

Btg1—17 to 34 inches; very dark gray (10YR 3/1) sandy clay loam; weak medium subangular blocky structure; friable; few fine flakes of mica; very strongly acid; gradual smooth boundary.

Btg2—34 to 46 inches; very dark grayish brown (10YR 3/2) clay loam; weak medium subangular blocky structure; friable; few fine flakes of mica; extremely acid; clear smooth boundary.

BCg—46 to 61 inches; gray (10YR 5/1) coarse sandy loam; weak medium subangular blocky structure; friable; few pockets of clay loam and loamy sand; few fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. The soils are strongly acid to extremely acid, except for the surface layer in limed areas.

The A horizon has hue of 10YR or is neutral in hue and has value of 2 and chroma of 0 or 1. Texture is loam.

The Btg horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is sandy clay loam or clay loam.

The BCg horizon has hue of 10YR, value of 4 or 5, and chroma of 1. Texture is coarse sandy loam or sandy loam.

Pelion Series

The Pelion series consists of moderately well drained, moderately slowly permeable or slowly permeable soils that formed in loamy sediments on uplands of the Coastal Plain and the Sandhills. These soils are on ridges and side slopes. Slopes range from 2 to 15 percent. The soils are classified as fine-loamy, siliceous, thermic Aquic Kanhapludults.

Pelion soils are in landscape positions adjacent to Ailey, Alpin, Troup, and Vaucluse soils. Ailey soils are Arenic. Troup soils are Grossarenic. Alpin soils are sandy throughout. Vaucluse soils are deeper to a high water table than the Pelion soils.

Typical pedon of Pelion coarse sand, 6 to 10 percent slopes; in the community of Sandy Run about 19 miles northwest of St. Matthews, 3.5 miles northwest on S.C. Highway 6 from U.S. Highway 601 in St. Matthews, about 15 miles northwest on U.S. Highway 176, about 0.25 mile west on S-9-316, about 0.6 mile north on a field road to the western edge of the field, 100 feet west of the edge of the field:

A—0 to 5 inches; dark grayish brown (10YR 4/2) coarse sand; weak fine granular structure; very friable; common medium and common fine roots; very strongly acid; clear smooth boundary.

BA—5 to 9 inches; olive yellow (2.5Y 6/6) loamy coarse sand; weak fine granular structure; friable; few fine roots; very strongly acid; clear smooth boundary.

Bt1—9 to 16 inches; olive yellow (2.5Y 6/6) sandy clay loam; weak medium subangular blocky structure; friable; common medium distinct light gray (10YR 7/2) iron depletions; very strongly acid; gradual wavy boundary.

Bt2—16 to 25 inches; light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; friable; many coarse distinct yellow (2.5Y 7/6) and common medium faint reddish yellow (5YR 6/6) masses of iron accumulation; very strongly acid; gradual smooth boundary.

Bt3—25 to 38 inches; yellow (2.5Y 7/6) sandy clay loam; weak medium subangular blocky structure; firm; compact and brittle in 30 percent of the mass; many medium distinct light gray (10YR 7/2) iron depletions and common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; very strongly acid; diffuse wavy boundary.

BC1—38 to 46 inches; light gray (2.5Y 7/2) sandy clay loam; weak medium subangular blocky structure; firm; common fine flakes of mica; common medium distinct reddish yellow (5YR 6/6) masses of iron accumulation; extremely acid; gradual wavy boundary.

BC2—46 to 57 inches; about 45 percent reddish yellow (5YR 6/6) and 45 percent light gray (10YR 7/2) sandy loam; weak medium subangular blocky structure; firm; common fine flakes of mica; common medium distinct reddish yellow (7.5YR 6/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

C—57 to 68 inches; reddish yellow (7.5YR 6/6) loamy coarse sand; massive; friable; few fine balls of kaolin clay; common medium distinct pinkish gray (7.5YR 7/2) iron depletions; extremely acid.

The solum is more than 46 inches thick. The soils are strongly acid to extremely acid throughout, except for the surface layer in limed areas.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Texture is coarse sand.

The BA horizon, if it occurs, has hue of 2.5YR and value and chroma of 6. Texture is loamy coarse sand.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 6 or 7, and chroma of 6 to 8. In some pedons it has masses of iron accumulation in shades of red, brown, or yellow. Iron depletions with chroma of 2 or less occur within the upper 24 inches of the argillic horizon. Texture is sandy clay loam. The horizon is firm, dense, and slightly cemented.

The BC horizon has hue of 5YR to 2.5Y, value of 5 or 6, and chroma of 1 to 6. It commonly has a combination of red, brown, or yellow masses of iron accumulation and gray iron depletions. The horizon generally is sandy loam or sandy clay loam and commonly has thin strata of contrasting textures.

The C horizon has hue of 2.5YR to 10YR, value of 6 or 7, and chroma of 4 to 8. It commonly has a combination of red, brown, or yellow masses of iron accumulation and gray iron depletions. The horizon is loamy coarse sand that commonly has thin strata of contrasting textures.

Rains Series

The Rains series consists of poorly drained, moderately permeable soils that formed in loamy sediments on the Coastal Plain. These soils are on flats or in slight depressions. Slopes are less than 1 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Paleaquults.

Rains soils are in landscape positions adjacent to Coxville, Goldsboro, Johnston, Lynchburg, Noboco, and Ogeechee soils. Coxville soils have a clayey particle-size control section. Johnston soils have a thick umbric epipedon. Goldsboro, Lynchburg, and Noboco soils are deeper to a high water table than the Rains soils. Ogeechee soils have a significant decrease in clay within a depth of 60 inches.

Typical pedon of Rains sandy loam; about 12 miles southeast of St. Matthews, 1.8 miles southwest on U.S. Highway 601 from S.C. Highway 6, about 10.1 miles southeast on U.S. Highway 176, about 100 feet southwest of the road:

Ap—0 to 7 inches; very dark gray (10YR 3/1) sandy loam; weak fine granular structure; friable; moderately acid; clear smooth boundary.

E—7 to 14 inches; light gray (10YR 7/2) fine sandy loam; weak fine granular structure; very friable; common medium faint brownish yellow (10YR 6/6) masses of iron accumulation; strongly acid; clear smooth boundary.

Btg1—14 to 29 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; common coarse prominent brownish yellow (10YR 6/8) masses of iron accumulation; strongly acid; diffuse smooth boundary.

Btg2—29 to 39 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; common medium faint brownish yellow (10YR 6/6) masses of iron accumulation; strongly acid; gradual smooth boundary.

Btg3—39 to 62 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; lenses of sandy loam in lower part; common medium distinct brownish yellow (10YR 6/8) and few medium prominent red (2.5YR 4/6) masses of iron accumulation; strongly acid.

The solum is more than 60 inches thick. The soils are strongly acid to extremely acid throughout, except in limed areas.

The A horizon has hue of 10YR or is neutral in hue and has value of 2 or 3 and chroma of 0 to 2. Texture is sandy loam.

The E horizon, if it occurs, has hue of 10YR, value of 7, and chroma of 2. Texture is fine sandy loam.

The Btg horizon generally has hue of 10YR, value of 6 or 7, and chroma of 1 or 2. It commonly has masses of iron accumulation in shades of red, brown, or yellow. The horizon commonly is sandy clay loam but ranges to fine sandy loam in the upper part.

Suffolk Series

The Suffolk series consists of well drained, moderately permeable soils than formed in loamy sediments on uplands of the Coastal Plain. Slopes range from 0 to 6 percent. These soils are classified as fine-loamy, siliceous, thermic Typic Hapludults.

Suffolk soils are in landscape positions adjacent to Coxville, Dothan, Fuquay, Lynchburg, Noboco, Norfolk, Ogeechee, Orangeburg, and Rains soils. These adjacent soils, except for Ogeechee soils, do not have a 20 percent decrease in clay within a depth of 60 inches. Coxville, Lynchburg, Ogeechee, and Rains soils are shallower to a high water table than the Suffolk soils.

Typical pedon of Suffolk loamy sand, 2 to 6 percent slopes; about 11 miles southeast of St. Matthews, 8.1 miles southeast on S.C. Highway 6 from U.S. Highway 601 in St. Matthews, 2.6 miles northeast on S.C. Highway 33, about 50 feet northwest of the road:

A—0 to 7 inches; pale brown (10YR 6/3) loamy sand; weak fine granular structure; very friable; moderately acid; abrupt smooth boundary.
E—7 to 12 inches; brownish yellow (10YR 6/6) loamy sand; weak fine granular structure; very friable; moderately acid; clear wavy boundary.
Bt1—12 to 25 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; moderately acid; gradual smooth boundary.
Bt2—25 to 33 inches; brownish yellow (10YR 6/8) sandy loam; weak medium subangular blocky structure; friable; moderately acid; diffuse smooth boundary.
BC—33 to 48 inches; brownish yellow (10YR 6/6) sandy loam; weak medium subangular blocky structure; friable; moderately acid; gradual smooth boundary.
C—48 to 66 inches; yellow (10YR 7/6) loamy sand; massive; very friable; moderately acid.

The thickness of the solum ranges from 38 to 50 inches. The soils are moderately acid to very strongly acid throughout, except for the surface layer in limed areas.

The A or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 2 or 3. Texture is loamy sand.

The E horizon, if it occurs, has hue of 10YR, value of 6 or 7, and chroma of 3 to 6. Texture is loamy sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8. Texture is sandy loam or sandy clay loam.

The BC horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8. Texture is loamy sand, sandy loam, or fine sandy loam.

The C horizon has hue of 7.5YR or 10YR, value of 6 or 7, and chroma of 3 to 8. In some pedons it has mottles in shades of brown or yellow. Texture is sand or loamy sand.

Totness Series

The Totness series consists of poorly drained, moderately permeable soils that formed in recent sandy alluvial sediments on the Coastal Plain. These soils are on flood plains along streams. Slopes are less than 1 percent. The soils are classified as siliceous, thermic Typic Psammaquents.

Totness soils are in landscape positions adjacent to Coxville, Johnston, Ogeechee, and Rains soils. Coxville soils have a clayey particle-size control section. Johnston soils have a thick umbric epipedon. Ogeechee and Rains soils have a fine-loamy particle-size control section. Coxville, Ogeechee, and Rains soils have an argillic horizon.

Typical pedon of Totness loamy coarse sand, frequently flooded; about 10.7 miles northwest of St. Matthews, 3.3 miles west on S.C. Highway 6 from U.S. Highway 601, about 5.8 miles north on U.S. Highway 176 from S.C. Highway 6, about 1.6 miles west on S-9-226, about 100 feet north of the road:

A—0 to 7 inches; dark gray (10YR 4/1) loamy coarse sand; weak medium granular structure; friable; common medium and few fine roots; very strongly acid; abrupt wavy boundary.
Cg1—7 to 32 inches; light gray (N 7/0) coarse sand; single grained; loose; few fine roots; common coarse crystals of white feldspar; strongly acid; gradual wavy boundary.
Cg2—32 to 48 inches; gray (10YR 6/1) coarse sand; single grained; loose; common coarse crystals of white feldspar and few flakes of mica; very strongly acid; clear smooth boundary.
Ab1—48 to 55 inches; black (N 2/0) mucky loam; massive; friable; common fine roots; very strongly acid; gradual wavy boundary.

Ab2—55 to 70 inches; dark gray (N 4/0) loam; massive; friable; very strongly acid; gradual smooth boundary.
Ab3—70 to 74 inches; black (N 2/0) coarse sandy loam; massive; friable; very strongly acid; clear smooth boundary.
C—74 to 80 inches; very dark grayish brown (10YR 3/2) sand; single grained; loose; common coarse sand grains and few white coarse fragments; strongly acid.

The soils are strongly acid or very strongly acid throughout. A few flakes of mica are in some pedons.

The Ab horizon generally is below a depth of 40 inches.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Texture is loamy coarse sand.

The Cg horizon has hue of 10YR, value of 6 or 7, and chroma of 1 or 2, or it is neutral in hue and has value of 7. The horizon is sand, loamy sand, or the coarse analogs of these textures.

The Ab horizon has hue of 10YR or is neutral in hue and has value of 2 to 4 and chroma of 0 or 1. The horizon is coarse sandy loam, sandy loam, fine sandy loam, loam, silt loam, or silty clay loam, is the mucky analogs of these textures, or is stratified with these textures or sandy textures. The content of organic matter ranges from 1 percent to more than 5 percent.

The C or C”g horizon, if it occurs, has hue of 10YR or is neutral in hue and has value of 3 to 7 and chroma of 0 to 2. The horizon is sand, loamy sand, sandy loam, or the fine and coarse analogs of these textures. It is commonly stratified with finer textures.

Troup Series

The Troup series consists of somewhat excessively drained soils that formed in sandy and loamy sediments on uplands of the Coastal Plain and the Sandhills. These soils are very rapidly permeable in the sandy horizons and moderately permeable in the loamy horizons. Slopes range from 0 to 10 percent. The soils are classified as loamy, siliceous, thermic Grossarenic Kandiudults.

Troup soils are in landscape positions adjacent to Ailey, Alpin, Lucy, and Vaucluse soils. Ailey and Vaucluse soils have a dense, brittle, compact subsoil. Vaucluse soils have an argillic horizon within a depth of 20 inches. Alpin soils to a depth of more than 80 inches are sandy throughout. Lucy soils are sandy at a depth of 20 to 40 inches.

Typical pedon of Troup coarse sand, 6 to 10 percent slopes; about 6 miles southwest of Sandy Run, 4.6 miles west on S-9-31 from U.S. Highway 176 in Sandy Run, 2.5 miles south on S-9-65, about 0.8 mile northwest on a woodland trail, about 0.1 mile southwest along a power line, about 30 feet northeast of the power line:

A—0 to 2 inches; dark brown (7.5YR 3/4) coarse sand; weak fine granular structure; very friable; very strongly acid; clear smooth boundary.
E1—2 to 28 inches; strong brown (7.5YR 5/6) coarse sand; single grained; loose; very strongly acid; diffuse smooth boundary.
E2—28 to 52 inches; strong brown (7.5YR 5/8) coarse sand; single grained; loose; very strongly acid; gradual smooth boundary.
E3—52 to 58 inches; reddish yellow (7.5YR 6/8) coarse sand; single grained; loose; extremely acid; clear smooth boundary.
Bt—58 to 80 inches; yellowish red (5YR 5/8) coarse sandy loam; weak medium subangular blocky structure; friable; very strongly acid.

The solum is more than 80 inches thick. The soils are very strongly acid or strongly acid throughout, except for the surface layer in limed areas.

The A horizon has hue of 7.5YR, value of 3, and chroma of 4. Texture is coarse sand.

The E horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 6 to 8. Texture is sand or coarse sand.

The Bt horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8. Texture is coarse sandy loam, sandy loam, or sandy clay loam.

Vaucluse Series

The Vaucluse series consists of well drained soils that formed in loamy sediments on the Coastal Plain. These soils are moderately permeable in the Bt horizon and moderately slowly permeable in the Btx horizon. They are on broad to narrow ridges and in long, narrow areas parallel to streams and drainageways. Slopes range from 2 to 25 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Kanhapludults.

Vaucluse soils are in landscape positions adjacent to Ailey, Dothan, Faceville, Lucy, Orangeburg, Pelion, and Troup soils. Ailey, Lucy, and Troup soils have an argillic horizon below a depth of 20 inches. Dothan and Orangeburg soils do not have as firm a subsoil as the Vaucluse soils or a decrease in clay within a depth of 60 inches. Faceville soils are clayey. Pelion soils have mottles with chroma of 2 or less in the upper part of the profile.

Typical pedon of Vaucluse loamy sand in an area of Ailey-Vaucluse complex, 6 to 15 percent slopes; about 6 miles northwest of St. Matthews, 1.2 miles west on S.C. Highway 6 from U.S. Highway 601, about 3.7 miles northwest on S-9-155 (Doodle Hill Road), 1.0 mile northwest on an unpaved road, about 60 feet southwest of the road:

A—0 to 5 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; very strongly acid; abrupt smooth boundary.

E—5 to 19 inches; brown (10YR 5/3) sand; weak fine granular structure; very friable; about 4 percent rounded quartz that is 1/2- to 1-inch in diameter; mixed with thin layer of A horizon; strongly acid; gradual wavy boundary.

Bt—19 to 28 inches; strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; about 2 percent rounded quartz that is 1/4- to 1-inch in diameter; strongly acid; gradual wavy boundary.

Btx—28 to 48 inches; strong brown (7.5YR 5/6) sandy clay loam; many medium prominent red (2.5YR 4/6) mottles; weak medium subangular blocky structure; firm in about 60 percent of the mass (brown part) and dense, compact, and brittle in rest of horizon (red part); about 5 percent rounded quartz that is 1/2- to 1-inch in diameter; strongly acid; gradual wavy boundary.

2BC1—48 to 50 inches; mottled red (2.5YR 5/6) and reddish yellow (7.5YR 6/6) coarse sandy loam; massive; firm; strongly acid; gradual smooth boundary.

2BC2—50 to 62 inches; reddish yellow (7.5YR 6/6) sandy loam; common medium distinct red (2.5YR 5/6) and few medium faint very pale brown (10YR 7/3) mottles; massive; firm; few small pockets of kaolin clay; strongly acid.

The solum is more than 40 inches thick. The soils are strongly acid to extremely acid throughout, except for the surface layer in limed areas. The depth to a horizon that is firm and compact in part of the mass ranges from 22 to 31 inches. The content of ironstone and gravel ranges from 0 to 5 percent.

The A horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 or 3. Texture is loamy sand.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. Texture is sand or loamy sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8. It may have mottles in shades of red or brown. Texture is sandy loam or sandy clay loam.

The Btx horizon is firm, dense, and compact in part of the mass. It has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8. It has mottles in shades of red, brown, or yellow, or it is coarsely mottled in these colors. In some pedons, the mottles have chroma ranging to 2. Texture commonly is sandy clay or sandy clay loam in the firm or friable, yellow or brown part but ranges to sandy loam in the dense and slightly cemented, red part.

The BC or 2BC horizon has the same range of colors as the Btx horizon. Texture is coarse sandy loam, sandy loam, or sandy clay loam.

Formation of the Soils

This section describes the factors of soil formation as they relate to the soils in the county and discusses the morphology of the soils.

Factors of Soil Formation

Soil is the natural medium for the growth of plants. It is produced by soil-forming processes acting on accumulated geologic material. The five important factors of soil formation are parent material, climate, living organisms (plants and animals), relief, and time.

Climate and living organisms are the active factors of soil formation. Their effect on the parent material is modified by relief and by the length of time that the parent material has been in place. The relative importance of each factor differs from place to place. In some areas one factor dominates soil formation and determines most of the soil properties. In most areas, however, the interaction of all five factors determines the kind of soil that forms.

The soil-forming processes can be better understood if each of the five factors is considered separately. It should be remembered, however, that each of the five factors affects the other four and is affected by the others.

Parent Material

Parent material is the unconsolidated mass in which a soil forms. It determines the mineral and chemical composition of the soil. In Calhoun County, the parent material of the soils is marine or fluvial deposits that have varying amounts of sand, silt, and clay.

All of the soils in the county were deposited or formed during the Pleistocene, or glacial, epoch. During this period the ocean flowed over the area and retreated, perhaps several times. The formations and terraces of the survey area indicate former shorelines and soils of different ages. The terraces in Calhoun County, in sequence from the sea, are the Wicomico, Sunderland, Coharie, and Brandywine Terraces.

The Wicomico Terrace ranges from about 70 to 100 feet above sea level. It occurs in areas along Lake Marion and on flood plains of the Congaree River. The soils on this terrace are younger than most of the soils at the higher elevations. The common soils include Chenneby, Congaree, Eunola, and Ogeechee soils.

The Sunderland Terrace ranges from about 100 to 170 feet above sea level. It occurs in the southern tip of Calhoun County. The common soils on this terrace include Goldsboro, Noboco, Lynchburg, Coxville, Rains, Grifton, and Elloree soils.

The Coharie Terrace ranges from about 170 to 215 feet above sea level. It occurs in areas around Cameron and Creston. The common soils on this terrace include Dothan, Fuquay, Orangeburg, and Faceville soils.

The Brandywine Terrace ranges from about 215 to 270 feet above sea level. It occurs in a narrow strip above and parallel to the Coharie Terrace, in areas directly south of Fort Motte and St. Matthews. The soils on this terrace are generally similar to

those on the Coharie Terrace. Soils on the Coharie and Brandywine Terraces are more developed than those on the lower terraces.

Climate

Calhoun County has a temperate climate. The amount of rainfall is well distributed throughout the year. The climate is fairly uniform throughout the county, and therefore it does not cause significant differences among the soils.

Precipitation and temperature affect the physical, chemical, and biological relationships in the soil. Water dissolves minerals, aids chemical and biological activity, and transports the dissolved mineral and organic material through the soil profile. Abundant rainfall promotes the leaching of soluble bases and the translocation of less soluble, fine textured soil material downward through the soil profile. The amount of water that percolates through the soil depends on the amount of rainfall, the length of the frost free period, relief, and soil permeability.

Moist conditions and warm temperatures increase the weathering of parent material and the growth and activity of living organisms. The high amount of rainfall, warm temperatures, and long frost free period in the survey area have directly affected the soils of Calhoun County and the other soil-forming factors.

Living Organisms

The number and kinds of plants and animals that live in and on the soils are determined mainly by the climate and, to a lesser extent, by parent material, relief, and the age of the soil.

Bacteria, fungi, and other micro-organisms are necessary for soil formation. They hasten the weathering of minerals and the decomposing of organic matter. The larger plants alter the soil microclimate, furnish organic matter, and transfer chemical elements from the subsoil to the surface layer.

Most of the fungi, bacteria, and other micro-organisms in the soils of Calhoun County are in the upper few inches of the soil profile. The activity of earthworms and other small invertebrates mainly occurs in the A horizon and the upper part of the B horizon. These organisms slowly but continuously mix the soil material. Bacteria and fungi decompose organic matter and release nutrients for plant use.

Animals play a secondary but important role in soil formation. By eating plants, they help to return plant material to the soil. Burrowing animals help to mix and aerate the soil material.

In the better drained areas of Calhoun County, the native vegetation is mainly loblolly pine, longleaf pine, oak, and hickory. In the wetter areas, it is mainly sweetgum, black gum, yellow-poplar, maple, tupelo, ash, and cypress. Large trees affect soil formation by bringing nutrients from deep within the soil to the upper layers, by bringing soil material from varying depths to the surface when a tree is blown over, and by providing large openings in the soil profile to be filled by soil material as large roots decay.

Relief

Relief influences soil formation through its effect on moisture, temperature, and erosion. Differences in relief can cause the formation of different kinds of soil from similar parent material *(5)*.

Calhoun County has three general landscapes that affect the formation of soils. They are as follows:

- Nearly level and gently sloping areas that are moderately dissected by streams. The soils in these areas generally are well drained and deep.

- Broad, nearly level, slightly dissected areas that are between streams. Most of the soils in these areas are yellow to gray, and many are distinctly mottled. The soils are deep and moderately well drained to poorly drained.
- Nearly level areas that are on stream bottoms and low terraces. The soils in these areas are young. They are predominantly gray and have poorly defined generic layers.

Time

The length of time required for a soil to form depends largely on the other soil-forming factors. The soils in Calhoun County range from young to well developed. The soils at the higher elevations in the uplands generally have well developed horizons that are easily recognizable. Where the parent material is very sandy, however, little horizonation has occurred. Where relief is very low and soils are permanently saturated, horizons are only moderately distinct. On the first bottom of streams, soil material has not weathered long enough for the formation of distinct horizons.

Morphology of the Soils

If a vertical cut is made in a soil, several layers or horizons are evident. This differentiation of horizons is the result of many soil-forming processes. These processes include the accumulation of organic matter, the leaching of soluble salts, the reduction and translocation of iron, the formation of soil structure, the physical weathering caused by freezing and thawing, and the chemical weathering of primary minerals or rocks. Some of these processes take place continuously in all soils, but the number of active processes and the degree of their activity vary from one soil to another.

Most soils have four major horizons: A, E, B, and C horizons. These horizons can be subdivided to indicate variations within a horizon. An example is a Bt horizon, which is a subsoil layer that contains translocated clay from the A horizon.

The A horizon is the surface layer. It has the largest accumulation of organic matter of all the horizons. If the soil has been cleared and plowed, this layer is called the Ap horizon. Johnston and Paxville soils are examples of soils that have a distinctive, dark A or Ap horizon.

The E horizon is the layer where the maximum leaching, or eluviation, of clay and iron occurs. It forms directly below the surface layer and is generally the lightest-colored horizon in the soil. Fuquay and Troup soils have a well expressed E horizon.

The B horizon underlies the A or E horizon. It is commonly called the subsoil. It is the layer where the maximum accumulation, or illuviation, of clay, iron, aluminum, and other compounds occurs. Goldsboro, Norfolk, and Faceville soils have a well expressed B horizon.

The C horizon is generally below the B horizon. In some soils, such as Johnston soils, a B horizon has not formed and the C horizon lies directly under the A horizon. The C horizon consists of materials that generally have been little altered by the soil-forming processes but that may have been modified by weathering.

Well drained and moderately well drained soils in Calhoun County have a yellowish brown or reddish subsoil. These colors mainly indicate thin coatings of iron oxide on the sand, silt, and clay particles. A soil is considered well drained if it does not have gray mottles (mottles with chroma of 2 or less) within a depth of at least 30 inches. Faceville and Norfolk soils are examples of well drained soils. Moderately well drained soils are wet for short periods and generally do not have gray mottles within a depth of about 15 to 20 inches. Goldsboro and Eunola soils are examples of moderately well drained soils.

The reduction and transfer of iron are associated with the wetter, more poorly drained soils. This process is called gleying. In poorly drained and very poorly drained soils, such as Coxville and Johnston soils, the subsoil and substratum are gray or grayish. These colors result from the chemical reduction and transfer of iron. Somewhat poorly drained soils, such as Lynchburg soils, have yellowish brown and gray mottles, which indicate the segregation of iron.

References

(1) American Association of State Highway and Transportation Officials. 1986. Standard specifications for highway materials and methods of sampling and testing. Ed. 14, 2 vols.

(2) American Society for Testing and Materials. 1993. Standard classification of soils for engineering purposes. ASTM Stand. D 2487.

(3) Austin, Morris E. 1965. Land resource regions and major land resource areas of the United States. U.S. Dep. Agric. Handb. 296.

(4) Calhoun County Chamber of Commerce. Calhoun County Diamond Jubilee. (Official historical program published October 9, 1983).

(5) Ruhe, Robert V. 1956. Geomorphic surfaces and the nature of soils. Soil Sci. 82: 441-445.

(6) United States Department of Agriculture. 1963. Soil survey of Calhoun County, South Carolina.

(7) United States Department of Agriculture. 1984 (rev.). Procedures for collecting soil samples and methods of analysis for soil survey. Soil Surv. Invest. Rep. 1.

(8) United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Dep. Agric. Handb. 210.

(9) United States Department of Agriculture, Soil Conservation Service. 1975. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. U.S. Dep. Agric. Handb. 436.

(10) United States Department of Agriculture, Soil Conservation Service. 1992. Keys to soil taxonomy. 5th ed. Soil Surv. Staff, Soil Manage. Support Serv. Tech. Monogr. 19.

(11) United States Department of Agriculture, Soil Conservation Service. 1993. Soil survey manual. Soil Surv. Staff, U.S. Dep. Agric. Handb. 18.

Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

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.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

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.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

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 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

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 stratifications, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediments.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

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.

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, or "chain," of soils on a landscape that formed in similar kinds of parent material but that 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.

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 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.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

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 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 are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

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. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:
Loose.—Noncoherent when dry or moist; does not hold together in a mass.
Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.
Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.
Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a “wire” when rolled between thumb and forefinger.
Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.
Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.
Soft.—When dry, breaks into powder or individual grains under very slight pressure.
Cemented.—Hard; little affected by moistening.

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.

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.

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.
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 periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:
Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.
Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.
Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.
Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum or periodically receive high rainfall, or both.
Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.
Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.
Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.
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.
Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on 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 fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay in the soil. The soil is not a source of gravel or sand for construction purposes.

Fast intake (in tables). The movement of water into the soil is rapid.

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.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry 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*.

Fine textured soil. Sandy clay, silty clay, or clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Forb. Any herbaceous plant that is not a grass or a sedge.

Fragipan. A loamy, brittle subsurface horizon that is low in porosity and content of organic matter and low or moderate in clay but is 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.

Galled areas. Areas where the soil is infertile because of past cultivation, the removal of soil material, or erosion.

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 and mottles.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

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 up to 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, up to 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 (geology). 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.

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.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric and the more decomposed sapric material.

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 at the surface of a mineral soil.

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 O, A, or E horizon. The B horizon is, in part, a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as accumulation of clay, sesquioxides, humus, or a combination of these; prismatic or blocky structure; redder or browner colors than those in the A horizon; or a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

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 A or B horizon. 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 horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated rock (unweathered bedrock) beneath the soil. The bedrock commonly underlies a C horizon but 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-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

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.

Infiltration. The downward entry of water into the immediate surface of soil or other material. This contrasts 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.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Leaching. The removal of soluble material from soil or other material by percolating water.

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 strength. The soil is not strong enough to support loads.

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.

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.

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. Mottling generally indicates poor aeration and impeded drainage. 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).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

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 between 6.6 and 7.3. (See Reaction, soil.)

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.

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.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

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 to move through the profile. Permeability is measured as the number of inches per hour that water moves through the saturated soil. Terms describing permeability are:

Very slow	less than 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, such as slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed 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.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it

is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

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 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.

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.

Reaction, soil. A measure of the 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	below 4.5
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
Mildly 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

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.

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

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.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

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 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 or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

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. 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.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

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.

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 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

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.

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 consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing 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).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from soil blowing and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Breaking up a compact subsoil by pulling a special chisel through the soil.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying 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."

Terrace. An embankment, or ridge, constructed on the contour or at a slight angle to the contour across sloping soils. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet.

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). An 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.

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.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. 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 ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Tables

Table 1.--Temperature and Precipitation (Part I)

(Recorded in the period 1951-80 at Orangeburg, South Carolina)

Month	Temperature														
	Means*			Extremes						Mean number of days				Degree days*	
										Maximum		Minimum			
	Daily max.	Daily min.	Monthly	Rec. high	Year	Day	Rec. low	Year	Day	90° and above	32° and below	32° and below	0° and below	Heating base 65°	Cooling base 65°
	°F	°F	°F	°F			°F								
January--	56.2	33.3	44.8	80**	1952	28	7**	1966	30	0	0	16	0	635	9
February-	59.2	35.1	47.2	83**	1962	28	9**	1973	12	0	0	13	0	505	7
March----	67.0	42.5	54.8	89	1954	26	6**	1980	3	0	0	5	0	337	21
April----	76.7	51.0	63.9	96**	1967	7	31**	1972	10	1	0	0	0	83	50
May------	83.4	59.1	71.3	101**	1953	27	35**	1963	2	6	0	0	0	19	215
June-----	88.1	66.2	77.2	105**	1954	28	50**	1966	1	13	0	0	0	0	366
July-----	90.7	69.8	80.3	107**	1952	25	56	1951	7	19	0	0	0	0	474
August---	90.4	69.3	79.8	106**	1954	6	53**	1979	18	19	0	0	0	0	459
September	83.5	64.0	74.7	102**	1954	7	40**	1967	30	8	0	0	0	0	291
October--	76.3	51.1	63.7	99**	1954	6	27**	1976	29	1	0	1	0	119	79
November-	67.5	41.6	54.6	91	1961	2	18**	1970	25	0	0	7	0	318	6
December-	58.7	34.8	46.8	82**	1967	20	6**	1962	13	0	0	15	0	564	0
Year-----	75.0	51.5	63.3	107	Jul. 1952	25	6	Dec. 1962	13	67	0	57	0	2,580	1,977

* From 1951-80 normals.
** Also on earlier dates.

Table 1.--Temperature and Precipitation (Part II)

(Recorded in the period 1951-80 at Orangeburg, South Carolina)

Month	Precipitation											
							Snow			Mean number of days		
	Mean*	Greatest monthly*	Year	Greatest daily	Year	Day	Mean	Maximum monthly	Year	.10 in. or more	.50 in. or more	1.00 in. or more
	In	In		In			In	In				
January--	4.00	7.36	1978	2.40	1969	20	0.2	2.3	1970	7	3	1
February-	3.99	7.46	1956	2.40	1973	2	1.0	17.2	1973	7	3	1
March----	4.58	9.58	1980	3.20	1980	13	.2	5.1	1960	7	3	1
April----	3.32	10.74	1961	3.06	1979	26	.0	.0	---	5	2	1
May------	4.22	9.80	1976	3.61	1964	3	.0	.0	---	6	3	1
June-----	4.56	9.10	1976	3.06	1961	27	.0	.0	---	7	3	1
July-----	5.46	12.23	1960	3.73	1960	29	.0	.0	---	8	4	2
August---	5.32	11.99	1970	5.95	1964	29	.0	.0	---	7	3	2
September	4.16	11.99	1979	6.61	1979	5	.0	.0	---	5	2	1
October--	2.42	9.87	1964	3.82	1964	16	.0	.0	---	4	1	1
November-	2.28	7.48	1957	2.95	1957	17	.0	.0	---	4	2	1
December-	3.28	7.18	1953	1.98	1953	14	.2	4.7	1958	6	2	1
Year-----	47.59	12.23	Jul. 1960	6.61	Sep. 1979	5	1.6	17.2	Feb. 1973	73	31	14

* From 1951-80 normals.

Table 2.--Probability of Precipitation

(Recorded in the period 1951-80 at Orangeburg, South Carolina. The values were determined from the incomplete gamma distribution)

Probability levels	Probability that the monthly precipitation will be equal to or less than the indicated precipitation amount											
	Monthly precipitation (inches)											
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
.05	1.37	1.20	1.63	0.53	0.97	1.61	1.72	1.59	1.08	0.09	0.46	1.22
.10	1.74	1.58	2.06	.82	1.36	2.04	2.24	2.10	1.47	.28	.66	1.52
.20	2.30	2.15	2.69	1.30	1.98	2.66	3.01	2.85	2.07	.62	1.00	1.96
.30	2.76	2.64	3.21	1.76	2.53	3.18	3.67	3.51	2.60	.97	1.30	2.33
.40	3.21	3.11	3.71	2.23	3.09	3.69	4.30	4.14	3.13	1.36	1.62	2.68
.50	3.68	3.61	4.22	2.74	3.67	4.20	4.96	4.80	3.68	1.80	1.95	3.04
.60	4.18	4.15	4.78	3.33	4.33	4.76	5.68	5.52	4.29	2.32	2.33	3.43
.70	4.77	4.79	5.43	4.05	5.12	5.42	6.53	6.38	5.02	2.97	2.78	3.88
.80	5.52	5.62	6.26	5.01	6.15	6.25	7.62	7.48	5.97	3.88	3.38	4.45
.90	6.69	6.91	7.54	6.57	7.79	7.55	9.31	9.21	7.47	5.39	4.34	5.34
.95	7.77	8.11	8.72	8.06	9.33	8.73	10.88	10.81	8.87	6.87	5.26	6.15

Table 3.--Number of Growing Degree Units for Selected Base Temperatures

(Recorded in the period 1951-80 at Orangeburg, South Carolina. M means monthly data; S means sum of monthly data)

Base temperature (degrees F)	Month												Annual
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
	Growing degree units												
40 (M)	214	239	472	723	976	1,122	1,256	1,241	1,047	744	448	249	8,731
40 (S)	214	453	925	1,648	2,624	3,746	5,002	6,243	7,290	8,034	8,482	8,731	
45 (M)	124	145	332	573	821	972	1,101	1,086	897	589	311	146	7,097
45 (S)	124	269	601	1,174	1,995	2,967	4,068	5,154	6,051	6,640	6,951	7,097	
50 (M)	65	77	210	425	666	822	946	931	747	437	195	78	5,599
50 (S)	65	142	352	777	1,443	2,265	3,211	4,142	4,889	5,326	5,521	5,599	
55 (M)	27	35	116	286	512	672	791	776	597	294	105	36	4,247
55 (S)	27	62	178	464	976	1,648	2,439	3,215	3,812	4,106	4,211	4,247	
60 (M)	9	12	52	167	360	522	636	621	448	172	45	13	3,057
60 (S)	9	21	73	240	600	1,122	1,758	2,379	2,827	2,999	3,044	3,057	
	Growing degree units for corn*												
50 (M)	140	158	295	464	648	767	865	851	713	483	293	165	5,843
50 (S)	140	298	594	1,058	1,706	2,473	3,338	4,189	4,902	5,385	5,678	5,843	

* The base temperature is 50 degree F, and the degree units are adjusted for temperatures below 50 and above 86.

Table 4.--Freeze Data

(Recorded in the period 1951-80 at Orangeburg, South Carolina. The symbol > means greater than; < means less than)

Temperature (degrees F)	Probability								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
	Probability of later date in spring (through July 31) than indicated*--Spring freeze dates (month and day)								
36	4/20	4/15	4/11	4/08	4/05	4/02	3/30	3/26	3/21
32	4/10	4/04	3/31	3/27	3/24	3/20	3/16	3/12	3/06
28	4/01	3/24	3/18	3/13	3/08	3/03	2/26	2/20	2/12
24	3/11	3/02	2/24	2/19	2/14	2/09	2/04	1/29	1/20
20	3/02	2/20	2/12	2/06	1/30	1/24	1/16	1/06	0/00
16	2/17	2/07	1/30	1/21	1/06	0/00	0/00	0/00	0/00
	Probability of earlier date in fall (beginning Aug. 1) than indicated*--Fall freeze dates (month and day)								
36	10/14	10/18	10/21	10/23	10/26	10/28	10/30	11/02	11/06
32	10/25	10/30	11/03	11/06	11/08	11/11	11/14	11/18	11/23
28	10/30	11/06	11/11	11/15	11/19	11/24	11/28	12/03	12/10
24	11/17	11/24	11/28	12/02	12/06	12/10	12/14	12/18	12/25
20	11/25	12/05	12/13	12/19	12/25	1/01	1/09	1/19	0/00
16	12/23	1/05	1/15	1/27	2/15	0/00	0/00	0/00	0/00
	Probability of longer than indicated freeze free period*--Freeze free period (days)								
36	221	215	210	206	203	199	195	191	184
32	251	244	238	234	229	225	220	215	207
28	280	272	266	260	256	251	246	239	231
24	322	313	306	300	294	289	283	276	266
20	>365	>365	351	333	323	315	307	299	288
16	>365	>365	>365	>365	>365	>365	>365	352	322

*** Probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date. The entry 0/00 indicates that the probability of occurrence of threshold temperature is less than indicated probability.**

Table 5.--Number of Degree Days for Selected Base Temperatures

(Recorded in the period 1951-80 at Orangeburg, South Carolina. The values are derived from the 1951-80 monthly normals)

Base temperature (degrees F)	Month												Annual
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
	Heating degree days												
Below 65	635	505	337	83	19	0	0	0	0	119	318	564	2,580
Below 60	491	375	217	20	0	0	0	0	0	47	188	419	1,757
Below 57	410	304	162	6	0	0	0	0	0	23	127	335	1,367
Below 55	360	260	128	0	0	0	0	0	0	13	95	283	1,139
Below 50	251	169	60	0	0	0	0	0	0	0	32	175	687
	Cooling degree days												
Above 55	44	41	122	270	505	666	784	769	591	283	83	29	4,187
Above 57	32	29	93	213	443	606	722	707	531	230	55	19	3,680
Above 60	20	17	56	137	355	516	629	614	441	162	26	10	2,983
Above 65	9	7	21	50	215	366	474	459	291	79	6	0	1,977
Above 70	0	0	7	9	110	225	319	304	155	25	0	0	1,154

Table 6.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AeB	Ailey sand, 0 to 6 percent slopes	7,774	3.1
AeC	Ailey sand, 6 to 10 percent slopes	6,395	2.5
AmD	Ailey-Vaucluse complex, 6 to 15 percent slopes	27,851	11.0
AmE	Ailey-Vaucluse complex, 15 to 25 percent slopes	6,683	2.7
ApB	Alpin sand, 0 to 6 percent slopes	12,781	5.1
ApC	Alpin sand, 6 to 10 percent slopes	2,294	0.9
ApD	Alpin sand, 10 to 15 percent slopes	390	0.2
Ce	Chenneby silt loam, occasionally flooded	1,899	0.8
Co	Congaree loam, occasionally flooded	6,279	2.5
Cx	Coxville sandy loam	2,998	1.2
DoA	Dothan loamy sand, 0 to 2 percent slopes	6,053	2.4
DoB	Dothan loamy sand, 2 to 6 percent slopes	9,638	3.8
EnA	Eunola loamy sand, 0 to 2 percent slopes	650	0.3
FaA	Faceville fine sandy loam, 0 to 2 percent slopes	3,048	1.2
FaB	Faceville fine sandy loam, 2 to 6 percent slopes	11,467	4.6
FaC	Faceville fine sandy loam, 6 to 10 percent slopes	3,431	1.4
FuB	Fuquay sand, 0 to 6 percent slopes	20,677	8.2
GoA	Goldsboro loamy sand, 0 to 2 percent slopes	4,679	1.9
GrA	Greenville fine sandy loam, 0 to 2 percent slopes	1,114	0.4
GrB	Greenville fine sandy loam, 2 to 6 percent slopes	2,925	1.2
GrC	Greenville fine sandy loam, 6 to 10 percent slopes	679	0.3
Gt	Grifton and Elloree soils, frequently flooded	2,126	0.8
Jo	Johnston fine sandy loam, frequently flooded	6,334	2.5
LuB	Lucy sand, 0 to 6 percent slopes	5,210	2.1
Ly	Lynchburg loamy sand	3,962	1.6
Mu	Mullers silty clay loam, frequently flooded	1,451	0.6
NoA	Noboco loamy sand, 0 to 2 percent slopes	2,298	0.9
NoB	Noboco loamy sand, 2 to 6 percent slopes	617	0.2
NrA	Norfolk loamy sand, 0 to 2 percent slopes	2,133	0.9
NrB	Norfolk loamy sand, 2 to 6 percent slopes	659	0.3
Og	Ogeechee loamy sand	3,029	1.2
OrA	Orangeburg loamy sand, 0 to 2 percent slopes	2,477	1.0
OrB	Orangeburg loamy sand, 2 to 6 percent slopes	14,849	5.9
OrC	Orangeburg loamy sand, 6 to 10 percent slopes	2,235	0.9
Pa	Paxville loam	392	0.2
PeB	Pelion coarse sand, 2 to 6 percent slopes	2,294	0.9
PeC	Pelion coarse sand, 6 to 10 percent slopes	240	0.1
PeD	Pelion coarse sand, 10 to 15 percent slopes	42	*
Ra	Rains sandy loam	6,390	2.5
SuA	Suffolk loamy sand, 0 to 2 percent slopes	935	0.4
SuB	Suffolk loamy sand, 2 to 6 percent slopes	924	0.4
To	Totness loamy coarse sand, frequently flooded	7,461	3.0
TrB	Troup coarse sand, 0 to 6 percent slopes	27,662	11.0
TrC	Troup coarse sand, 6 to 10 percent slopes	4,003	1.6
UdB	Udorthents, loamy, 0 to 4 percent slopes	66	*
VaB	Vaucluse loamy sand, 2 to 6 percent slopes	2,554	1.0
VaC	Vaucluse loamy sand, 6 to 10 percent slopes	2,601	1.0
VaD	Vaucluse loamy sand, 10 to 15 percent slopes	590	0.2
	Water	7,661	3.1
	Total	250,900	100.0

* Less than 0.1 percent.

Table 7.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
Ce	Chenneby silt loam, occasionally flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
Co	Congaree loam, occasionally flooded (where protected from flooding or not frequently flooded during the growing season)
DoA	Dothan loamy sand, 0 to 2 percent slopes
DoB	Dothan loamy sand, 2 to 6 percent slopes
EnA	Eunola loamy sand, 0 to 2 percent slopes
FaA	Faceville fine sandy loam, 0 to 2 percent slopes
FaB	Faceville fine sandy loam, 2 to 6 percent slopes
GoA	Goldsboro loamy sand, 0 to 2 percent slopes
GrA	Greenville fine sandy loam, 0 to 2 percent slopes
GrB	Greenville fine sandy loam, 2 to 6 percent slopes
Ly	Lynchburg loamy sand (where drained)
NoA	Noboco loamy sand, 0 to 2 percent slopes
NoB	Noboco loamy sand, 2 to 6 percent slopes
NrA	Norfolk loamy sand, 0 to 2 percent slopes
NrB	Norfolk loamy sand, 2 to 6 percent slopes
OrA	Orangeburg loamy sand, 0 to 2 percent slopes
OrB	Orangeburg loamy sand, 2 to 6 percent slopes
SuA	Suffolk loamy sand, 0 to 2 percent slopes
SuB	Suffolk loamy sand, 2 to 6 percent slopes

Table 8.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability	Corn	Soybeans	Tobacco	Cotton lint	Wheat	Bahiagrass	Improved bermuda-grass
		Bu	Bu	Lbs	Lbs	Bu	AUM*	AUM*
AeB--Ailey	IIIs	50	20	---	400	---	6.0	6.0
AeC--Ailey	IVs	45	18	---	350	---	5.0	5.0
AmD--Ailey-Vaucluse	VIs	---	---	---	---	---	5.0	5.0
AmE--Ailey-Vaucluse	VIIe	---	---	---	---	---	---	5.0
ApB--Alpin	IVs	---	---	1,500	---	---	7.0	8.0
ApC--Alpin	VIs	---	---	---	---	---	7.0	8.0
ApD--Alpin	VIIs	---	---	---	---	---	6.5	7.5
Ce--Chenneby	IIw	100	35	---	700	---	---	10.0
Co--Congaree	IIw	160	45	---	---	---	9.0	10.0
Cx--Coxville	IIIw	110	40	---	---	50	---	---
DoA--Dothan	I	120	40	2,800	900	---	9.0	---
DoB--Dothan	IIe	120	35	2,600	900	---	9.0	---
EnA--Eunola	IIw	100	35	---	---	---	---	---

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Tobacco	Cotton lint	Wheat	Bahiagrass	Improved bermuda-grass
		Bu	Bu	Lbs	Lbs	Bu	AUM*	AUM*
FaA---------- Faceville	I	115	45	---	1,000	60	7.0	10.0
FaB---------- Faceville	IIe	115	45	---	900	60	7.0	10.0
FaC---------- Faceville	IIIe	90	30	---	700	50	6.0	9.5
FuB---------- Fuquay	IIs	85	30	2,400	650	---	---	---
GoA---------- Goldsboro	IIw	125	50	3,000	700	60	---	---
GrA---------- Greenville	I	100	45	---	900	---	---	10.0
GrB---------- Greenville	IIe	95	35	---	900	---	---	10.0
GrC---------- Greenville	IIIe	85	25	---	700	---	---	10.0
Gt---------- Grifton and Elloree	VIIw	---	---	---	---	---	---	---
Jo---------- Johnston	VIIw	---	---	---	---	---	---	---
LuB---------- Lucy	IIs	80	33	---	650	---	8.5	8.0
Ly---------- Lynchburg	IIw	115	45	2,800	675	---	10.0	---
Mu---------- Mullers	VIw	---	---	---	---	---	---	---
NoA---------- Noboco	I	115	45	3,000	700	60	---	---

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Tobacco	Cotton lint	Wheat	Bahiagrass	Improved bermuda-grass
		Bu	Bu	Lbs	Lbs	Bu	AUM*	AUM*
NoB--Noboco	IIe	110	40	2,900	700	55	---	---
NrA--Norfolk	I	110	40	3,000	700	60	---	---
NrB--Norfolk	IIe	100	35	2,900	650	55	---	---
Og--Ogeechee	IIIw	100	45	---	---	---	9.0	---
OrA--Orangeburg	I	120	45	2,400	900	---	8.5	10.5
OrB--Orangeburg	IIe	120	45	2,400	900	---	8.5	10.5
OrC--Orangeburg	IIIe	95	35	2,200	800	---	8.0	10.0
Pa--Paxville	IIIw	110	40	---	---	---	12.0	---
PeB--Pelion	IIe	60	25	---	500	---	7.0	8.0
PeC--Pelion	IVe	50	20	---	400	---	7.0	7.0
PeD--Pelion	VIe	---	---	---	---	---	6.0	6.0
Ra--Rains	IIIw	110	40	2,300	450	---	10.0	---
SuA--Suffolk	I	115	30	2,600	---	40	---	---
SuB--Suffolk	IIe	110	30	2,200	---	40	---	---

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Tobacco	Cotton lint	Wheat	Bahiagrass	Improved bermuda-grass
		Bu	Bu	Lbs	Lbs	Bu	AUM*	AUM*
To--------- Totness	VIw	---	---	---	---	---	---	---
TrB--------- Troup	IIIs	60	25	---	500	---	7.2	7.5
TrC--------- Troup	IVs	55	22	---	450	---	7.0	7.3
UdB--------- Udorthents	VIe	---	---	---	---	---	---	---
VaB--------- Vaucluse	IIIs	65	25	---	500	---	7.0	8.0
VaC--------- Vaucluse	IIIe	60	20	---	400	---	6.0	7.0
VaD--------- Vaucluse	IVe	55	15	---	350	---	6.0	7.0

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 9.--Capability Classes and Subclasses

(Miscellaneous areas are excluded. Absence of an entry indicates no acreage)

Class	Total acreage	Major management concerns (Subclass)		
		Erosion (e)	Wetness (w)	Soil problem (s)
		Acres	Acres	Acres
I	18,058	---	---	---
II	86,729	43,373	17,469	25,887
III	59,745	8,946	12,809	37,990
IV	36,263	13,084	---	23,179
V	---	---	---	---
VI	30,679	3,048	9,741	17,890
VII	11,762	3,742	7,630	390
VIII	---	---	---	---

Table 10.--Woodland Management and Productivity

(Absence of an entry indicates that information was not available)

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
AeB, AeC-------- Ailey	Slight	Moderate	Moderate	Moderate	Slight	Longleaf pine------- 	60 	4 	Longleaf pine.
AmD**: Ailey----------	Slight	Moderate	Moderate	Moderate	Slight	Longleaf pine-------	60	4	Longleaf pine.
Vaucluse-------	Slight	Slight	Moderate	Moderate	Slight	Loblolly pine------- Longleaf pine-------	76 ---	7 ---	Loblolly pine.
AmE**: Ailey----------	Slight	Moderate	Moderate	Moderate	Slight	Longleaf pine-------	60	4	Longleaf pine.
Vaucluse-------	Moderate	Moderate	Moderate	Moderate	Slight	Loblolly pine------- Longleaf pine-------	76 ---	7 ---	Loblolly pine.
ApB, ApC, ApD--- Alpin	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine------- Longleaf pine------- Turkey oak---------- Post oak------------ Blackjack oak------- Bluejack oak--------	85 70 --- --- --- ---	8 6 --- --- --- ---	Loblolly pine, longleaf pine.
Ce-------------- Chenneby	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine------- Sweetgum------------ Water oak----------- Yellow-poplar------- American sycamore---	100 100 100 100 100	11 10 7 9 11	Loblolly pine, yellow-poplar, sweetgum, water oak.
Co-------------- Congaree	Slight	Moderate	Slight	Slight	Moderate	Sweetgum------------ Yellow-poplar------- Cherrybark oak------ Loblolly pine------- Eastern cottonwood-- American sycamore--- Black walnut-------- Scarlet oak--------- Willow oak---------- Green ash----------- American beech------	100 107 107 90 107 89 100 100 95 --- ---	10 8 12 9 10 7 --- 6 6 --- ---	Loblolly pine, sweetgum, yellow-poplar, black walnut, cherrybark oak.

See footnotes at end of table.

Table 10.--Woodland Management and Productivity—Continued

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
Cx Coxville	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine Longleaf pine Sweetgum Yellow-poplar Water oak Willow oak Water tupelo	91 77 84 86 75 88 ---	9 7 6 6 5 6 ---	Loblolly pine, sweetgum.
DoA, DoB Dothan	Slight	Slight	Slight	Slight	Moderate	Loblolly pine Longleaf pine Hickory Water oak	88 84 --- ---	9 8 --- ---	Loblolly pine, longleaf pine.
EnA Eunola	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine Sweetgum Yellow-poplar	95 95 95	10 8 7	Loblolly pine, sweetgum, yellow-poplar.
FaA, FaB, FaC Faceville	Slight	Slight	Slight	Slight	Moderate	Loblolly pine Longleaf pine	82 65	8 5	Loblolly pine.
FuB Fuquay	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine Longleaf pine	85 77	8 7	Loblolly pine, longleaf pine.
GoA Goldsboro	Slight	Slight	Slight	Slight	Moderate	Loblolly pine Longleaf pine Sweetgum White oak Water oak Yellow-poplar Red maple	90 73 --- --- --- --- ---	9 6 --- --- --- --- ---	Loblolly pine.
GrA, GrB, GrC Greenville	Slight	Slight	Slight	Slight	Moderate	Loblolly pine Longleaf pine	82 70	8 6	Loblolly pine.
Gt**: Grifton	Slight	Moderate	Severe	Slight	Severe	Yellow-poplar Sweetgum Baldcypress Willow oak Red maple American sycamore Water tupelo	108 --- --- --- --- --- ---	8 --- --- --- --- --- ---	Loblolly pine, sweetgum.

See footnotes at end of table.

Table 10.--Woodland Management and Productivity—Continued

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
Elloree--------	Slight	Severe	Severe	Severe	Severe	Loblolly pine-------	90	9	Loblolly pine, sweetgum, yellow-poplar.
						Sweetgum----------	---	---	
						Yellow-poplar-------	---	---	
						Red maple----------	---	---	
						Water oak----------	---	---	
Jo-------------- Johnston	Slight	Severe	Severe	Severe	Severe	Yellow-poplar-------	94	7	Green ash, loblolly pine, sweetgum, baldcypress.
						Loblolly pine-------	106	12	
						Sweetgum----------	94	8	
						Water oak----------	103	7	
						Water tupelo--------	---	---	
						Swamp tupelo--------	---	---	
						Baldcypress---------	---	---	
						Pond pine----------	---	---	
LuB------------- Lucy	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	80	8	Longleaf pine, loblolly pine.
						Longleaf pine-------	70	6	
Ly-------------- Lynchburg	Slight	Moderate	Slight	Slight	Severe	Loblolly pine-------	86	9	Loblolly pine, sweetgum.
						Longleaf pine-------	74	6	
						Yellow-poplar-------	92	6	
						Sweetgum----------	90	7	
						White oak----------	---	---	
						Blackgum-----------	---	---	
Mu-------------- Mullers	Slight	Severe	Severe	Severe	Severe	Sweetgum----------	95	8	Sweetgum, yellow-poplar.
						Water tupelo--------	---	---	
						Swamp chestnut oak--	---	---	
						Red maple----------	---	---	
NoA, NoB-------- Noboco	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	90	9	Loblolly pine, sweetgum.
						Longleaf pine-------	80	7	
						Sweetgum----------	---	---	
NrA, NrB-------- Norfolk	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	84	8	Loblolly pine.
						Longleaf pine-------	77	7	
						White oak----------	---	---	
						Yellow-poplar-------	---	---	
						Blackgum-----------	---	---	
						Hickory------------	---	---	

See footnotes at end of table.

Table 10.--Woodland Management and Productivity—Continued

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
Og---------- Ogeechee	Slight	Severe	Moderate	Slight	Moderate	Loblolly pine------- Pond pine-----------	90 70	9 4	Loblolly pine, sweetgum.
OrA, OrB, OrC--- Orangeburg	Slight	Slight	Slight	Slight	Moderate	Loblolly pine------- Longleaf pine-------	80 77	8 7	Slash pine, loblolly pine.
Pa---------- Paxville	Slight	Severe	Severe	Severe	Severe	Loblolly pine------- Pond pine----------- Water oak----------- Water tupelo-------- Baldcypress---------	96 77 90 --- ---	10 4 6 --- ---	Loblolly pine, water tupelo.
PeB, PeC, PeD--- Pelion	Slight	Moderate	Slight	Moderate	Moderate	Loblolly pine------- Longleaf pine-------	80 ---	8 ---	Loblolly pine.
Ra---------- Rains	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine------- Sweetgum-----------	94 90	10 7	Loblolly pine, sweetgum.
SuA, SuB-------- Suffolk	Slight	Slight	Slight	Slight	Moderate	Loblolly pine------- Southern red oak----	82 70	8 4	Loblolly pine.
To---------- Totness	Slight	Severe	Severe	Moderate	Severe	Sweetgum----------- Loblolly pine------- Water tupelo-------- Water oak----------- Yellow-poplar-------	90 90 --- --- ---	7 9 --- --- ---	Sweetgum, loblolly pine, yellow-poplar.
TrB, TrC-------- Troup	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine------- Longleaf pine-------	80 70	8 6	Loblolly pine, longleaf pine.
UdB---------- Udorthents	Moderate	Moderate	Moderate	Slight	--------	Loblolly pine-------	50	5	Loblolly pine, Virginia pine.
VaB, VaC, VaD--- Vaucluse	Slight	Slight	Moderate	Moderate	Slight	Loblolly pine------- Longleaf pine-------	76 ---	7 ---	Loblolly pine.

* Productivity class is the yield in cubic meters per hectare per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.

Table 11.--Recreational Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe")

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AeB Ailey	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
AeC Ailey	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty.
AmD*: Ailey	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: slope, droughty.
Vaucluse	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: droughty, slope.
AmE*: Ailey	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: slope.
Vaucluse	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
ApB Alpin	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
ApC, ApD Alpin	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
Ce Chenneby	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, flooding.
Co Congaree	Severe: flooding.	Slight	Moderate: slope, flooding.	Slight	Moderate: flooding.
Cx Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
DoA Dothan	Slight	Slight	Slight	Slight	Moderate: droughty.
DoB Dothan	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
EnA Eunola	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FaA Faceville	Slight	Slight	Slight	Slight	Slight.

See footnote at end of table.

Table 11.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
FaB---- Faceville	Slight	Slight	Moderate: slope.	Slight	Slight.
FaC---- Faceville	Slight	Slight	Severe: slope.	Slight	Slight.
FuB---- Fuquay	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
GoA---- Goldsboro	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Slight	Slight.
GrA---- Greenville	Slight	Slight	Slight	Slight	Slight.
GrB---- Greenville	Slight	Slight	Moderate: slope.	Slight	Slight.
GrC---- Greenville	Slight	Slight	Severe: slope.	Slight	Slight.
Gt*:					
Grifton----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Elloree----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Jo---- Johnston	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
LuB---- Lucy	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
Ly---- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Mu---- Mullers	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
NoA---- Noboco	Slight	Slight	Slight	Slight	Slight.
NoB---- Noboco	Slight	Slight	Moderate: slope.	Slight	Slight.
NrA---- Norfolk	Slight	Slight	Slight	Slight	Moderate: droughty.
NrB---- Norfolk	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
Og---- Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

See footnote at end of table.

Table 11.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
OrA---------- Orangeburg	Slight----------	Slight----------	Slight----------	Slight----------	Slight.
OrB---------- Orangeburg	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
OrC---------- Orangeburg	Slight----------	Slight----------	Severe: slope.	Slight----------	Slight.
Pa---------- Paxville	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
PeB---------- Pelion	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
PeC, PeD---------- Pelion	Severe: wetness.	Moderate: slope, wetness.	Severe: slope, wetness.	Moderate: wetness.	Moderate: wetness, droughty.
Ra---------- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
SuA---------- Suffolk	Slight----------	Slight----------	Slight----------	Slight----------	Moderate: droughty.
SuB---------- Suffolk	Slight----------	Slight----------	Moderate: slope.	Slight----------	Moderate: droughty.
To---------- Totness	Severe: flooding, small stones, wetness	Severe: wetness, small stones .	Severe: small stones, wetness.	Severe: wetness.	Severe: small stones, wetness, droughty.
TrB---------- Troup	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
TrC---------- Troup	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty.
UdB---------- Udorthents	Variable--------	Variable--------	Variable--------	Variable--------	Variable.
VaB---------- Vaucluse	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope.	Slight----------	Moderate: droughty.
VaC, VaD---------- Vaucluse	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight----------	Moderate: droughty, slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 12.--Wildlife Habitat

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Potential for habitat elements							Potential as habitat for—		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AeB---- Ailey	Poor	Fair	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
AeC---- Ailey	Poor	Poor	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
AmD*:										
Ailey----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Vaucluse----	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
AmE*:										
Ailey----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Vaucluse----	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
ApB, ApC, ApD---- Alpin	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Ce---- Chenneby	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Co---- Congaree	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Cx---- Coxville	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
DoA, DoB---- Dothan	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
EnA---- Eunola	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

See footnote at end of table.

Table 12.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for—		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
FaA---------- Faceville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FaB---------- Faceville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FaC---------- Faceville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FuB---------- Fuquay	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
GoA---------- Goldsboro	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
GrA, GrB---------- Greenville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GrC---------- Greenville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Gt*:										
Grifton----------	Very poor.	Very poor.	Poor	Fair	Poor	Good	Fair	Very poor.	Fair	Fair.
Elloree----------	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
Jo---------- Johnston	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
LuB---------- Lucy	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
Ly---------- Lynchburg	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Mu---------- Mullers	Poor	Fair	Fair	Good	Good	Good	Good	Poor	Fair	Good.
NoA---------- Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

See footnote at end of table.

Table 12.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for—		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
NoB---------- Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NrA, NrB---------- Norfolk	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Og---------- Ogeechee	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
OrA, OrB---------- Orangeburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OrC---------- Orangeburg	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Pa---------- Paxville	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
PeB---------- Pelion	Fair	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
PeC, PeD---------- Pelion	Fair	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Ra---------- Rains	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
SuA, SuB---------- Suffolk	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
To---------- Totness	Very poor.	Poor	Fair	Fair	Fair	Good	Good	Poor	Fair	Good.
TrB, TrC---------- Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
UdB---------- Udorthents	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
VaB, VaC---------- Vaucluse	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
VaD---------- Vaucluse	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 13.--Building Site Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AeB---- Ailey	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.
AeC---- Ailey	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
AmD*:						
Ailey----	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope, droughty.
Vaucluse----	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
AmE*:						
Ailey----	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Vaucluse----	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
ApB---- Alpin	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Severe: droughty.
ApC, ApD---- Alpin	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
Ce---- Chenneby	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding.	Moderate: wetness, flooding.
Co---- Congaree	Moderate: wetness, flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.

See footnote at end of table.

Table 13.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Cx---------- Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
DoA, DoB---------- Dothan	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
EnA---------- Eunola	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FaA, FaB---------- Faceville	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
FaC---------- Faceville	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
FuB---------- Fuquay	Slight---------	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
GoA---------- Goldsboro	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Slight.
GrA, GrB---------- Greenville	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
GrC---------- Greenville	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
Gt*: Grifton----------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Elloree----------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Jo---------- Johnston	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding, flooding.	Severe: ponding, flooding.

See footnote at end of table.

Table 13.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
LuB---------- Lucy	Moderate: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty, too sandy.
Ly---------- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Mu---------- Mullers	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
NoA---------- Noboco	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Slight.
NoB---------- Noboco	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Slight.
NrA---------- Norfolk	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
NrB---------- Norfolk	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Moderate: droughty.
Og---------- Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
OrA, OrB---------- Orangeburg	Slight---------	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
OrC---------- Orangeburg	Slight---------	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
Pa---------- Paxville	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.
PeB---------- Pelion	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.

See footnote at end of table.

Table 13.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
PeC, PeD---------- Pelion	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, slope.	Moderate: wetness, slope.	Moderate: wetness, droughty.
Ra---------- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
SuA---------- Suffolk	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
SuB---------- Suffolk	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
To---------- Totness	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: small stones, wetness, droughty.
TrB---------- Troup	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
TrC---------- Troup	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
UdB---------- Udorthents	Variable-------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell.	Variable.
VaB---------- Vaucluse	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
VaC, VaD---------- Vaucluse	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 14.--Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AeB, AeC---------- Ailey	Severe: percs slowly.	Severe: seepage.	Slight----------	Slight----------	Good.
AmD*:					
Ailey----------	Severe: percs slowly.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Vaucluse----------	Severe: percs slowly.	Severe: seepage, slope.	Severe: seepage.	Moderate: slope.	Fair: too clayey, slope.
AmE*:					
Ailey----------	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: slope.	Severe: slope.	Poor: slope.
Vaucluse----------	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: slope.
ApB---------- Alpin	Slight----------	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
ApC, ApD---------- Alpin	Moderate: slope.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Ce---------- Chenneby	Severe: flooding, wetness.	Severe: seepage, flooding, wetness	Severe: flooding, seepage, wetness.	Severe: flooding, wetness	Poor: hard to pack, wetness.
Co---------- Congaree	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
Cx---------- Coxville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
DoA---------- Dothan	Severe: wetness, percs slowly.	Moderate: seepage.	Moderate: wetness.	Slight----------	Good.
DoB---------- Dothan	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Slight----------	Good.

See footnote at end of table.

Table 14.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
EnA---------- Eunola	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Fair: too clayey, wetness, thin layer.
FaA---------- Faceville	Slight----------	Moderate: seepage.	Moderate: too clayey.	Good----------	Fair: too clayey.
FaB, FaC---------- Faceville	Slight----------	Moderate: seepage, slope.	Moderate: too clayey.	Good----------	Fair: too clayey.
FuB---------- Fuquay	Severe: percs slowly, poor filter.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
GoA---------- Goldsboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
GrA---------- Greenville	Moderate: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight----------	Fair: too clayey.
GrB, GrC---------- Greenville	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
Gt*:					
Grifton----------	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: wetness.
Elloree----------	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: wetness.
Jo---------- Johnston	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: ponding.
LuB---------- Lucy	Slight----------	Severe: seepage.	Slight----------	Severe: seepage.	Fair: too clayey.
Ly---------- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.

See footnote at end of table.

Table 14.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Mu Mullers	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
NoA, NoB Noboco	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
NrA, NrB Norfolk	Moderate: wetness, percs slowly.	Moderate: seepage, wetness	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
Og Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
OrA Orangeburg	Slight	Moderate: seepage.	Slight	Slight	Good.
OrB, OrC Orangeburg	Slight	Moderate: seepage, slope.	Slight	Slight	Good.
Pa Paxville	Severe: ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding.
PeB Pelion	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
PeC, PeD Pelion	Severe: wetness, percs slowly.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ra Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
SuA, SuB Suffolk	Moderate: percs slowly.	Severe: seepage.	Severe: seepage.	Slight	Fair: too clayey, thin layer.
To Totness	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, small stones.

See footnote at end of table.

Table 14.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
TrB, TrC---------- Troup	Slight----------	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
UdB---------- Udorthents	Variable---------	Variable---------	Variable---------	Slight----------	Variable.
VaB---------- Vaucluse	Severe: percs slowly.	Severe: seepage.	Severe: seepage.	Slight----------	Fair: too clayey.
VaC, VaD---------- Vaucluse	Severe: percs slowly.	Severe: seepage, slope.	Severe: seepage.	Moderate: slope.	Fair: too clayey, slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 15.--Construction Materials

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
AeB, AeC Ailey	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
AmD*: Ailey	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
Vaucluse	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.
AmE*: Ailey	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, too sandy.
Vaucluse	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.
ApB, ApC, ApD Alpin	Good	Probable	Improbable: too sandy.	Poor: too sandy.
Ce Chenneby	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Co Congaree	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Cx Coxville	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
DoA, DoB Dothan	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.
EnA Eunola	Fair: wetness.	Probable	Improbable: too sandy.	Fair: too clayey, small stones, thin layer.
FaA, FaB, FaC Faceville	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
FuB Fuquay	Good	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy.
GoA Goldsboro	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
GrA, GrB, GrC Greenville	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

Table 15.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Gt*:				
Grifton	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Elloree	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
Jo Johnston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
LuB Lucy	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
Ly Lynchburg	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Mu Mullers	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
NoA, NoB Noboco	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
NrA, NrB Norfolk	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Og Ogeechee	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
OrA, OrB, OrC Orangeburg	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Pa Paxville	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
PeB Pelion	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, thin layer.
PeC, PeD Pelion	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, thin layer, slope.
Ra Rains	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
SuA, SuB Suffolk	Good	Probable	Improbable: too sandy.	Fair: too clayey, small stones.
To Totness	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, small stones, wetness.

See footnote at end of table.

Table 15.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
TrB, TrC---------- Troup	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.
UdB---------- Udorthents	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Variable.
VaB, VaC, VaD--------- Vaucluse	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 16.--Water Management

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
AeB, AeC---------- Ailey	Moderate: seepage, slope.	Slight---------	Severe: no water.	Deep to water	Droughty, percs slowly, slope.	Droughty, rooting depth.
AmD*, AmE*: Ailey----------	Severe: slope.	Slight---------	Severe: no water.	Deep to water	Droughty, percs slowly, slope.	Slope, droughty, rooting depth.
Vaucluse---------	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty, rooting depth.
ApB---------- Alpin	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Droughty, fast intake.	Droughty.
ApC, ApD---------- Alpin	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty.
Ce---------- Chenneby	Moderate: seepage.	Severe: piping, hard to pack, wetness.	Moderate: slow refill.	Flooding-------	Wetness, erodes easily, flooding.	Wetness, erodes easily.
Co---------- Congaree	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Flooding-------	Wetness--------	Erodes easily.
Cx---------- Coxville	Slight---------	Severe: wetness.	Severe: slow refill.	Favorable------	Wetness, soil blowing.	Wetness.
DoA---------- Dothan	Moderate: seepage.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, droughty.	Droughty.

See footnote at end of table.

Table 16.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
DoB---------- Dothan	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, slope, droughty.	Droughty.
EnA---------- Eunola	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable------	Wetness, fast intake.	Favorable.
FaA---------- Faceville	Moderate: seepage.	Slight---------	Severe: no water.	Deep to water	Favorable------	Erodes easily.
FaB, FaC---------- Faceville	Moderate: seepage, slope.	Slight---------	Severe: no water.	Deep to water	Slope----------	Erodes easily.
FuB---------- Fuquay	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty.
GoA---------- Goldsboro	Moderate: seepage.	Moderate: piping, wetness.	Moderate: deep to water, slow refill.	Favorable------	Wetness, droughty, fast intake.	Droughty, rooting depth.
GrA---------- Greenville	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable------	Favorable.
GrB, GrC---------- Greenville	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Favorable.
Gt*:						
Grifton----------	Severe: seepage.	Severe: wetness.	Severe: cutbanks cave.	Flooding-------	Wetness, soil blowing.	Wetness.
Elloree----------	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding-------	Wetness, droughty, fast intake.	Wetness, droughty.
Jo---------- Johnston	Severe: seepage.	Severe: piping, ponding.	Severe: cutbanks cave.	Ponding, flooding.	Ponding, droughty, flooding.	Wetness, droughty.

See footnote at end of table.

Table 16.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
LuB---------- Lucy	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Droughty, fast intake.	Droughty.
Ly---------- Lynchburg	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable------	Wetness, fast intake, soil blowing.	Wetness.
Mu---------- Mullers	Slight---------	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, percs slowly, flooding.	Wetness, erodes easily, percs slowly.
NoA---------- Noboco	Moderate: seepage.	Severe: piping.	Severe: cutbanks cave.	Favorable------	Wetness, fast intake.	Rooting depth.
NoB---------- Noboco	Moderate: seepage, slope.	Severe: piping.	Severe: cutbanks cave.	Slope----------	Slope, wetness, fast intake.	Rooting depth.
NrA---------- Norfolk	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Fast intake, soil blowing.	Favorable.
NrB---------- Norfolk	Moderate: seepage, slope.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Slope, fast intake.	Favorable.
Og---------- Ogeechee	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Favorable------	Wetness, fast intake.	Wetness.
OrA---------- Orangeburg	Moderate: seepage.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake----	Favorable.
OrB, OrC---------- Orangeburg	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, slope.	Favorable.
Pa---------- Paxville	Severe: seepage.	Severe: piping, ponding.	Severe: cutbanks cave.	Ponding--------	Ponding--------	Wetness.
PeB---------- Pelion	Moderate: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Percs slowly, slope.	Wetness, droughty, fast intake.	Wetness, droughty.

See footnote at end of table.

Table 16.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
PeB---------- Pelion	Moderate: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Percs slowly, slope.	Wetness, droughty, fast intake.	Wetness, droughty.
PeC, PeD---------- Pelion	Severe: slope.	Severe: seepage, piping.	Severe: no water.	Percs slowly, slope.	Wetness, droughty, fast intake.	Wetness, slope, droughty.
Ra---------- Rains	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable------	Wetness--------	Wetness.
SuA---------- Suffolk	Severe: seepage.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Droughty, soil blowing.	Droughty.
SuB---------- Suffolk	Severe: seepage.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Slope, droughty, soil blowing.	Droughty.
To---------- Totness	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty, fast intake.	Wetness, droughty.
TrB---------- Troup	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake.	Droughty.
TrC---------- Troup	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Droughty.
UdB---------- Udorthents	Variable-------	Slight---------	Severe: no water.	Deep to water	Variable-------	Variable.
VaB---------- Vaucluse	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty, rooting depth.
VaC, VaD---------- Vaucluse	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty, rooting depth.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 17.--Engineering Index Properties

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
AeB, AeC---------- Ailey	0-29	Sand----------	SP-SM	A-2, A-3	85-100	75-95	50-75	5-12	---	NP
	29-40	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	60-90	30-40	20-40	3-16
	40-52	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	55-90	20-50	20-40	3-16
	52-68	Coarse sandy loam, sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	85-100	75-100	50-85	15-40	<40	NP-14
AmD*, AmE*:										
Ailey----------	0-29	Sand----------	SP-SM	A-2, A-3	85-100	75-95	50-75	5-12	---	NP
	29-40	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	60-90	30-40	20-40	3-16
	40-52	Sandy clay loam	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	55-90	20-50	20-40	3-16
	52-68	Coarse sandy loam, sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	85-100	75-100	50-85	15-40	<40	NP-14
Vaucluse--------	0-19	Loamy sand-------	SM, SP-SM	A-2, A-3	90-100	90-100	50-75	8-30	---	NP
	19-28	Sandy clay loam, sandy loam.	SC, SC-SM	A-2, A-4, A-6	90-100	90-100	51-75	25-50	20-40	5-18
	28-48	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-2, A-4, A-6	95-100	92-100	51-80	20-50	<40	NP-20
	48-62	Sandy loam, sandy clay loam, loamy sand.	SM, SC, SC-SM	A-2, A-4, A-6	95-100	95-100	51-90	15-50	<30	NP-12
ApB, ApC, ApD---- Alpin	0-3	Sand----------	SP-SM, SM	A-3, A-2-4	95-100	90-100	60-100	5-20	---	NP
	3-62	Sand----------	SP-SM, SM	A-3, A-2-4	95-100	90-100	60-100	5-20	---	NP
	62-82	Sand----------	SP-SM, SM	A-2-4	95-100	90-100	60-100	11-20	---	NP
Ce---------- Chenneby	0-3	Silt loam--------	CL, ML, CL-ML	A-4, A-6	100	95-100	90-100	60-90	20-35	3-15
	3-62	Silt loam, silty clay loam.	CL, ML, MH, CH	A-4, A-6, A-7	100	95-100	90-100	75-95	30-55	8-20

See footnote at end of table.

Table 17.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
Co---------- Congaree	0-9	Loam----------	CL-ML, ML, CL	A-4	95-100	95-100	70-100	51-90	20-35	3-10
	9-80	Sandy clay loam, fine sandy loam, loam.	SC, ML, CL, SM	A-4, A-6, A-7	95-100	95-100	70-100	40-90	25-50	3-22
Cx---------- Coxville	0-6	Sandy loam-------	SM, ML, CL-ML, CL	A-4, A-6, A-7	100	100	85-97	46-75	20-46	3-15
	6-62	Sandy clay loam, sandy clay, clay.	CL, CH	A-6, A-7	100	100	80-98	45-85	28-55	10-35
DoA, DoB--------- Dothan	0-13	Loamy sand-------	SM	A-2	95-100	92-100	60-80	13-30	---	NP
	13-40	Sandy clay loam, sandy loam.	SC-SM, SC, SM	A-2, A-4, A-6	95-100	92-100	60-90	23-49	<40	NP-16
	40-62	Sandy clay loam, sandy clay.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	95-100	92-100	70-95	30-53	25-45	4-23
EnA---------- Eunola	0-5	Loamy sand-------	SM, SP-SM	A-2, A-4, A-2-4	100	98-100	50-80	10-38	---	NP
	5-41	Sandy clay loam, clay loam, fine sandy loam.	SM, SC, SC-SM, CL	A-4, A-2, A-6	100	90-100	75-95	30-60	<36	NP-15
	41-60	Sand, loamy sand, fine sand.	SM, SP-SM	A-2, A-3	100	98-100	50-75	5-30	---	NP
FaA, FaB, FaC---- Faceville	0-8	Fine sandy loam	SM, SC-SM	A-2, A-4	90-100	85-100	72-97	17-38	<25	NP-7
	8-61	Sandy clay, clay	CL, SC, CH, ML	A-6, A-7	98-100	95-100	75-99	45-72	25-52	11-25
FuB---------- Fuquay	0-23	Sand----------	SP-SM, SM	A-1, A-2, A-3	95-100	90-100	45-80	5-20	---	NP
	23-41	Sandy clay loam	SC, SC-SM	A-4, A-6	85-100	85-100	70-90	23-45	<45	4-18
	41-63	Sandy clay loam, sandy clay.	SC, SC-SM, SM	A-2, A-4, A-6, A-7-6	95-100	90-100	58-90	28-49	25-45	4-18
GoA---------- Goldsboro	0-12	Loamy sand-------	SM	A-2	95-100	95-100	50-95	13-30	<20	NP
	12-62	Sandy clay loam, fine sandy loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	98-100	95-100	60-100	25-55	16-37	4-18

See footnote at end of table.

Table 17.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
GrA, GrB, GrC---- Greenville	0-7	Fine sandy loam	SM, SC, SC-SM, CL-ML	A-2, A-4	95-100	90-100	65-85	25-55	10-25	NP-10
	7-68	Sandy clay, clay	CL, SC, ML	A-6, A-7, A-4	98-100	95-100	80-99	40-80	28-50	7-25
Gt*:										
Grifton---------	0-9	Fine sandy loam	SM	A-2, A-4	100	95-100	60-100	20-45	<30	NP-7
	9-29	Sandy clay loam	SC, CL	A-4, A-6, A-2-4, A-2-6	98-100	95-100	60-100	31-60	20-35	8-15
	29-42	Sandy loam-------	SM, SP-SM	A-2, A-4	100	95-100	60-100	12-45	<30	NP-7
	42-64	Variable---------	---	---	---	---	---	---	---	---
Elloree---------	0-9	Loamy sand-------	SM	A-2	100	98-100	70-100	15-35	<25	NP-4
	9-29	Sand, fine sand, loamy sand.	SP-SM, SM	A-2, A-3	100	98-100	65-100	9-27	---	NP
	29-48	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC-SM, SC	A-2	100	98-100	60-100	15-35	<30	NP-12
	48-62	Loamy sand, sandy loam, fine sandy loam.	SM, SC-SM, SC	A-2, A-4, A-6	100	98-100	60-100	15-45	<40	NP-18
Jo----------	0-34	Sandy loam-------	ML, SM	A-2, A-4	100	100	60-100	18-65	<35	NP-10
Johnston	34-65	Stratified loamy fine sand to sand.	SM, SP-SM	A-2, A-3	100	100	50-100	5-30	---	NP
LuB----------	0-26	Sand----------	SM, SP-SM	A-2	95-100	90-100	50-75	10-30	---	NP
Lucy	26-63	Sandy clay loam	SC, SC-SM	A-4, A-6	97-100	95-100	55-95	20-50	13-30	4-15
Ly----------	0-7	Loamy sand-------	SM, SP-SM	A-2, A-4	92-100	90-100	60-100	12-40	<25	NP-4
Lynchburg	7-65	Sandy clay loam, sandy loam.	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6	92-100	90-100	70-100	25-67	15-40	4-18

See footnote at end of table.

Table 17.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
Mu---------- Mullers	0-2	Silty clay loam	ML, CL, MH, CH	A-6, A-7	100	100	95-100	75-98	28-55	10-25
	2-16	Silt loam, silty clay loam.	ML, CL, MH	A-4, A-6, A-7	100	100	90-100	70-98	30-65	8-25
	16-64	Silty clay loam, silty clay, clay	CL, CH, ML, MH	A-7	100	100	95-100	80-98	40-75	10-40
NoA, NoB---------- Noboco	0-17	Loamy sand-------	SM	A-2	95-100	92-100	50-95	13-30	<20	NP
	17-63	Sandy clay loam, sandy clay.	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6	95-100	95-100	70-96	30-63	20-38	4-15
NrA, NrB---------- Norfolk	0-11	Loamy sand-------	SM	A-2	95-100	92-100	50-95	13-30	<20	NP
	11-62	Sandy clay loam	SC, SC-SM	A-2, A-4, A-6	95-100	91-100	70-96	30-49	20-38	4-15
Og---------- Ogeechee	0-16	Loamy sand-------	SM, SP-SM	A-2, A-1-b	100	95-100	48-70	10-25	---	NP
	16-40	Sandy clay loam	SC	A-6	100	95-100	65-90	40-49	27-40	12-23
	40-64	Sandy clay loam, sandy loam.	SC	A-6, A-2	100	90-100	50-65	25-45	30-40	15-25
OrA, OrB, OrC---- Orangeburg	0-16	Loamy sand-------	SM	A-2	98-100	95-100	60-87	14-28	---	NP
	16-58	Sandy clay loam	SC, CL, SM, SC-SM	A-6, A-4	98-100	95-100	71-96	38-58	22-40	3-19
	58-75	Sandy clay loam	SC	A-6, A-4, A-7	98-100	95-100	70-97	40-49	24-46	8-21
Pa---------- Paxville	0-17	Loam----------	SM, ML, SC-SM	A-2, A-4	100	100	80-98	30-60	<35	NP-7
	17-46	Sandy clay loam, clay loam.	CL-ML, CL, SC-SM, SC	A-2, A-4, A-6	100	98-100	60-98	30-60	21-40	5-15
	46-61	Sandy loam, coarse sandy loam.	SM, SP-SM	A-2, A-3	100	98-100	60-98	5-35	<30	NP-4

See footnote at end of table.

Table 17.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
PeB, PeC, PeD----Pelion	0-9	Loamy sand-------	SP, SM, SP-SM	A-2, A-3	98-100	95-100	45-85	5-30	10-25	NP
	9-25	Sandy clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	95-100	92-100	50-90	25-55	20-40	5-18
	25-38	Sandy clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	98-100	92-100	50-90	25-60	20-47	5-26
	38-68	Sandy clay loam, sandy loam.	SM, SC, SC-SM	A-2, A-4, A-6	98-100	92-100	50-90	18-60	<42	NP-22
Ra----------Rains	0-14	Sandy loam-------	SM, ML	A-2, A-4	100	95-100	50-85	25-56	<35	NP-10
	14-39	Fine sandy loam, sandy clay loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	100	95-100	55-98	30-70	18-40	4-20
	39-62	Sandy clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6, A-7	100	98-100	60-98	36-72	18-45	4-28
SuA, SuB---------Suffolk	0-12	Loamy sand-------	SM, SC-SM	A-1, A-2, A-4	95-100	90-100	40-85	15-40	<18	NP-6
	12-33	Sandy loam, sandy clay loam.	SC, CL	A-2, A-6	95-100	90-100	50-95	25-75	20-40	10-25
	33-66	Loamy fine sand, loamy sand.	SP, SM, SC-SM	A-1, A-2, A-3, A-4	75-100	60-100	30-80	3-50	<18	NP-6
To----------Totness	0-7	Loamy coarse sand	SM, SP-SM	A-2, A-3, A-1-b	95-100	40-98	30-90	5-25	---	NP
	7-48	Sand, loamy sand, coarse sand.	SP-SM, SM	A-2, A-3, A-1-b	95-100	25-95	20-90	5-20	---	NP
	48-74	Mucky loam, silt loam, coarse sandy loam.	SM, SC-SM, ML, CL-ML	A-2, A-4	98-100	75-98	60-90	25-85	<30	NP-10
	74-80	Sand, loamy sand, sandy loam.	SM	A-1, A-2-4, A-4	95-100	45-95	35-85	20-45	---	NP
TrB, TrC---------Troup	0-58	Coarse sand------	SM, SP-SM	A-2	95-100	90-100	50-75	10-30	---	NP
	58-80	Sandy clay loam, sandy loam, fine sandy loam.	SC, SC-SM, CL-ML, CL	A-4, A-2, A-6	95-100	90-100	60-90	24-55	19-40	4-20
UdB----------Udorthents	0-60	Sandy clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6, A-7	95-100	90-100	70-98	30-90	20-45	4-25

See footnote at end of table.

Table 17.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
VaB, VaC, VaD---- Vaucluse	0-19	Loamy sand-------	SM, SP-SM	A-2, A-3	90-100	90-100	50-75	8-30	---	NP
	19-28	Sandy clay loam, sandy loam.	SC, SC-SM	A-2, A-4, A-6	90-100	90-100	51-75	25-50	20-40	5-18
	28-48	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-2, A-4, A-6	95-100	92-100	51-80	20-50	<40	NP-20
	48-62	Sandy loam, sandy clay loam, coarse sandy loam.	SM, SC, SC-SM	A-2, A-4, A-6	95-100	95-100	51-90	15-50	<30	NP-12

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 18.--Physical and Chemical Properties of the Soils

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
AeB, AeC	0-29	3-8	1.40-1.55	6.0-20	0.03-0.05	4.5-6.5	Low	0.10	4	1	<1
Ailey	29-40	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low	0.24			
	40-52	18-35	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low	0.24			
	52-68	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low	0.15			
AmD*, AmE*:											
Ailey	0-29	3-8	1.40-1.55	6.0-20	0.03-0.05	4.5-6.5	Low	0.10	4	1	<1
	29-40	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low	0.24			
	40-52	18-35	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low	0.24			
	52-68	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low	0.15			
Vaucluse	0-19	2-10	1.30-1.60	6.0-20	0.04-0.08	4.5-6.0	Low	0.15	3	2	<1
	19-28	18-35	1.35-1.75	0.6-2.0	0.10-0.15	3.6-5.5	Low	0.24			
	28-48	18-45	1.75-1.95	0.06-0.6	0.04-0.08	3.6-5.5	Low	0.24			
	48-62	5-30	1.55-1.90	2.0-6.0	0.04-0.08	3.6-5.5	Low	0.17			
ApB, ApC, ApD	0-3	1-12	1.35-1.55	2.0-6.0	0.05-0.10	4.5-6.5	Low	0.10	5	1	0-2
Alpin	3-62	1-7	1.40-1.55	6.0-20	0.03-0.09	4.5-6.5	Low	0.10			
	62-82	5-8	1.45-1.65	2.0-6.0	0.06-0.09	4.5-6.5	Low	0.10			
Ce	0-3	12-27	1.30-1.60	0.6-2.0	0.14-0.20	4.5-6.0	Low	0.37	5	5	.5-3
Chenneby	3-62	12-35	1.30-1.50	0.6-2.0	0.15-0.20	4.5-6.0	Low	0.32			
Co	0-9	10-25	1.20-1.40	0.6-2.0	0.12-0.20	4.5-7.3	Low	0.37	5	6	1-4
Congaree	9-80	18-35	1.20-1.50	0.6-2.0	0.12-0.20	4.5-7.3	Low	0.37			
Cx	0-6	5-20	1.45-1.65	0.6-2.0	0.12-0.17	3.6-5.5	Low	0.24	5	3	2-4
Coxville	6-62	35-60	1.25-1.45	0.2-0.6	0.14-0.18	3.6-5.5	Moderate	0.32			
DoA, DoB	0-13	2-15	1.30-1.60	2.0-6.0	0.06-0.10	4.5-6.0	Very low	0.15	5	2	<.5
Dothan	13-40	18-35	1.40-1.60	0.6-2.0	0.12-0.16	4.5-6.0	Low	0.28			
	40-62	20-40	1.45-1.70	0.2-0.6	0.08-0.12	4.5-6.0	Low	0.28			
EnA	0-5	3-11	1.45-1.70	2.0-6.0	0.06-0.11	4.5-5.5	Low	0.15	5	2	.5-2
Eunola	5-41	18-35	1.35-1.65	0.6-2.0	0.12-0.17	4.5-5.5	Low	0.28			
	41-60	2-11	1.45-1.75	6.0-20	0.02-0.06	4.5-5.5	Low	0.20			

See footnote at end of table.

Table 18.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
FaA, FaB, FaC----	0-8	5-20	1.40-1.65	6.0-20	0.06-0.09	4.5-6.0	Low----------	0.28	5	3	.5-2
Faceville	8-61	35-55	1.25-1.60	0.6-2.0	0.12-0.18	4.5-6.0	Low----------	0.37			
FuB----------	0-23	1-7	1.60-1.70	>6.0	0.03-0.07	4.5-7.3	Low----------	0.10	5	1	.5-2
Fuquay	23-41	10-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-6.0	Low----------	0.20			
	41-63	20-40	1.40-1.60	0.06-0.2	0.10-0.13	4.5-6.0	Low----------	0.20			
GoA----------	0-12	2-8	1.55-1.75	6.0-20	0.06-0.11	3.6-6.5	Low----------	0.17	5	2	.5-2
Goldsboro	12-62	18-30	1.30-1.50	0.6-2.0	0.11-0.17	3.6-5.5	Low----------	0.24			
GrA, GrB, GrC----	0-7	5-20	1.30-1.65	0.6-6.0	0.07-0.14	4.5-6.5	Low----------	0.24	5	3	.5-2
Greenville	7-68	35-55	1.35-1.55	0.6-2.0	0.14-0.18	4.5-6.0	Low----------	0.17			
Gt*:											
Grifton---------	0-9	7-18	1.45-1.65	2.0-6.0	0.10-0.14	4.5-6.5	Low----------	0.20	5	3	2-4
	9-29	18-35	1.35-1.45	0.6-2.0	0.12-0.17	4.5-7.3	Moderate-----	0.24			
	29-42	2-18	1.45-1.70	2.0-20	0.07-0.14	5.6-8.4	Low----------	0.20			
	42-64	---	---	---	---	---	-------------	----			
Gt*:											
Elloree---------	0-9	2-8	1.40-1.60	6.0-20	0.06-0.11	5.6-7.3	Low----------	0.15	5	2	2-8
	9-29	1-6	1.50-1.70	6.0-20	0.02-0.10	5.1-7.3	Low----------	0.10			
	29-48	9-25	1.30-1.60	2.0-6.0	0.10-0.15	5.1-8.4	Low----------	0.15			
	48-62	5-25	1.30-1.50	2.0-6.0	0.10-0.17	5.1-8.4	Low----------	0.17			
Jo----------	0-34	5-18	1.30-1.55	2.0-6.0	0.10-0.20	4.5-5.5	Low----------	0.20	5	5	3-15
Johnston	34-65	2-12	1.55-1.65	6.0-20	0.02-0.07	4.5-5.5	Low----------	0.17			
LuB----------	0-26	1-10	1.30-1.70	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.10	5	1	.5-1
Lucy	26-63	20-32	1.40-1.60	2.0-6.0	0.10-0.12	4.5-5.5	Low----------	0.24			
Ly----------	0-7	2-10	1.40-1.70	6.0-20	0.07-0.10	4.5-6.0	Low----------	0.15	5	2	.5-3
Lynchburg	7-65	18-35	1.30-1.50	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.20			
Mu----------	0-2	28-40	1.20-1.40	0.06-0.6	0.12-0.18	3.6-5.0	Moderate-----	0.32	5	---	1-5
Mullers	2-16	15-40	1.20-1.35	0.06-0.6	0.12-0.18	3.6-5.0	Moderate-----	0.37			
	16-64	35-70	1.20-1.35	0.06-0.2	0.14-0.20	3.6-5.0	Moderate-----	0.37			
NoA, NoB---------	0-17	2-8	1.55-1.80	6.0-20	0.08-0.11	3.6-6.0	Low----------	0.10	5	2	.5-2
Noboco	17-63	20-35	1.45-1.75	0.6-2.0	0.11-0.14	3.6-5.5	Low----------	0.24			

See footnote at end of table.

Table 18.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
NrA, NrB	0-11	2-8	1.55-1.70	6.0-20	0.06-0.11	3.6-6.0	Low	0.17	5	2	.5-2
Norfolk	11-62	20-35	1.30-1.65	0.6-2.0	0.10-0.18	3.6-5.5	Low	0.24			
Og	0-16	5-10	1.40-1.50	2.0-6.0	0.03-0.05	4.5-5.5	Low	0.10	5	2	1-2
Ogeechee	16-40	20-35	1.55-1.65	0.6-2.0	0.08-0.14	4.5-5.5	Low	0.15			
	40-64	15-30	1.55-1.65	0.6-2.0	0.10-0.14	4.5-6.0	Low	0.15			
OrA, OrB, OrC	0-16	4-10	1.35-1.55	2.0-6.0	0.06-0.09	4.5-6.0	Low	0.10	5	2	.5-1
Orangeburg	16-58	20-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low	0.24			
	58-75	20-45	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low	0.24			
Pa	0-17	8-25	1.30-1.40	2.0-6.0	0.12-0.16	3.6-6.5	Low	0.20	5	3	2-10
Paxville	17-46	20-35	1.20-1.50	0.6-2.0	0.12-0.18	3.6-5.5	Low	0.15			
	46-61	8-18	1.30-1.50	6.0-20	0.05-0.10	3.6-5.5	Low	0.10			
PeB, PeC, PeD	0-9	2-10	1.35-1.75	>6.0	0.03-0.06	3.6-6.5	Low	0.15	3	2	.5-2
Pelion	9-25	18-35	1.40-1.60	0.6-2.0	0.12-0.16	3.6-5.5	Low	0.17			
	25-38	18-50	1.40-1.75	0.06-0.6	0.06-0.10	3.6-5.5	Low	0.20			
	38-68	10-40	1.40-1.60	0.6-2.0	0.06-0.10	3.6-5.5	Low	0.15			
Ra	0-14	5-20	1.30-1.60	2.0-6.0	0.10-0.14	3.6-6.5	Low	0.20	5	3	1-6
Rains	14-39	18-35	1.30-1.60	0.6-2.0	0.11-0.15	3.6-5.5	Low	0.24			
	39-62	18-40	1.30-1.50	0.6-2.0	0.10-0.15	3.6-5.5	Low	0.28			
SuA, SuB	0-12	4-10	1.40-1.50	2.0-20	0.05-0.10	3.6-6.0	Low	0.15	5	2	.5-1
Suffolk	12-33	10-33	1.40-1.50	0.6-2.0	0.10-0.15	3.6-6.0	Low	0.24			
	33-66	4-10	1.40-1.50	2.0-20	0.04-0.10	3.6-6.0	Low	0.15			
To	0-7	2-12	1.40-1.65	6.0-20	0.02-0.10	4.5-5.5	Low	0.05	5	1	2-5
Totness	7-48	2-12	1.40-1.65	>6.0	0.02-0.10	4.5-5.5	Low	0.05			
	48-74	10-28	1.30-1.60	0.6-2.0	0.12-0.20	4.5-5.5	Low	0.28			
	74-80	2-18	1.40-1.65	>6.0	0.02-0.15	4.5-5.5	Low	0.10			
TrB, TrC	0-58	1-10	1.30-1.70	6.0-20	0.05-0.10	4.5-6.0	Very low	0.10	5	1	<1
Troup	58-80	15-35	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low	0.20			
UdB	0-60	10-35	1.30-1.95	0.06-2.0	0.10-0.17	3.6-6.0	Moderate	0.28	5	5	0-1
Udorthents											

See footnote at end of table.

Table 18.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
VaB, VaC, VaD---- Vaucluse	0-19	2-10	1.30-1.60	6.0-20	0.04-0.08	4.5-6.0	Low----------	0.15	3	2	<1
	19-28	18-35	1.35-1.75	0.6-2.0	0.10-0.15	3.6-5.5	Low----------	0.24			
	28-48	18-45	1.75-1.95	0.06-0.6	0.04-0.08	3.6-5.5	Low----------	0.24			
	48-62	15-30	1.55-1.90	2.0-6.0	0.04-0.08	3.6-5.5	Low----------	0.17			

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 19.--Soil and Water Features

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
AeB, AeC--Ailey	B	None	---	---	>6.0	---	---	Moderate	Moderate.
AmD*, AmE*:									
Ailey	B	None	---	---	>6.0	---	---	Moderate	Moderate.
Vaucluse	C	None	---	---	>6.0	---	---	Low	High.
ApB, ApC, ApD--Alpin	A	None	---	---	>6.0	---	---	Low	High.
Ce--Chenneby	C	Occasional	Very brief to long.	Dec-Apr	1.0-2.5	Apparent	Jan-Mar	High	Moderate.
Co--Congaree	B	Occasional	Brief	Nov-Apr	2.5-4.0	Apparent	Nov-Apr	Moderate	Moderate.
Cx--Coxville	D	None	---	---	0-1.0	Apparent	Nov-Apr	High	High.
DoA, DoB--Dothan	B	None	---	---	3.0-5.0	Perched	Jan-Apr	Moderate	Moderate.
EnA--Eunola	C	None	---	---	1.5-2.5	Apparent	Nov-Mar	Low	High.
FaA, FaB, FaC--Faceville	B	None	---	---	>6.0	---	---	Low	Moderate.
FuB--Fuquay	B	None	---	---	4.0-6.0	Perched	Jan-Mar	Low	High.
GoA--Goldsboro	B	None	---	---	2.0-3.0	Apparent	Dec-Apr	Moderate	High.
GrA, GrB, GrC--Greenville	B	None	---	---	>6.0	---	---	Moderate	High.
Gt*:									
Grifton	D	Frequent	Brief to long.	Dec-Apr	0-1.0	Apparent	Dec-May	High	Low.
Elloree	D	Frequent	Brief to long.	Dec-Apr	0-1.0	Apparent	Nov-Apr	High	Moderate.
Jo--Johnston	D	Frequent	Brief to long.	Nov-Jul	+1-1.5	Apparent	Nov-Jun	High	High.

See footnote at end of table.

Table 19.--Soil and Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
LuB---------- Lucy	A	None-------	---	---	>6.0	---	---	Low------	High.
Ly---------- Lynchburg	C	None-------	---	---	0.5-1.5	Apparent	Nov-Apr	High-----	High.
Mu---------- Mullers	D	Frequent---	Brief to long.	Dec-Apr	0.5-1.5	Apparent	Nov-May	High-----	High.
NoA, NoB------- Noboco	B	None-------	---	---	2.5-4.0	Apparent	Dec-Mar	Moderate	High.
NrA, NrB------- Norfolk	B	None-------	---	---	4.0-6.0	Apparent	Jan-Mar	Moderate	High.
Og---------- Ogeechee	B/D	None-------	---	---	0-1.0	Apparent	Dec-May	High-----	High.
OrA, OrB, OrC-- Orangeburg	B	None-------	---	---	>6.0	---	---	Moderate	Moderate.
Pa---------- Paxville	B/D	Rare-------	---	---	+1-1.0	Apparent	Nov-Apr	High-----	High.
PeB, PeC, PeD-- Pelion	B/D	None-------	---	---	1.0-2.5	Perched	Nov-Apr	High-----	High.
Ra---------- Rains	B/D	None-------	---	---	0-1.0	Apparent	Nov-Apr	High-----	High.
SuA, SuB------- Suffolk	B	None-------	---	---	>6.0	---	---	Moderate	High.
To---------- Totness	D	Frequent---	Brief to long.	Nov-May	0-1.0	Apparent	Nov-Apr	High-----	High.
TrB, TrC------- Troup	A	None-------	---	---	>6.0	---	---	Low------	Moderate.
UdB---------- Udorthents	B	None-------	---	---	>6.0	---	---	Moderate	High.
VaB, VaC, VaD-- Vaucluse	C	None-------	---	---	>6.0	---	---	Low------	High.

* See description of the map unit for composition and behavior characteristics of the map

Table 20.--Particle-Size Distribution of Selected Soils

Soil series and sample number	Horizon	Depth (inches)	Percent sand						Percent silt	Percent clay	Texture
			Very coarse	Coarse	Medium	Fine	Very fine	Total			
Coxville:	A	0 to 6	2.6	20.5	19.2	18.1	5.9	66.3	19.7	14.0	Sandy loam
(S89SC017-5)	Btg1	6 to 10	2.3	14.6	15.9	15.3	5.5	53.6	21.1	25.3	Sandy clay loam
	Btg2	10 to 31	2.5	10.7	12.9	11.7	4.1	41.9	18.3	39.8	Clay loam
	Btg3	31 to 44	2.6	10.8	12.5	10.0	2.9	38.7	12.2	49.1	Clay
	Btg4	44 to 62	2.1	14.7	17.2	10.7	2.2	47.0	9.4	43.6	Sandy clay
Faceville:	Ap	0 to 5	1.1	10.8	11.5	28.2	21.7	73.4	14.3	12.3	Fine sandy loam
(S89SC017-10)	BA	5 to 8	1.5	12.3	11.1	24.5	18.3	67.7	13.2	19.1	Fine sandy loam
	Bt1	8 to 34	1.4	6.9	6.3	13.7	10.2	38.6	9.5	51.9	Clay
	Bt2	34 to 48	1.6	7.8	6.8	13.4	10.9	40.5	10.3	49.2	Clay
	Bt3	48 to 61	2.3	14.2	7.6	10.0	9.2	43.4	12.4	44.2	Clay
Goldsboro:	Ap	0 to 5	2.1	14.5	19.0	34.8	12.0	82.4	12.9	4.7	Loamy sand
(S89SC017-7)	E	5 to 8	1.2	10.9	17.6	35.7	11.3	76.7	16.5	6.8	Fine sandy loam
	Bt1	8 to 20	3.7	10.7	12.9	25.9	8.8	62.0	13.4	24.6	Sandy clay loam
	Bt2	20 to 26	2.2	11.0	15.1	28.2	9.5	66.0	14.3	19.7	Fine sandy loam
	Bt3	26 to 50	1.3	10.0	15.8	28.9	9.1	65.1	14.1	20.8	Sandy clay loam
	Bt4	50 to 65	2.6	14.9	17.4	23.3	6.7	64.9	10.8	24.3	Sandy clay loam

Table 21.--Chemical Properties of Selected Soils

Soil series and sample number	Horizon	Depth	Extractable bases				Extractable acidity	Cation-exchange capacity		Base saturation (sum of cations)	Extractable aluminum	Aluminum saturation (bases and aluminum)	Effective cation-exchange capacity (bases and aluminum)	pH
			Ca	Mg	K	Na		Sum of cations	NH4OAc pH 7.0					
		In	Meq/100g							Pct	Meq/100g	Pct	Meq/100g	
Coxville:	A	0-6	2.45	0.66	0.72	0.08	8.23	12.15	4.80	32.26	0.17	4.33	4.10	5.20
(S89SC017-5)	Btg1	6-10	2.20	.74	.20	.05	8.23	11.44	3.40	28.00	.96	23.15	4.16	5.00
	Btg2	10-31	1.20	.43	.14	.06	12.55	14.39	6.60	12.82	3.97	68.27	5.82	4.40
	Btg3	31-44	.70	.33	.11	.07	14.51	15.72	7.80	7.73	5.41	81.65	6.63	4.20
	Btg4	44-62	.60	.29	.08	.07	11.76	12.82	6.30	8.26	4.75	81.76	5.81	4.20
Faceville:	Ap	0-5	1.30	.42	.36	.06	5.49	7.63	2.30	28.11	.05	2.51	2.20	5.90
(S89SC017-10)	BA	5-8	1.25	.49	.32	.06	5.88	8.01	2.20	26.61	.06	3.02	2.19	5.90
	Bt1	8-34	1.80	1.07	.80	.06	5.49	9.24	4.70	40.57	.00	.00	3.74	6.00
	Bt2	34-48	1.80	.83	.26	.07	7.84	10.80	3.70	27.41	.02	.74	2.98	5.50
	Bt3	48-61	.70	.74	.09	.07	8.23	9.84	1.70	16.38	.36	18.50	1.98	4.60
Goldsboro:	Ap	0-5	1.40	.34	.17	.07	6.27	8.28	1.90	24.21	.06	3.21	2.07	5.90
(S89SC017-7)	E	5-8	.67	.30	.22	.05	5.49	6.75	1.80	18.67	.21	14.32	1.47	5.80
	Bt1	8-20	.95	.43	.28	.05	8.23	9.96	4.10	17.37	1.53	46.93	3.26	5.10
	Bt2	20-26	1.00	.20	.04	.07	6.27	7.60	3.80	17.53	.94	41.42	2.27	4.90
	Bt3	26-50	.80	.26	.06	.06	7.45	8.64	2.80	13.80	1.19	50.11	2.39	4.80
	Bt4	50-65	.85	.19	.08	.07	8.23	9.44	3.60	12.78	1.42	54.06	2.62	4.90

Table 22.--Clay Mineralogy of Selected Soils

(The symbol > means greater than; < means less than. Dashes indicate that material was not detected)

Soil series	Horizon	Kaolinite	Hydroxy-interlayered vermiculite	Vermiculite	Gibbsite
		Pct	Pct	Pct	Pct
Faceville--	Bt1	40	15	---	40
	Bt2	60	10	---	25
	Bt3	>85	---	---	5
Coxville---	Btg2	75	---	15	---
	Btg3	80	---	10	---
Goldsboro--	Bt1	75	15	5	---
	Bt3	80	10	5	---

Table 23.--Classification of the Soils

Soil name	Family or higher taxonomic class
Ailey	Loamy, siliceous, thermic Arenic Kanhapludults
Alpin	Thermic, coated Argic Quartzipsamments
Chenneby	Fine-silty, mixed, thermic Fluvaquentic Dystrochrepts
Congaree	Fine-loamy, mixed, nonacid, thermic Typic Udifluvents
Coxville	Clayey, kaolinitic, thermic Typic Paleaquults
Dothan	Fine-loamy, siliceous, thermic Plinthic Kandiudults
Elloree	Loamy, siliceous, thermic Arenic Endoaqualfs
Eunola	Fine-loamy, siliceous, thermic Aquic Hapludults
Faceville	Clayey, kaolinitic, thermic Typic Kandiudults
Fuquay	Loamy, siliceous, thermic Arenic Plinthic Kandiudults
Goldsboro	Fine-loamy, siliceous, thermic Aquic Paleudults
Greenville	Clayey, kaolinitic, thermic Rhodic Kandiudults
Grifton	Fine-loamy, siliceous, thermic Typic Endoaqualfs
Johnston	Coarse-loamy, siliceous, thermic Cumulic Humaquepts
Lucy	Loamy, siliceous, thermic Arenic Kandiudults
Lynchburg	Fine-loamy, siliceous, thermic Aeric Paleaquults
Mullers	Fine, mixed, acid, thermic Aeric Fluvaquents
Noboco	Fine-loamy, siliceous, thermic Typic Paleudults
Norfolk	Fine-loamy, siliceous, thermic Typic Kandiudults
Ogeechee	Fine-loamy, siliceous, thermic Typic Endoaquults
Orangeburg	Fine-loamy, siliceous, thermic Typic Kandiudults
Paxville	Fine-loamy, siliceous, thermic Typic Umbraquults
Pelion	Fine-loamy, siliceous, thermic Aquic Kanhapludults
Rains	Fine-loamy, siliceous, thermic Typic Paleaquults
Suffolk	Fine-loamy, siliceous, thermic Typic Hapludults
Totness	Siliceous, thermic Typic Psammaquents
Troup	Loamy, siliceous, thermic Grossarenic Kandiudults
Udorthents	Udorthents
Vaucluse	Fine-loamy, siliceous, thermic Typic Kanhapludults

NRCS Accessibility Statement

The Natural Resources Conservation Service (NRCS) is committed to making its information accessible to all of its customers and employees. If you are experiencing accessibility issues and need assistance, please contact our Helpdesk by phone at 1-800-457-3642 or by e-mail at ServiceDesk-FTC@ftc.usda.gov. For assistance with publications that include maps, graphs, or similar forms of information, you may also wish to contact our State or local office. You can locate the correct office and phone number at http://offices.sc.egov.usda.gov/locator/app.