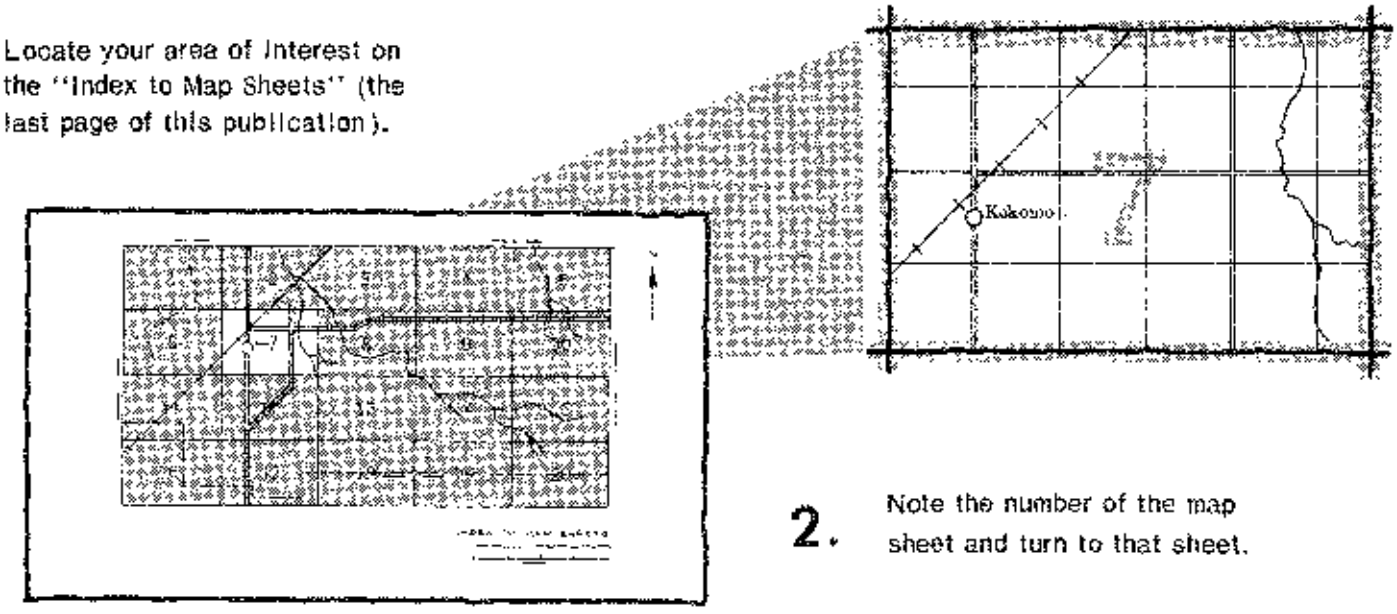
SOIL SURVEY OF

Richland County, South Carolina

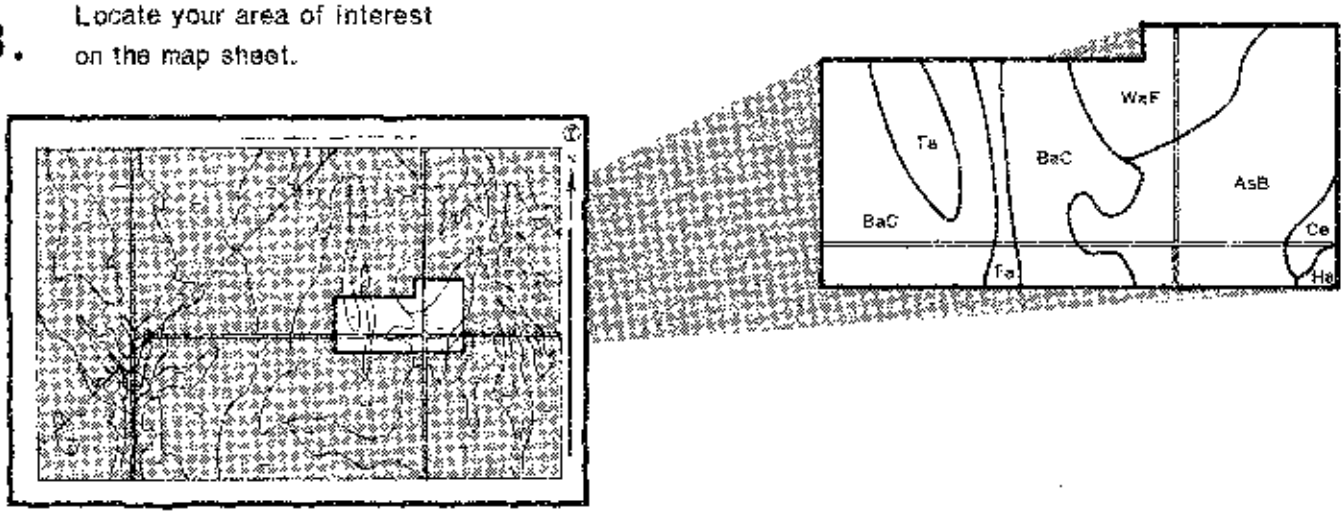
HOW TO USE

1. Locate your area of interest on the "Index to Map Sheets" (the last page of this publication).

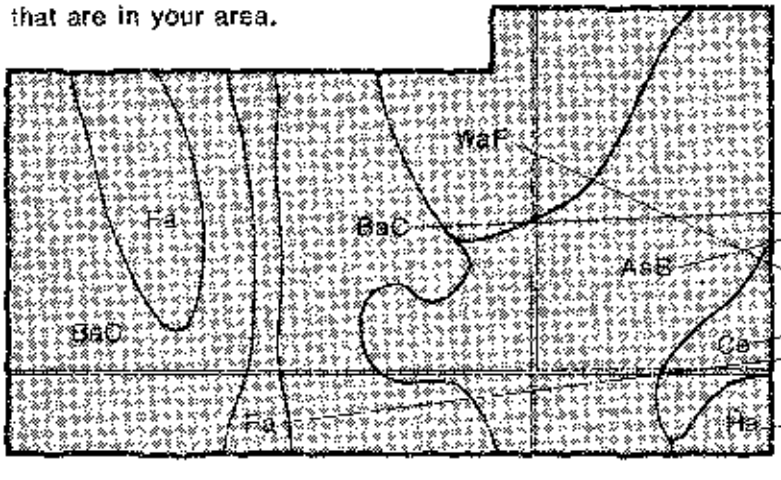


2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.



4. List the map unit symbols that are in your area.



Symbols

- AsB
- BaC
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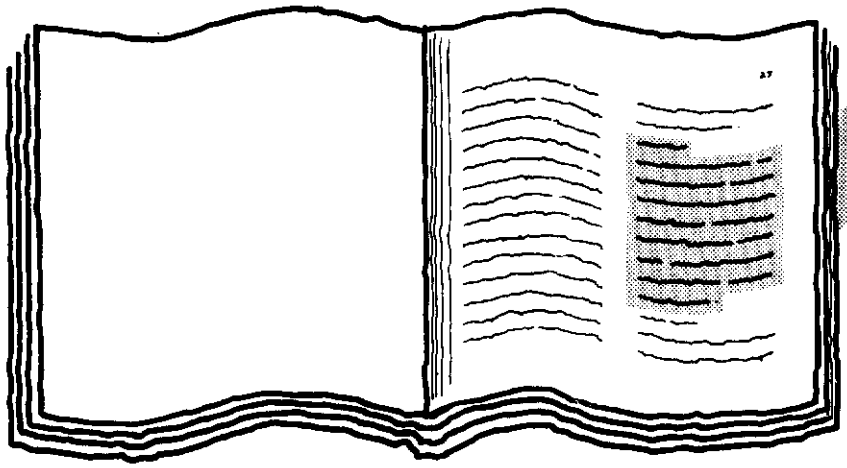
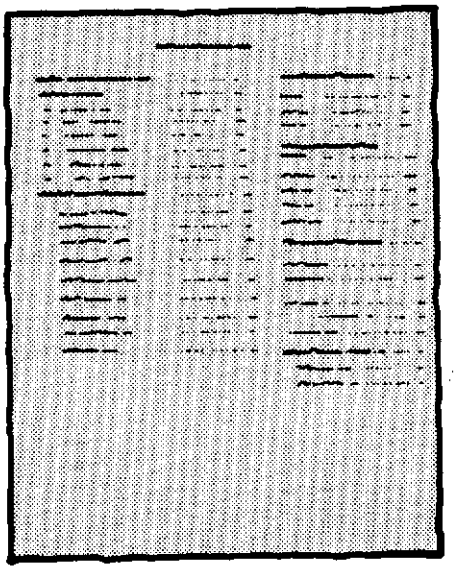
- WaF

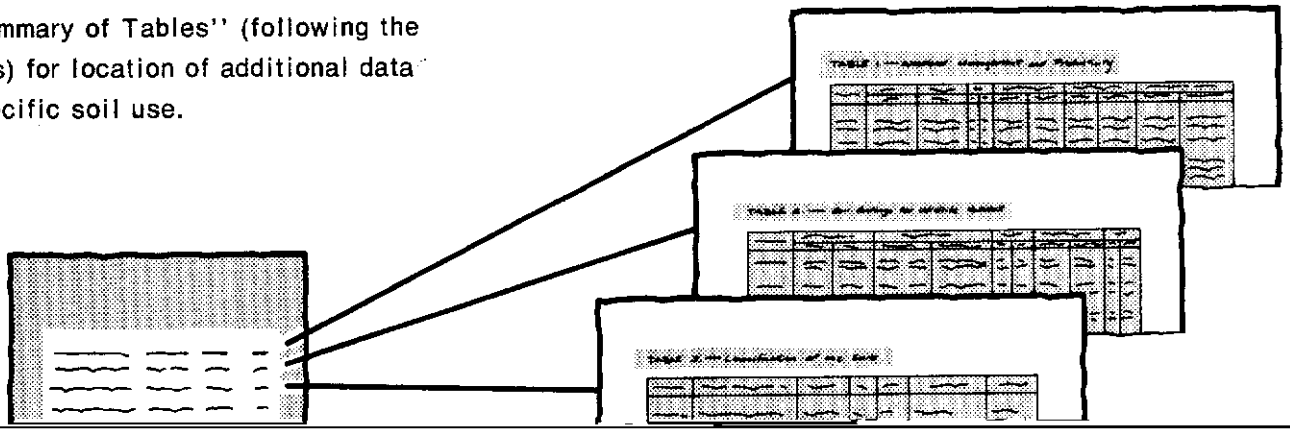
THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.





6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



This is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and agencies of the States, usually the Agricultural Experiment Stations. In some surveys, other Federal and local agencies also contribute. The Soil Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in the period 1970-76. Soil names and descriptions were approved in 1976. Unless otherwise indicated, statements in the publication refer to conditions in the survey area in 1976. This survey was made cooperatively by the Soil 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 Richland Soil and Water Conservation District.

Soil maps in this survey may be copied without permission, but any enlargement of these maps can cause misunderstanding of the detail of mapping and result in erroneous interpretations. Enlarged maps do not show small areas of contrasting soils that could have been shown at a larger mapping scale.

Cover: Coastal bermudagrass hay cut from an area of Fuquay sand, 2 to 6 percent slopes.

Index to Soil Map Units

Summary of Tables--Continued

Foreword

rvey of Richland County, South Carolina, contains much infor-
n any land-planning program. Of prime importance are the pre-
behavior for selected land uses. Also highlighted are limitations
and uses that are inherent in the soil, improvements needed to
limitations, and the impact that selected land uses will have on
it.

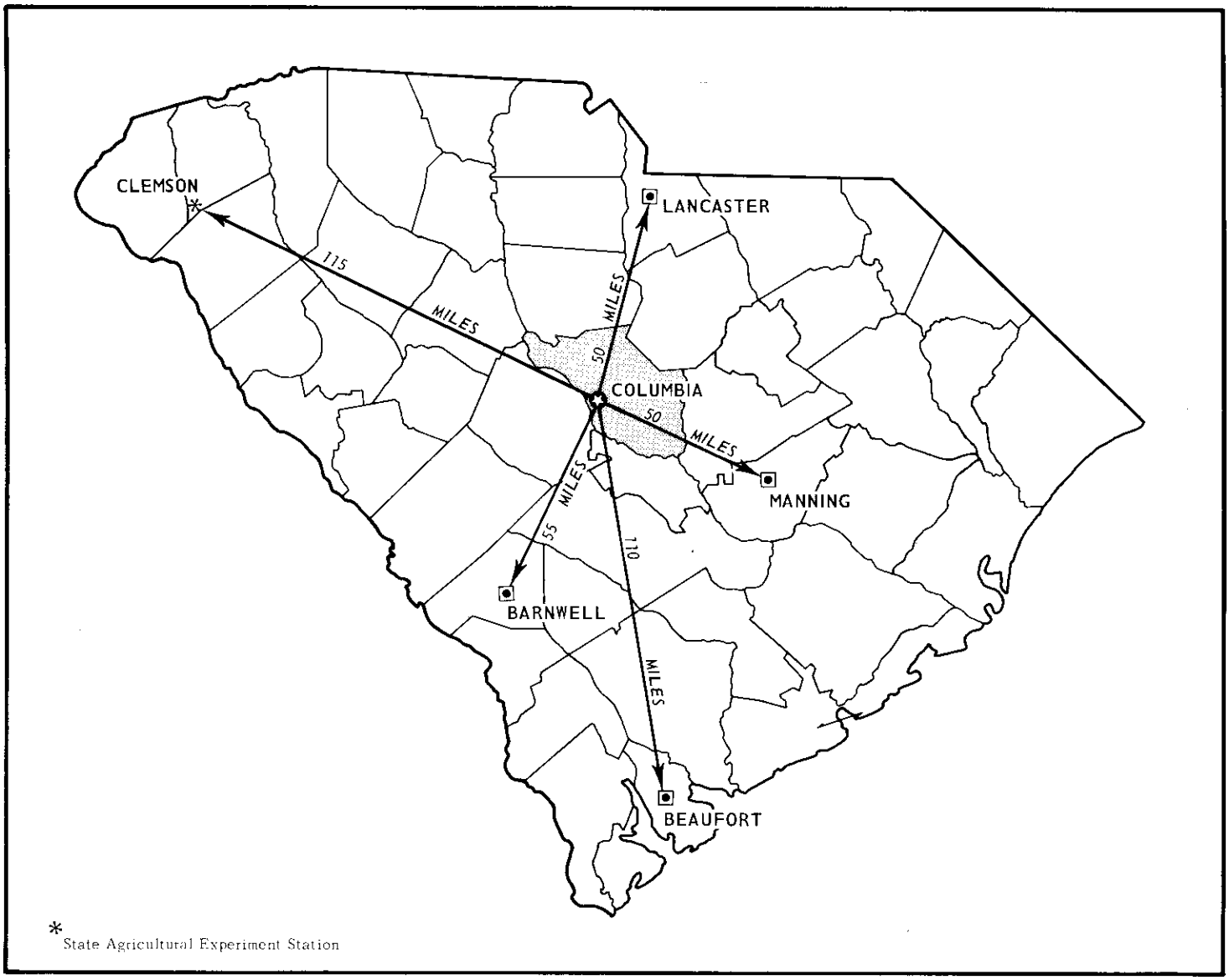
survey has been prepared for many different users. Farmers,
agronomists can use it to determine the potential of the soil and
nt practices required for food and fiber production. Planners,
cials, engineers, developers, builders, and homebuyers can use it
e, select sites for construction, develop soil resources, or identify
actices that may be needed to insure proper performance. Con-
eachers, students, and specialists in recreation, wildlife manage-
sposal, and pollution control can use the soil survey to help them
otect, and enhance the environment.

erences in soil properties can occur even within short distances.
seasonally wet or subject to flooding. They may be shallow to
may be too unstable to be used as a foundation for buildings or
layey or wet soils are poorly suited to septic tank absorption
water table makes a soil poorly suited to basements or un-
allations.

many other soil properties that affect land use are described in
y. Broad areas of soils are shown on the general soil map; the lo-
kind of soil is shown on detailed soil maps. Each kind of soil in
a is described, and much information is given about each soil for
Additional information or assistance in using this publication can
rom the local office of the Soil Conservation Service or the
xtension Service.

survey can be useful in the conservation, development, and
of soil, water, and other resources.

George E. Huey
State Conservationist
Soil Conservation Service



Location of Richland County in South Carolina.

JNTY, SOUTH CAROLINA

nservation Service

.de Hurt, Daniel D. Monts, and
rvation Service

Soil Conservation Service, in
ultural Experiment Station and
Conservation Commission

h crop. Wheat was grown both for market and home Indigo and tobacco were at one time important crops. ior to the Civil War the better farming of the county on the large plantations. The war was followed by a period of depression, but eventually farming and phases of agriculture again became the leading oc-ions. Markets and transportation developed. As cot-became higher priced other crops were reduced in ge, and a one-crop system developed. Turpentine lumber industries also became important during this d, but farming continued to develop after these in-ies declined.

ce World War II farm operations in the county have ned. Presently, most of the intensive, full-time farm-s concentrated in the southern part of the county. n land and other built-up areas increased from 7 acres in 1958 to 84,127 acres at the end of 1967—an ase of about 73 percent in the 10-year period.

nate

chland County is hot and generally humid in summer se of moist air from the ocean. Winter is moderately but short, because cold waves from the north are im-d by the mountains to the northwest of the county. ipitation is quite evenly distributed throughout the and is adequate for all crops.

ble 1 gives data on temperature and precipitation for urvey area, as recorded at Columbia, South Carolina, he period 1951 to 1973. Table 2 shows probable dates e first freeze in fall and the last freeze in spring. e 3 provides data on length of the growing season.

winter the average temperature is 48 degrees F, and average daily minimum temperature is 38 degrees. lowest temperature on record, which occurred at mbia on January 9, 1970, is 7 degrees. In summer the age temperature is 80 degrees, and the average daily mum temperature is 91 degrees. The highest ded temperature, which occurred on June 27, 1954, is legrees.

rowing degree days, shown in table 1, are equivalent heat units." During the month, growing degree days 'mulate by the amount that the average temperature day exceeds a base temperature (50 degrees F). The nal monthly accumulation is used to schedule single or essive plantings of a crop between the last freeze in ng and the first freeze in fall.

f the total annual precipitation, 27 inches, or 57 per-, usually falls in April through September, which in-es the growing season for most crops. In 2 years out 0, the rainfall in April through September is less than nches. The heaviest 1-day rainfall during the period of rd was 5.90 inches at Columbia on September 30,). Thunderstorms occur about 54 times each year, and ıt 32 of these occur in summer.

howfall is rare; in 38 percent of the winters, there is measureable snowfall. In 55 percent, the snowfall is than 2 inches. The heaviest 1-day snowfall on record more than 14 inches.

he average relative humidity in midafternoon is about ercent. Humidity is higher at night, and the average lawn is about 90 percent. The percentage of possible shine is 65 in summer and 60 in winter. The prevailing d is from the southwest. Average windspeed is est, 9 miles per hour, in April.

very few years heavy snow covers the ground for a days to a week in winter, and during late summer or mn a tropical storm moving inland from the Atlantic an causes extremely heavy rain for 1 to 3 days.

limatic data in this section were specially prepared for Soil Conservation Service by the National Climatic ter, Asheville, North Carolina.

ysiography, geology, relief, and drainage

ichland County lies in two physiographic provinces: Piedmont Plateau and the Atlantic Coastal Plain. ut one-third of the county is in the Piedmont province two-thirds is in the Coastal Plain province. These two vinces join along an irregular line that extends north n the vicinity of Columbia and runs west of U.S. hway 21 to Blythewood. From Blythewood this line nds southeast and crosses the Kershaw County line he confluence of Twenty-Five Mile Creek and Rice ek.

he Piedmont province has numerous streams and nageways that have dissected it in a dendritic pat-. Its main divides and ridgetops are fairly broad and gently sloping to moderately sloping toward the ams. The flood plains along streams are narrow. In y places along the small branches there are no flood ns. Along the major branches and creeks, the side es are strongly sloping to moderately steep. Steep es prevail close to and along the Broad River. Eleva- of the ridgetops is commonly 300 to 400 feet but ges up to 500 feet. Elevation along the streams is com-ly 200 to 300 feet.

In Richland County, all of the rocks in the Piedmont Plateau are grouped in a geologic belt known as the Carolina Slate Belt (*4*). This rock is shale and schist, not true slate. The principal rock type in this belt is argillite. It is fine grained and is high in silica and alumina. Many similar rock types and volcanic intrusions are included. Slate rock underlies the soils in the Nason-Georgeville map unit (described in the section "General soil map for broad land use planning"). The parent material of most soils in this unit is weathered from this rock.

Two intrusions of coarse grained granite occur in the county. One is along the Broad River north of Columbia, just south of Cedar Creek; the other is on the steep slopes adjacent to the forks of the Broad and Saluda Rivers. This coarse grained granite underlies Wedowee soils.

The northern half of the Coastal Plain province in Richland County is known as the "Sand Hills." It joins the Piedmont province, which is to the north and west. The southern boundary of the Sand Hills extends from Columbia southeast to the Wateree River and Colonels Creek. The Sand Hills has many springs, and the numerous streams which originate here are fed by ground water and have a strong flow throughout the year. These streams flow through the more level part of the Coastal Plain in narrow valleys, and they have few tributaries. Elevations along the streams dissecting this region range from about 200 to 300 feet.

The tops of the main ridges of the Sand Hills are part of a plain that has mostly gentle slopes and elevations of 350 to 500 feet. The side slopes and smaller ridges have elevations ranging approximately from 300 to 400 feet. Slopes are gentle to strong.

The principal geologic formation in the Sand Hills and underlying the more level parts of the Coastal Plain is the Tuscaloosa (*3*). It consists of unconsolidated marine deposits of light colored sands and kaolin clays. Most of the soils of the Sand Hills (see descriptions of Sand Hill soils in section "General soil map for broad land use planning") are formed in sediment of this formation.

The lower or southern half of the Coastal Plain, between the flood plain of the Congaree River and the Sand Hills, is smooth and has broad stream divides and nearly level to gentle slopes. Many shallow depressions have an apparent water table. Streams cross this region, but very few originate within it. Elevations of the upland range from 100 feet to about 250 feet.

In the geologic past much of the lower Coastal Plain has been altered by three invasions of the sea which formed three terraces and formations—the Brandywine, the Coharie, and the Sunderland. Leveling off of the surface by the sea during these invasions has affected the topography and sedimentation of this part of the Coastal Plain. This region includes soils such as Dothan, Marlboro, Norfolk, Faceville, and Orangeburg.

The region also includes a large area of flood plain, 1/2 mile to 5 miles wide, that extends along the Congaree River. The dominantly silty and clayey alluvial sediment

nt groups of users, among them far-
of woodland, engineers, planners,
ders, homebuyers, and those seeking

nap for broad land use

map at the back of this publication
units that have a distinct pattern of
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map provides a broad perspective of
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urvey area vary widely in their poten-
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r major land uses. Soil properties that
the use are indicated. The ratings of
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is rated for *cultivated farm crops*,
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residential, commercial, and industrial
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are dominantly well drained on the higher plains and side slopes and somewhat poorly drained in the valleys. They have a sandy surface layer and a dominantly loamy subsoil.

2. Lakeland

Excessively drained soils that are sandy throughout

This map unit consists of deep, gently sloping to strongly sloping, excessively drained soils that formed in sandy marine sediment. These soils are in the eastern and northeastern parts of the county. They are on ridgetops and side slopes in the Sand Hill region.

The soils of this unit occupy about 11 percent of the county. About 70 percent of the unit is Lakeland soils, and the remaining 30 percent is minor soils.

Lakeland soils have a dark gray sandy surface layer. The underlying material is sandy to a depth of more than 80 inches.

Among the minor soils in this unit are moderately well drained Blanton and Pelion soils, excessively drained Kershaw soils, and well drained Vaucluse soils.

This unit is used mainly for unimproved woodland. Very low available water capacity and low inherent fertility are the main limitations of these soils for farming. The very rapid permeability of the soils can cause contamination of water supply and limit urban uses.

The soils have medium potential for pine timber and low potential for cultivated crops. They have high potential for urban development if the hazard of water contamination is overcome.

3. Vaucluse-Ailey-Pelion

Well drained and moderately well drained soils that have a sandy surface layer and a loamy subsoil; many have a fragipan in the subsoil

This unit consists of deep, mostly sloping to strongly sloping, well drained and moderately well drained soils that formed in loamy Coastal Plain sediment. These soils are in the eastern part of the county. They are on side slopes.

The soils of this unit occupy about 10 percent of the county. About 40 percent of the unit is Vaucluse soils, 20 percent is Ailey soils, and 10 percent is Pelion soils. The remaining 30 percent is minor soils.

Vaucluse soils are on the upper part of side slopes and on slope breaks. They are well drained. They have a loamy sand surface layer and a loamy subsoil. These soils have a firm, slowly permeable fragipan in the subsoil. Ailey soils are mostly on toe slopes. They are well drained. These soils have thick, sandy surface and subsurface layers and a loamy subsoil. They have a firm, slowly permeable fragipan in the subsoil. Pelion soils are mostly on low toe slopes and in gently sloping stream valleys. They are moderately well drained. These soils have a loamy sand surface layer and a firm, slowly permeable, loamy subsoil.

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Soils of one series can differ in texture of the surface layer or in the underlying substratum and in slope, erosion, stoniness, salinity, wetness, or other characteristics that affect their use. On the basis of such differences, a soil series is divided into phases. 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 one of several phases within the Orangeburg series.

Some map units are made up of two or more dominant kinds of soil. Such map units are called soil complexes.

A *soil complex* consists of areas of two or more soils that are so intricately mixed or so small in size that they cannot be shown separately on the soil map. Each area includes some of each of the two or more dominant soils, and the pattern and proportion are somewhat similar in all areas. Fuquay-Urban land complex is an example.

Most map units include small, scattered areas of soils other than those that appear in the name of the map unit. Some of these soils have properties that differ substantially from those of the dominant soil or soils and thus could significantly affect use and management of the map unit. These soils are described in the description of each map unit. Some of the more unusual or strongly contrasting soils that are included are identified by a special symbol on the soil map.

Most mapped areas include places that have little or no soil material and support little or no vegetation. Such places are called *miscellaneous areas*; they are delineated on the soil map and given descriptive names. Udorthents is an example. Some of these areas are too small to be delineated and are identified by a special symbol on the soil map.

The acreage and proportionate extent of each map unit are given in table 5, and additional information on properties, limitations, capabilities, and potentials for many soil uses is given for each kind of soil in other tables in this survey. (See "Summary of tables.") Many of the terms used in describing soils are defined in the Glossary.

AeC—Ailey loamy sand, 2 to 10 percent slopes. This deep, well drained, gently sloping to sloping soil is on side slopes and toe slopes in the Coastal Plain uplands. Slopes are generally smooth, but some are irregular.

Typically, the surface layer is dark grayish brown loamy sand about 5 inches thick. The subsurface layer is light yellowish brown loamy sand about 25 inches thick. The subsoil extends to a depth of 81 inches. The upper 8 inches of the subsoil is yellowish brown sandy clay loam; the next 31 inches is a firm, compact, brittle fragipan of mottled yellowish red, strong brown, and yellowish brown sandy clay loam; and the lower 12 inches is friable, mottled, light gray sandy clay loam.

Included with this soil in mapping are small areas of Pelion, Vaucluse, Fuquay, Lakeland, and Lucy soils. Also included are small areas of soils that have slopes of more than 10 percent and small areas of soils that have sand surface and subsurface layers more than 40 inches thick. Inclusions make up about 10 to 15 percent of the map unit.

This soil is strongly acid or very strongly acid throughout, except in areas where the surface layer is limed. Organic matter content is low. In the thick, sandy surface and subsurface layers, permeability is rapid; in the firm, brittle fragipan, permeability is slow. Available water capacity is low. In the lower part of the subsoil the downward movement of water is retarded, but tree roots and roots of deep-rooted perennials are not restricted. Most of the acreage is wooded.

This soil has low potential for cultivated crops. It has medium potential for pasture and hay. Low available water capacity in the sandy surface and subsurface layers contributes to droughtiness and to excessive leaching of plant nutrients. Gullies form where water concentrates from seepage over the fragipan. Terracing, annual cover crops, and cropping systems that include frequent close-growing crops are needed if this soil is cultivated. Coastal bermudagrass and bahiagrass are suitable for pasture or hay. They must be properly managed to prevent overharvesting or overgrazing.

This soil has medium potential for loblolly and slash pine.

This soil has high potential for urban development. Limitations are moderate for most urban uses and can be overcome by careful planning and installation procedures. Slow permeability in the fragipan severely limits the use of this soil for septic tank filter fields. Capability subclass IVs; woodland group 3s.

AtA—Altavista silt loam, 0 to 2 percent slopes. This moderately well drained, nearly level soil is on stream terraces in the Piedmont province of the county. It overlies bedrock of Carolina slate.

Typically, the surface layer is grayish brown silt loam about 7 inches thick. The subsoil extends to a depth of 39 inches. In sequence from the top, the upper 17 inches is dominantly brownish yellow silt loam; the next 16 inches is brownish yellow loam and has light gray mottles; and the lower 6 inches is strong brown and light gray loam. The underlying material, to a depth of 49 inches, is light gray and strong brown loam. Slate rock is below this depth.

Included with this soil in mapping are small areas of State, Chewacla, and Congaree soils; a few soils that have dominantly gray colors in the surface layer; a few soils that do not have gray mottles in the subsoil; and a few soils in which bedrock is above a depth of 40 inches or is deeper than 6 feet. Also included are a few areas along Crane Creek of a soil that is similar to this Altavista soil except that it has a clayey subsoil.

This soil is very strongly acid to medium acid throughout. Organic matter content is low. Permeability is moderate, and available water capacity is medium to high. Runoff is slow. This soil is flooded rarely for very brief periods. A water table is at a depth of 20 to 30 inches in wet seasons.

This soil has high potential for corn, soybeans, small grain, hay, and pasture. Wetness is the main hazard to farming. This hazard can be overcome and tilth can be improved by draining this soil. Open ditches, tile drains, or a combination of both of these is suitable. Diversion of runoff water from adjacent higher land is desirable in places. Tall fescue, dallisgrass, and Coastal bermudagrass are suited grasses for hay or pasture.

This soil has high potential for loblolly pine and bottomland hardwoods, such as sweetgum, poplar, cherrybark oak, and sycamore.

This soil has low potential for urban development. Wetness causes severe limitations for urban use, but this limitation can be overcome by properly designed drainage systems and appropriate building construction. Flooding is severe in some areas where land use on higher uplands has caused increase in runoff. Prior planning and special designs are needed to help overcome this hazard. Capability subclass IIw; woodland group 2w.

BaB—Blanton sand, 0 to 6 percent slopes. This deep, moderately well drained, nearly level to gently sloping soil is on convex side slopes in the Coastal Plain uplands.

Typically, the surface layer is dark grayish brown sand about 9 inches thick. The subsurface layer is pale yellow or very pale brown sand about 41 inches thick. The subsoil to a depth of 96 inches is 11 inches of brownish yellow sandy clay loam over 35 inches of mottled light gray, brownish yellow, reddish yellow, yellowish red, and red sandy clay loam.

Included with this soil in mapping are small areas of Fuquay, Lakeland, Lucy, and Troup soils. Also included are areas of soils that have a loamy sand surface layer and a few areas of soils that have more than 5 percent nodules of plinthite between depths of 40 and 60 inches. Small wet areas are included and are shown by a wet spot symbol.

This soil is very strongly acid to medium acid in the surface and subsurface layers and very strongly acid or strongly acid in the subsoil. Organic matter content is low. Permeability is rapid in the sandy surface and subsurface layers and is moderate in the subsoil. Available water capacity is low. After prolonged or heavy rains this soil has a perched water table at the top of the subsoil. This soil has good tilth and a deep rooting zone.

This soil has low potential for row crops. It is limited because the thick sandy surface and subsurface layers are droughty and allow plant nutrients to leach rapidly. For good crop production this soil requires more than average amounts of fertilizer. Lime and fertilizer are more efficient when applied frequently and in small amounts. This soil has medium potential for deep-rooted perennials, such as Coastal bermudagrass for hay and pasture. Cropping practices which supply a large amount of organic residue conserve moisture and reduce leaching.

This soil has medium potential for slash and loblolly pine.

This soil has high potential for urban uses. Except for those uses adversely affected by the deep sandy surface and subsurface layers, this soil has few limitations for urban development. Capability subclass IIIs; woodland group 3s.

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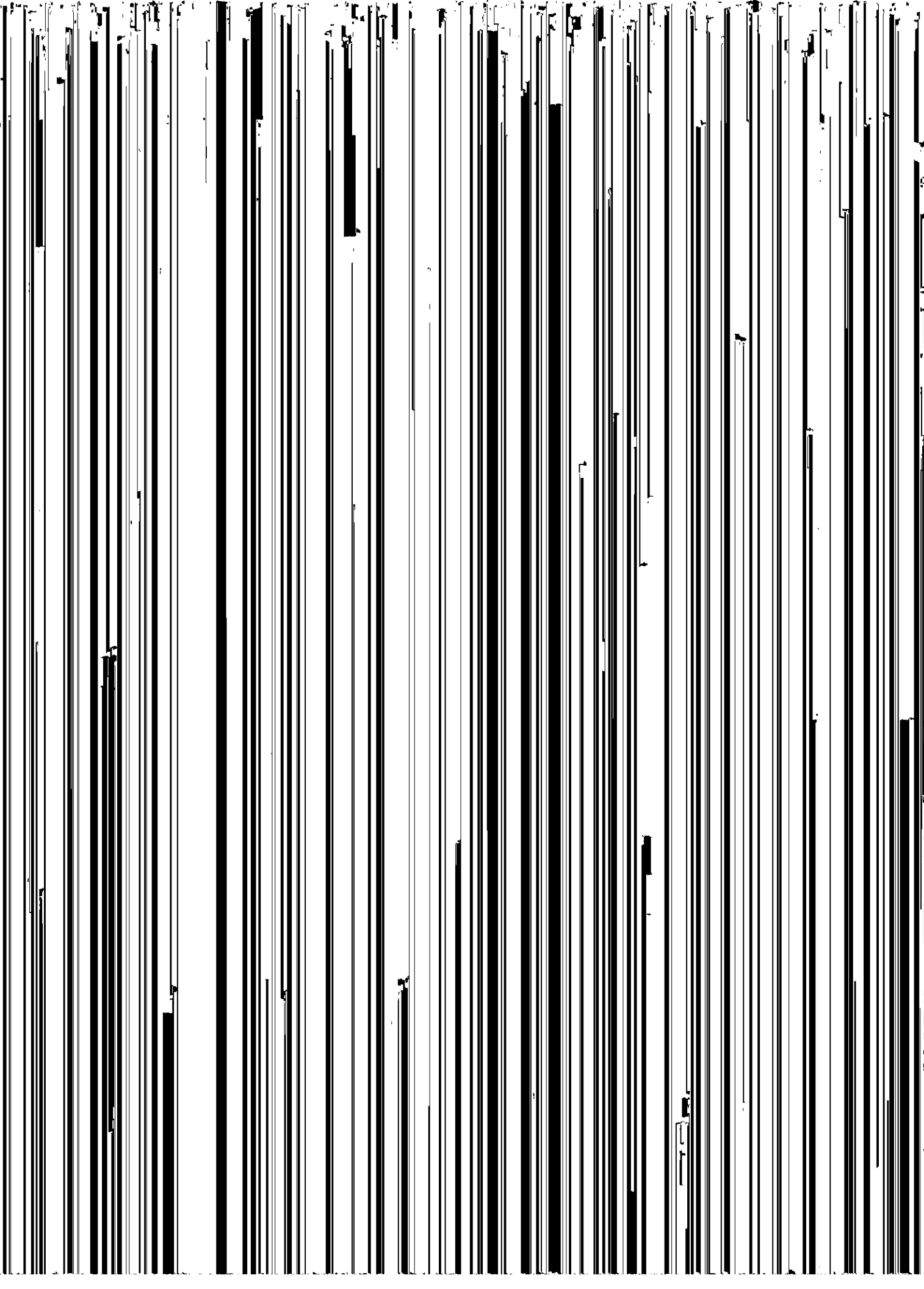

This soil has high potential for urban development. It has slight to moderate limitations for most urban uses. The limitations can be overcome by simple designs and construction modifications. Capability class I; woodland group 2o.

DoB—Dothan loamy sand, 2 to 6 percent slopes. This deep, gently sloping, well drained soil is on smooth, broad ridges throughout the Coastal Plain part of the county.

Typically, the surface layer is dark grayish brown loamy sand about 7 inches thick. The subsurface layer is pale brown loamy sand about 10 inches thick. The subsoil to a depth of 78 inches is 20 inches of yellowish brown sandy clay loam; 11 inches of yellowish brown sandy clay loam that has brown and red mottles; and 30 inches of mottled red, strong brown, yellowish brown, and light gray sandy clay. This lower 30 inches of the subsoil contains 10 to 30 percent nodules of plinthite.

Included with this soil in mapping are small areas of Fuquay, Marlboro, and Norfolk soils; a few areas of Dothan loamy sand, 0 to 2 percent slopes; a few areas of soils that have slopes of more than 6 percent; and a few areas of soils that do not have plinthite at a depth of less than 50 inches. Some small wet areas are also included.

This soil is strongly acid or very strongly acid throughout. Organic matter content is low. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is medium. Runoff is medium. Rooting and downward movement of water are retarded where plinthite is in the lower part of the subsoil. Good tilth is easy to maintain. Most of the acreage of this soil is used for crops, pasture, or hay; some of the acreage has been planted to pine.

This soil has high potential for corn, cotton, soybeans, and peach trees. Bahiagrass, Coastal bermudagrass, and sericea lespedeza are well suited for hay and pasture. Additions of plant residue help to maintain good tilth. Erosion is a moderate hazard if this soil is cultivated. Contour cultivation, terracing, and crop rotation help to reduce runoff and control erosion.

This soil has high potential for slash and loblolly pine.

This soil has high potential for urban development. It has slight to moderate limitations for most urban uses. The limitations can be overcome in most areas by simple designs and construction modifications. Capability subclass IIe; woodland group 2o.

DuB—Dothan-Urban land complex, 0 to 6 percent slopes. This complex consists of Dothan soils and Urban land in such an intricate pattern that it was not practical to separate them in mapping.

About 60 percent of this complex consists of Dothan soils. Some areas are relatively undisturbed; other areas have been altered by cutting, filling, or grading. Typically, in undisturbed areas, the surface layer is dark grayish brown loamy sand about 7 inches thick. The subsurface layer is pale brown loamy sand about 10 inches thick. The subsoil to a depth of 78 inches is 20 inches of yellowish brown sandy clay loam; 11 inches of yellowish brown sandy clay loam that has brown and red mottles; and 30 inches of mottled, red, strong brown, yellowish brown, and light gray sandy clay, 10 to 30 percent of which is nodules of plinthite. In disturbed areas the surface layer has been covered by as much as 20 inches of fill material, or as much as two-thirds of the original profile has been removed.

About 40 percent of the complex is Urban land, in which the soils are largely covered by concrete, asphalt, buildings, or other impervious surfaces.

Included with this complex in mapping are small areas of Clarendon, Fuquay, Marlboro, and Norfolk soils. Also included are areas in which the soils have been covered by more than 20 inches of fill material or most or all of the profile has been cut away. The fill material is most commonly from adjacent areas of Dothan soils that have been cut or graded.

In areas of this complex where the soils are relatively undisturbed, the soil is strongly acid or very strongly acid throughout. Organic matter content is low. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part; available water capacity is medium. Runoff is medium to rapid, and the hazard of erosion is moderate to severe.

In areas that are dominated by cuts, fills, and Urban land, soil properties are variable.

Areas that have not been drastically altered include yards and open spaces around and between buildings. In these areas, the soil has medium potential for lawn grasses, shade trees, and ornamental plants common to the area. Areas that have been drastically altered require special attention before vegetation can be established. Onsite investigation is needed to determine the potentials and limitations of this complex for any proposed land use.

The areas of this complex that have not been urbanized have high potential for continued urban development. During development, the areas undergoing construction have a severe hazard of erosion and are sources of sediment unless special precautions are used. Capability subclass not assigned; Dothan part in woodland group 2o, Urban land part not assigned to a woodland group.

FaA—Faceville sandy loam, 0 to 2 percent slopes. This deep, well drained, nearly level soil is on broad ridgetops on the Coastal Plain.

Typically, the surface layer is brown sandy loam about 7 inches thick. The upper 5 inches of the subsoil is yellowish red sandy clay loam. Below this to a depth of 84 inches the subsoil is red sandy clay.

Included with this soil in mapping are small areas of Lucy, Marlboro, and Orangeburg soils. Also included are a few narrow areas along drainageways of soils that have slopes of 2 to 6 percent.

This soil is strongly acid or very strongly acid throughout. Organic matter content is low. Permeability is moderate, available water capacity is medium to high, and runoff is slow. This soil has good tilth and has a very deep root zone that is easily penetrated by plant roots. Most of the acreage is in row crops.

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hazard of erosion is moderate to severe.
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en spaces around and between buildings. In
the soil has medium potential for lawn
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f this complex that have not been urbanized
otential for continued urban development.
opment, the areas undergoing construction
e hazard of erosion and are subject to sedi-
nless special precautions are taken (fig. 4).
ubclass not assigned; Fuquay part in
up 3s, Urban land part not assigned to a
up.

geville silt loam, 2 to 6 percent slopes.
ell drained, gently sloping soil is on smooth,
ops on the Piedmont Plateau.

he surface layer is reddish brown silt loam
s thick. The subsoil to a depth of 72 inches is
d loam; 27 inches of red silty clay; 16 inches
ay loam; and 20 inches of weak red silt loam
nd yellow mottles.

ith this soil in mapping are small areas of
on, and Orange soils. Also included are some
that have bedrock at a depth of 4 to 6 feet,
f soils that have slopes of more than 6 per-
e areas of eroded soils that have a yellowish
loam surface layer about 2 to 3 inches thick.
is very strongly acid or strongly acid
xcept in areas where the surface layer is
ic matter content is low. Permeability is
l available water capacity is medium. Runoff
e root zone is deep and easily penetrated by

s high potential for farming. Erosion is the
rd to the use of this soil for row crops. Con-
n, terracing, and stripcropping help to con-
and one or more of these practices is
eeded. Sericea lespedeza, tall fescue,
d bermudagrass are well suited for hay and

as medium potential for loblolly, slash, and
. Existing stands of hardwood respond to
ment. Limitations for woodland uses are
reseed well on this soil.

s high potential for urban uses. The limita-
urban uses is slight. The clayey subsoil has

e some areas of
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ll wet spots are
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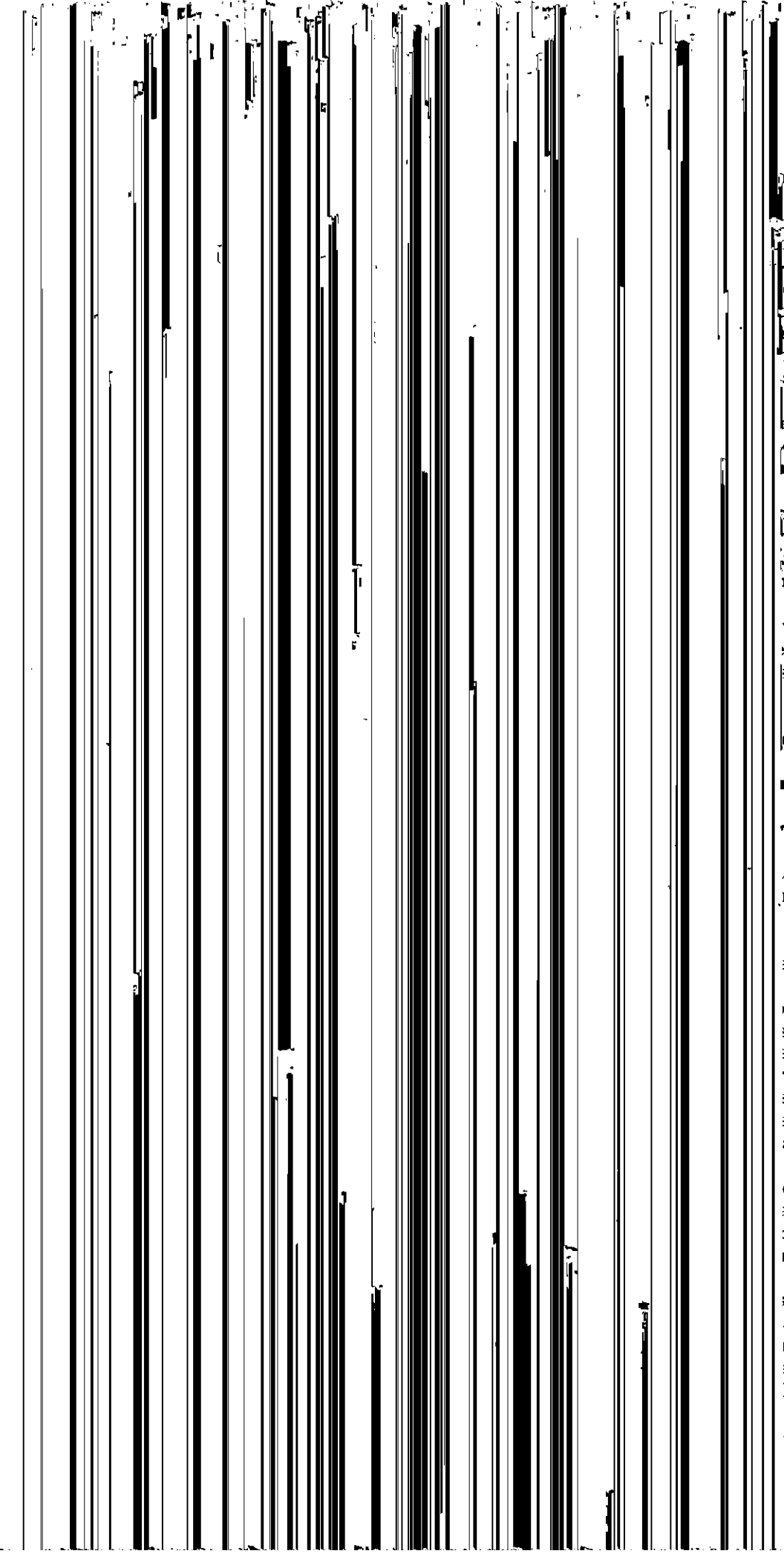

osed by construction this soil is subject comes a source of sediment on lower ial precautions are taken. Capability dland group 3o.

-Urban land complex, 2 to 6 percent ex consists of Herndon soils and Urban ricate pattern that it was not practical n mapping.

nt of this complex consists of Herndon are relatively undisturbed; other areas by cutting, filling, or grading. Typically eas, the surface layer is dark grayish out 4 inches thick. The subsurface layer loam about 5 inches thick. The subsoil of 52 inches. The upper 4 inches of the yellow silt loam; the next 25 inches is clay; and the lower 14 inches is mot- wn, yellowish red, and pale yellow silty nderlying material is red, light gray, and yellowish red highly weathered to silt loam. In disturbed areas the sur- n covered by as much as 20 inches of s much as two thirds of the original moved.

nt of the complex is Urban land in e largely covered by concrete, asphalt, impervious surfaces.

is complex in mapping are small areas ason soils. Also included are areas in e been covered by more than 20 inches most or all of the profile has been cut erial is commonly from adjacent areas at have been cut or graded.

complex where the soils are relatively oils are slightly acid to very strongly layer and strongly acid to extremely oil. Organic matter content is low. derate, and available water capacity is medium to rapid, and the hazard of to severe.

e dominated by cuts, fills, and Urban s are variable.

not been drastically altered include aces around and between buildings. In soil has medium potential for lawn es, and ornamental plants common to at have been drastically altered require before vegetation can be established. n is needed to determine the potentials his complex for any proposed land use. complex that have not been urbanized al for continued urban development. nt, the areas undergoing construction rd of erosion and are sources of sedi- l precautions are used. Capability sub- Herndon part in woodland group 3o, t assigned to a woodland group.

potential for crops. Very low
and low retention of plant
his soil for farming.
al for pines. If planted to slash
lling mortality is common and

tential for urban development.
many urban uses except those
pes, seepage, or ability of the
egetation as lawns, shrubs, and
lization and intensive moisture
irrigation. Capability subclass

to 6 percent slopes. This deep,
ently sloping soil is on saddles
edmont Plateau. Areas are 5 to

yer is light brownish gray loam
subsurface layer is pale yellow
The subsoil extends to a depth
2 inches of the subsoil is very
n, and the lower 10 inches is
ellowish red, and light gray silt
erial is about 20 inches of mot-
yellow, partly weathered slate
k is at a depth of 51 inches.
in mapping are some soils in
ace layer and subsoil are less
re than 40 inches thick. Also in-
f Georgeville and Nason soils.
about 20 to 25 percent of this

d or very strongly acid in the
except in areas where the sur-
nderlying material is strongly
Organic matter content is low.
ly slow, and available water
root zone is moderately deep.
soil is in woodland.
tential for crops. Erosion is the
ent of this soil. Terracing, con-
taining crop residue on the sur-
help to control erosion if these

potential for woodland. The
zone restricts growth rate of

potential for urban uses; slope
e main hazards. Depth to rock
or septic tank absorption fields
ior planning and good designs
tations. Capability subclass IIIe;

2 to 6 percent slopes. This
gently sloping, sandy soil is on
in the Sand Hills.
ayer is dark gray sand about 3
ing material to a depth of 107

pasture or hay,

ine. Some areas
nted to slash or

an uses. Limita-
uses. Slope and
tions. Considera-
of ground water
lanning the low
ral fertility are
land group 4s.

2 to 6 percent
soils and Urban
was not practical

ists of Lakeland
bed; other areas
ading. Typically,
dark gray sand
terial to a depth
2 inches of olive
brown sand. In
n covered by as
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oved.
ban land, where
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are small areas
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ve been covered
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material is com-
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most urban uses can
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soil features as clayey
pability subclass IIIe;

percent slopes. This
ping to steep, well
ese soils are on side
s in the Slate Belt of
such an intricate pat-
o separate them in
merous small streams
es are common.
ex consists of Nason
on soils; about 40 per-
Nason soils but are
about 10 percent is

Jason soils is grayish
The subsurface layer
about 6 inches thick.
1 inches. The upper 8
w silty clay, the next
and has yellow and
ches is yellowish red
nd light gray mottles.

pping are some areas
some areas of soils
r poorly drained and
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v organic matter con-
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The root zone ranges
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eed to be limited.
al for loblolly, slash,
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and much onsite in-

This soil is strongly acid or very strongly acid throughout, except in areas where the surface layer is limed. Organic matter content is low. Permeability is moderate, and available water capacity is medium. The root zone is deep and easily penetrated by plant roots. Runoff is medium, and erosion is a hazard. This soil has good tilth and can be worked throughout a wide range of moisture conditions. Most of the acreage is in cropland.

This soil has high potential for row crops, small grain, hay, and pasture. Crop response is above average when this soil is heavily fertilized and well managed. Crop residue left on the surface helps to maintain good tilth and organic matter content. Contour cultivation, terracing, and stripcropping help to control erosion in cultivated areas, and one or more of these practices is generally needed. Bahiagrass, Coastal bermudagrass, and sericea lespedeza are well suited to hay and pasture.

This soil has high potential for loblolly and slash pine, and management problems are slight. Pines are grown on a small acreage of this soil.

This soil has high potential for urban development. Limitations for most urban uses are slight. Capability subclass IIe; woodland group 2o.

OaB—Orange loam, 0 to 4 percent slopes. This soil is deep, somewhat poorly drained, nearly level and gently sloping. It is in shallow draws, saddles, and smooth convex ridges in the Slate Belt of the Piedmont province. It has a very firm, very plastic subsoil.

Typically, the surface layer is dark grayish brown loam about 9 inches thick. The subsurface layer is light brownish gray loam about 2 inches thick. The subsoil extends to a depth of 40 inches. The upper 4 inches of the subsoil is yellowish brown silt loam; the next 22 inches is light olive brown clay that has brown and gray mottles in the lower part; and the lower 3 inches is mottled gray and brown clay. Below this is gray and brown hard slate bedrock.

Included with this soil in mapping are small areas of Georgeville, Kirksey, and Nason soils and small areas of soils that are similar to this soil except that they have a surface layer of silt loam. Also included are similar soils that have friable clay or silty clay in the upper part of the subsoil and small areas of similar soils that have bedrock at a depth of more than 60 inches.

This soil is strongly acid or medium acid in the surface and subsurface layers and medium acid to neutral in the subsoil. Permeability is slow, and available water capacity is medium to high. Runoff is slow in low areas and medium on side slopes. Wetness and the very firm plastic subsoil is the main concern in management for farming. Erosion is a hazard on sloping areas. Most of the acreage is in woodland, hay, or pasture.

This soil has low potential for row crops and medium potential for hay or pasture. Drainage is necessary to lower the water table and to remove ponded water after rains if this soil is used for pasture or hay. The very firm, plastic subsoil retards root development and the downward movement of water. Dallisgrass, bermu-

[redacted]

About 60 percent of this complex consists of Orangeburg soils. Some areas are relatively undisturbed; other areas have been altered by cutting, filling, or grading. Typically, in undisturbed areas, the surface layer is brown loamy sand about 8 inches thick. The subsurface layer is yellowish brown loamy sand about 4 inches thick. The subsoil to a depth of 18 inches is yellowish red sandy loam. Below this, to a depth of 90 inches, it is yellowish red and red sandy clay loam. In disturbed areas the surface layer has been covered by as much as 20 inches of fill material, or as much as two-thirds of the original profile has been removed.

About 40 percent of the complex is Urban land, in which the soils are largely covered by concrete, asphalt, buildings, or other impervious surfaces.

Included with this complex in mapping are small areas of Faceville, Lucy, and Marlboro soils. Also included are areas in which the soils have been covered by more than 20 inches of fill material or most or all of the profile has been cut away. The fill material is commonly from adjacent areas of Orangeburg soils that have been cut or graded.

In areas of this complex where the soils are relatively undisturbed, the soils are strongly acid or medium acid in the surface and subsurface layers and strongly acid or very strongly acid in the subsoil. Organic matter content is low. Permeability is moderate, and available water capacity is medium. Runoff is medium to rapid, and the hazard of erosion is moderate to severe.

In areas that are dominated by cuts, fills, and Urban land, soil properties are variable.

Areas that have not been drastically altered include yards and open spaces around and between buildings. In these areas the soil has medium potential for lawn grasses, shade trees, and ornamental plants common to the area. Areas that have been drastically altered require special attention before vegetation can be established. Onsite investigation is needed to determine the potentials and limitations of this complex for any proposed land use.

The areas of this complex that have not been urbanized have high potential for continued urban development. During development, the areas undergoing construction have a severe hazard of erosion and are sources of sediment unless special precautions are used. Capability subclass not assigned; Orangeburg part in woodland group 2o, Urban land part not assigned to a woodland group.

OgD—Orangeburg-Urban land complex, 6 to 15 percent slopes. This complex consists of Orangeburg soils and Urban land in such an intricate pattern that it was not practical to separate them in mapping.

About 55 percent of this complex consists of Orangeburg soils. Some areas are relatively undisturbed; other areas have been altered by cutting, filling, or grading. Typically, in undisturbed areas, the surface layer is brown loamy sand about 8 inches thick. The subsurface layer is yellowish brown loamy sand about 4 inches thick. The subsoil to a depth of 18 inches is yellowish red sandy loam. Below this, to a depth of 90 inches, it is yellowish red and red sandy clay loam. In disturbed areas the surface layer has been covered by as much as 20 inches of fill material, or as much as two-thirds of the original profile has been removed.

About 45 percent of the complex is Urban land in which the soils are largely covered by concrete, asphalt, buildings, or other impervious surfaces.

Included with this complex in mapping are small areas of Faceville, Lucy, and Marlboro soils. Also included are areas in which the soils have been covered by more than 20 inches of fill material or most or all of the profile has been cut away. The fill material is most commonly from adjacent areas of Orangeburg soils that have been cut or graded.

In areas of this complex where the soils are relatively undisturbed, the soils are strongly acid or medium acid in the surface and subsurface layers and strongly acid or very strongly acid in the subsoil. Organic matter content is low. Permeability is moderate, and available water capacity is medium. Runoff is medium to rapid, and the hazard of erosion is moderate to severe.

In areas that are dominated by cuts, fills, and Urban land, soil properties are variable.

Areas that have not been drastically altered include yards and open spaces around and between buildings. In these areas the soil has medium potential for lawn grasses, shade trees, and ornamental plants common to the area. Areas that have been drastically altered require special attention before vegetation can be established. Onsite investigation is needed to determine the potentials and limitations of this complex for any proposed land use.

The areas of this complex that have not been urbanized have high potential for continued urban development. During development soils in the areas undergoing construction have a severe hazard of erosion and are a source of sediment unless special precautions are taken. Capability subclass not assigned; Orangeburg part in woodland group 2o, Urban land part not assigned to a woodland group.

PeB—Pelion loamy sand, 2 to 6 percent slopes. This deep, moderately well drained, gently sloping soil is on side slopes and toe slopes, mainly in the Sand Hills. Slopes are both smooth and broken, but most of the lower toe slopes are smooth.

Typically, the surface layer is very dark gray loamy sand about 5 inches thick. The subsurface layer is pale brown loamy sand about 5 inches thick. The subsoil extends to a depth of 48 inches. The upper 8 inches of the subsoil is light yellowish brown firm sandy clay loam; the next 8 inches is pale yellow firm sandy clay loam that has reddish yellow, strong brown, and a few light gray mottles; and the lower 22 inches is very firm sandy clay loam mottled in various shades of yellow, gray, brown, and red. The underlying material to a depth of 75 inches is 9 inches of light gray sandy clay loam that has mottles in various shades of yellow and red and 18 inches of light gray loamy sand that has brownish yellow mottles.

Included with this soil in mapping are a few intermingled areas of Ailey, Fuquay, Johnston, and Rains soils. Also included are a few areas of soils that have slopes of 6 to 10 percent or slopes of less than 2 percent; a few areas of soils that have sandy clay within the upper 20 inches of the subsoil; and a few areas of soils that do not have gray mottles within the upper 24 inches of the subsoil.

This soil is strongly acid or very strongly acid throughout, except in areas where the surface layer is limed. Permeability is moderately slow or slow, and available water capacity is low. Runoff is medium, and erosion is a hazard in cultivated areas. Tilth is poor, and the surface layer remains too wet to cultivate for long periods after rains. The root zone is deep and easily penetrated by tree roots, but the firm, moderately slowly permeable to slowly permeable subsoil retards the rooting of annual plants and the downward movement of water. Most of the acreage is in woodland or abandoned cropland.

This soil has low potential for row crops and medium potential for hay and pasture. Annual plants suffer from droughtiness. Contour farming and leaving crop residue on the surface help to control erosion and improve tilth.

This soil has high potential for loblolly and slash pine.

This soil has medium potential for urban development. Wetness, slow percolation, and low strength are severe limitations for urban uses. These limitations can be overcome by well planned systems for drainage and for the interception of seepage and runoff water. Designs to increase the area of septic tank absorption fields or to provide other alternatives are necessary. Capability subclass IIe; woodland group 2w.

PeD—Pelion loamy sand, 6 to 15 percent slopes. This deep, moderately well drained, sloping to strongly sloping soil is on irregular side slopes and knolls, mainly on the Sand Hills.

Typically, the surface layer is very dark gray loamy sand about 5 inches thick. The subsurface layer is pale brown loamy sand about 5 inches thick. The subsoil extends to a depth of 48 inches. The upper 8 inches of the subsoil is light yellowish brown firm sandy clay loam; the next 8 inches is pale yellow firm sandy clay loam that has mottles of reddish yellow, strong brown, and light gray (few light gray mottles); and the lower 22 inches is very firm sandy clay loam mottled in various shades of yellow, gray, brown, and red. The underlying material to a depth of 75 inches is 9 inches of light gray sandy clay loam that has mottles in various shades of yellow and red and 18 inches of light gray loamy sand that has brownish yellow mottles.

Included with this soil in mapping are some areas of Ailey, Dothan, Fuquay, and Vaucluse soils. Also included are some small areas of soils that have a hard, brittle layer in the subsoil; small areas of soils that have light gray or white kaolin clay extending into the upper part of the subsoil; and small areas of soils that have slope of less than 6 percent.

This soil is strongly acid or very strongly acid throughout, except in areas where the surface layer is limed. Organic matter content is low. Permeability is moderately slow or slow, and available water capacity is low. Runoff is rapid, and erosion is a hazard. Tilth is poor. Tree roots penetrate the root zone, but the firm hard subsoil retards plant roots and downward movement of water. Most of the acreage is in woodland.

The soil has low potential for row crops. Plants suffer from the low available water capacity in the growing season. Erosion is most easily controlled in wooded areas. Where grasses or perennial legumes are desired, strong erosion control measures that include diversions and contouring are needed.

This soil has high potential for loblolly and slash pine. It is better suited to woodland than to most other uses.

This soil has medium potential for urban development. Limitations are severe for urban uses. Major soil alterations, special designs, or intensive maintenance are needed to overcome the limitations of slope, wetness, slow percolation rates, seepage, and low strength of the soil material. Capability subclass VIe; woodland group 2w.

PnC—Pelion-Urban land complex, 2 to 10 percent slopes. This complex consists of Pelion soils and Urban land in such an intricate pattern that it was not practical to separate them in mapping.

About 60 percent of this complex consists of Pelion soils. Some areas are relatively undisturbed; others have been altered by cutting, filling, or grading. Typically, in undisturbed areas, the surface layer is very dark gray loamy sand about 5 inches thick. The subsurface layer is pale brown loamy sand about 5 inches thick. The subsoil extends to a depth of 38 inches. The upper 8 inches of the subsoil is light yellowish brown, firm sandy clay loam; the next 8 inches is pale yellow, firm sandy clay loam that has yellow, strong brown, and a few light gray mottles; and the lower 22 inches is very firm sandy clay loam mottled in shades of yellow, gray, brown, and red. The underlying material to a depth of 75 inches is 9 inches of light gray sandy clay loam mottled in various shades of yellow and red, and 18 inches of light gray loamy sand that has brownish yellow mottles. In disturbed areas the surface layer has been covered by as much as 20 inches of fill material, or as much as two-thirds of the original profile has been removed.

About 40 percent of the complex is Urban land, in which the soils are largely covered by concrete, asphalt, buildings, or other impervious surfaces.

Included with this complex in mapping are small areas of Dothan, Fuquay, Lakeland, and Orangeburg soils and small low areas of soils that are poorly drained, have a high water table, and are frequently flooded (fig. 8). Also included are areas in which the soils have been covered by more than 20 inches of fill material or most or all of the profile has been cut away. The fill material is commonly from adjacent areas of Pelion soils that have been cut or graded.

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land group 2w.

Ra—Rains sandy loam. This deep, nearly level, poorly drained soil is on broad flats and in slight depressions near drainageways.

Typically, the surface layer is very dark gray sandy loam about 8 inches thick. The subsurface layer is grayish brown sandy loam about 4 inches thick. The subsoil to a depth of 68 inches is gray sandy clay loam that has yellowish brown mottles.

Included with this soil in mapping are small areas of Coxville, Cantey, and Johnston soils and a few areas of soils that have a loamy sand or fine sandy loam surface layer.

This soil is strongly acid or very strongly acid throughout, except in areas where the surface layer is limed. Organic matter content is medium. Permeability is moderate, and available water capacity is medium. Runoff is slow, and the water table is at a depth of less than 1 foot during most of the year. From December through March, in most years, this soil is commonly flooded for brief periods. The root zone is deep and easily penetrated by plant roots. Most of the acreage is in woodland.

This soil has medium potential for row crops, hay, and pasture. The high water table limits the use of this soil. Drainage ditches are needed for satisfactory crop production and for pasture management.

This soil has high potential for loblolly and slash pine and for wetland hardwoods, such as sweetgum. Drainage decreases seedling mortality and makes the soil more suitable for use of equipment.

This soil has low potential for urban development. Because of wetness and flooding, limitations are severe for most urban uses. The hazard of wetness can be overcome for certain uses, such as septic tank absorption fields, if the soil can be adequately drained. Capability subclass IIIw; woodland group 2w.

Sm—Smithboro loam. This deep, somewhat poorly drained, nearly level soil is on terraces in the valleys of the Congaree and Wateree Rivers. It is in the Coastal Plain part of the county.

Typically, the surface layer is very dark grayish brown loam about 6 inches thick. The subsoil to a depth of 78 inches is 4 inches of mottled very pale brown loam; 10 inches of mottled brownish yellow, light brownish gray, gray, and yellowish red clay loam; 9 inches of gray clay loam that has red and brown mottles; 38 inches of gray clay that has red, brown, and yellow mottles; and 11 inches of mottled gray, strong brown, and reddish brown silty clay.

Included with this soil in mapping are small areas of Cantey and Persanti soils; some areas of soils that have a sandy loam or silt loam surface layer; and some areas of soils that are less than 30 percent silt in the upper 20 inches of the subsoil. These inclusions make up about 20 percent of the area.

This soil is strongly acid or very strongly acid throughout. Organic matter content is medium. Permeability is slow, and available water capacity is medium to high. Runoff is slow. The slowly permeable subsoil

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way officials, engineers, and many
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, agronomist, Soil Conservation Service,
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nt concerns in the use of the soils
re described in this section. In ad-
ture plants best suited to the soil
em of land capability classification
ervation Service is explained; and
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ented for each soil.
s information about the overall
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hat are needed. The information is
ealers, land improvement contrac-
s, processing companies, planners,
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nent is presented in the section
l planning." Planners of manage-
vidual fields or farms should also
formation given in the description

the South Carolina Soil and Water
ventory (*5*), 14,000 acres was used
, and 62,784 acres for row crops,
and cotton, and for wheat.
and pasture has gradually been
nd more land is used for urban
about 48,577 acres was in urban
127 acres was in urban land in the
eing used for urban land has been
about 3,500 acres per year. The use
help make land use decisions that
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n "General soil map for broad land

jor concern for about 30 percent of
re in Richland County is soil ero-
nore than 2 percent, erosion is a
ville, and Nason soils, for example,
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layer through erosion is damaging
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have a clayey subsoil, such as the
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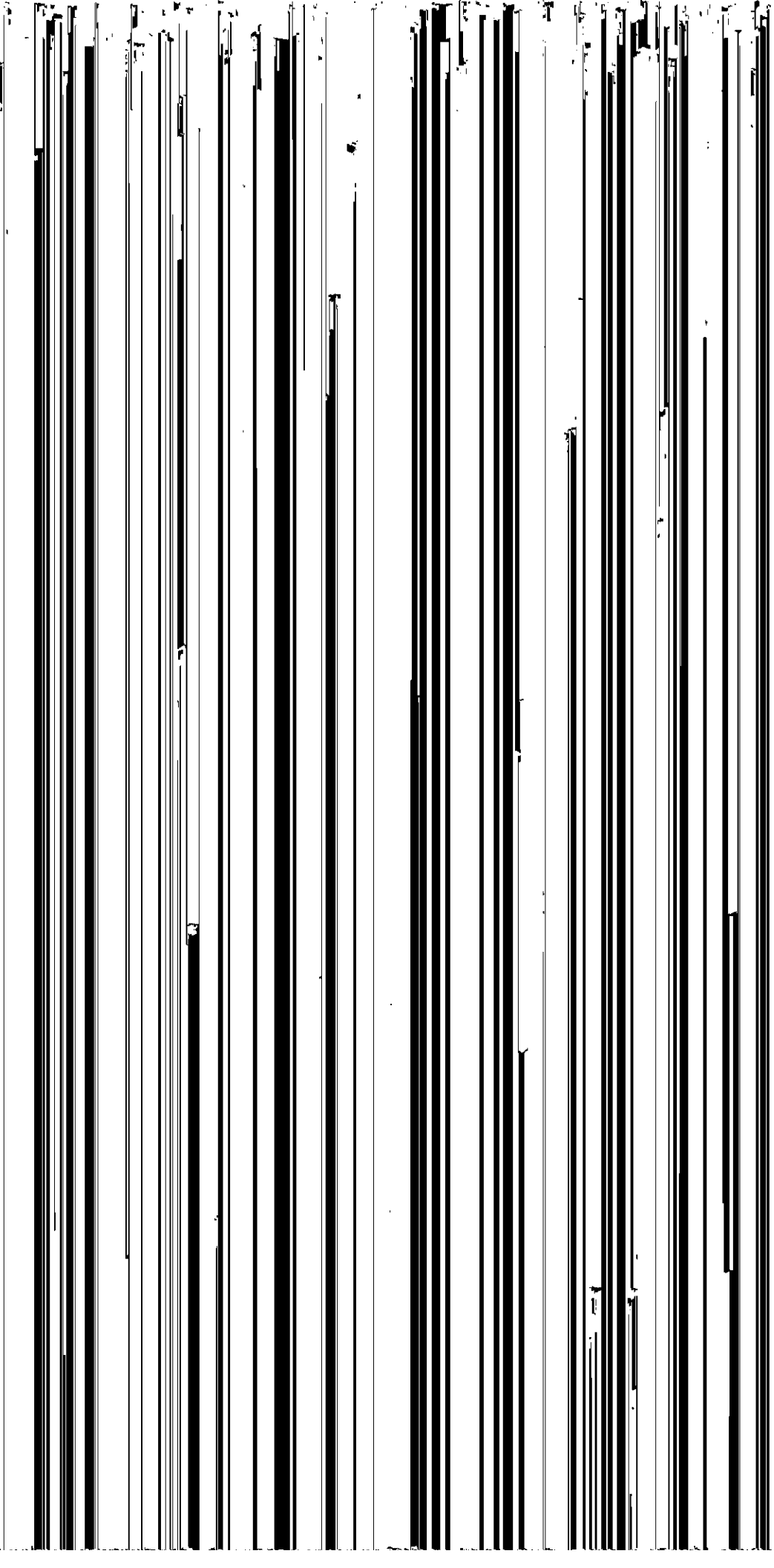

d to dry out slowly after rains. Small
ils along drainageways and in swales
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ially those that have slopes of 2 to 6
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oth surface and subsurface drainage
h the kind of soil. A combination of
d tile drainage is needed in most areas
ed and somewhat poorly drained soils
row cropping. Drains have to be more
ils that have slow permeability than in
le soils. Tile drainage is very slow in
nd Smithboro soils. Finding adequate
open drainage systems is difficult in
tey, Coxville, Chastain, Smithboro, and

dize and subside when the pore space
herefore, special drainage systems are
the depth and the period of drainage.
table at the level required by crops
season and then raising it to the sur-
arts of the year minimize the oxidation
organic soils. Information on drainage
d of soil is contained in the Technical
local offices of the Soil Conservation

reaction. In most soils of the uplands
, soil fertility is naturally low. All but
turally acid. The soils on flood plains,
Chewacla, and Tawcaw, are naturally
ients than most upland soils and range
ery strongly acid. Cantey, Chastain,
soils, in low swales, depressions, and
strongly acid or very strongly acid.
ls are naturally very strongly acid. If
en limed, they require applications of
o raise the reaction (pH) level suffi-
owth of legumes and other crops that
ly neutral soils. Available phosphorus
re naturally low in most of these soils.
ons of lime and fertilizer should be
s of soil tests, on the need of the crop,
d level of yields. The Cooperative Ex-
n help in determining the kinds and
r and lime to apply.
hat have good tilth are granular and
an important factor in the germination
infiltration of water into the soil.
used for crops in the survey area have
my sand surface layer that is light in
ntent of organic matter. Regular addi-
e, manure, and other organic material
soil structure and tilth.
suited to the soils and climate of the
t now commonly grown. Corn, cotton,
ng extent, soybeans are the main row
rown. Grain sorghum, sunflowers, pe-

in table 6 are grown in
yields are not included
os is small. The local of-
ervice and the Coopera-
le information about the
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s

ses show, in a general
ıost kinds of field crops.
o their limitations when
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y respond to treatment.
nto account major and
that would change slope,
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ice, cranberries, horticul-
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uitability and limitations
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ıds of soil are grouped at
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VIII. The numerals in-
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are defined as follows:
ıs that restrict their use.
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groups within one class;
small letter, *e*, *w*, *s*, or *c*,
e, IIe. The letter *e* shows
of erosion unless close-
d; *w* shows that water in
ant growth or cultivation

slopes. The letter *o* indicates insignificant limitations or restrictions. If a soil has more than one limitation, priority in placing the soil into a limitation class is in the following order: x, w, t, d, c, s, f, and r.

In table 8 the soils are also rated for a number of factors to be considered in management. *Slight*, *moderate*, and *severe* are used to indicate the degree of major soil limitations.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well managed woodland. The risk is *slight* if the expected soil loss is small, *moderate* if some measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or equipment; *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings indicate the degree that the soil affects expected mortality of planted tree seedlings. Plant competition is not considered in the ratings. Seedlings from good planting stock that are properly planted during a period of sufficient rainfall are rated. A rating of *slight* indicates that the expected mortality of the planted seedlings is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

The *potential productivity* of merchantable or *important trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years: age 30 for eastern cottonwood, age 35 for American sycamore, and age 50 for pine and other species. The site index applies to fully stocked, even-aged, unmanaged stands. Important trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Trees to plant are those that are suitable for commercial wood production and that are suited to the soils.

Engineering

JAMES D. MARTIN and HOWARD E. MORRISON, engineers, Soil Conservation Service, assisted in preparing this section.

This section provides information about the use of soils for building sites, sanitary facilities, construction material, and water management. Among those who can benefit from this information are engineers, landowners, community planners, town and city managers, land developers, builders, contractors, and farmers.

vestigations, testing, and analysis by expertise in the specific use contem-

is presented mainly in tables. Table 9 d of soil, the degree and kind of limita- ite development; table 10, for sanitary 12, for water management. Table 11 ty of each kind of soil as a source of als.

in the tables, along with the soil map, s, and other data provided in this sur- make additional interpretations and to ive maps for specific uses of land.

ns used in this soil survey have a spe- oil science. Many of these terms are sary.

lopment

kind of soil limitations that affect shal- wellings with and without basements, buildings, and local roads and streets ble 9. A *slight* limitation indicates that nerally are favorable for the specified n is minor and easily overcome. A n indicates that soil properties and site vorable for the specified use, but the e overcome or minimized by special n. A *severe* limitation indicates that one rties or site features are so unfavorable come that a major increase in construc- l design, or intensive maintenance is ie soils rated severe, such costly mea- feasible.

ions are made for pipelines, sewerlines, d power transmission lines, basements, d cemetery plots. Such digging or ienced by soil wetness caused by a er table; the texture and consistence of y of soils to cave in or slough; and the firm, dense soil layers, bedrock, or large n, excavations are affected by slope of probability of flooding. Ratings do not izons below a depth of 6 feet unless

es descriptions, the consistence of each en, and the presence of very firm or ex- zons, usually difficult to excavate, is in-

small commercial buildings referred to lt on undisturbed soil and have founda- velling no more than three stories high. are made for small commercial buildings ts and for dwellings with and without such structures, soils should be suffi- cracking or subsidence of the structure shear failure of the foundation does not ngs were determined from estimates of

between depths of 18 and 72 inches are evaluated for this use. The soil properties and site features considered are those that affect the absorption of the effluent and those that affect the construction of the system.

Properties and features that affect absorption of the effluent are permeability, depth to seasonal high water table, depth to bedrock, and susceptibility to flooding. Stones, boulders, and shallowness to bedrock interfere with installation. Excessive slope can cause lateral seepage and surfacing of the effluent. Also, soil erosion and soil slippage are hazards if absorption fields are installed on sloping soils.

In some soils, loose sand and gravel or fractured bedrock is less than 4 feet below the tile lines. In these soils the absorption field does not adequately filter the effluent, and ground water in the area may be contaminated.

On many of the soils that have moderate or severe limitations for use as septic tank absorption fields, a system to lower the seasonal water table can be installed or the size of the absorption field can be increased so that performance is satisfactory.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons have a nearly level floor and cut slopes or embankments of compacted soil material. Aerobic lagoons generally are designed to hold 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. Soils that are very high in content of organic matter and those that have cobbles, stones, or boulders are not suitable. Unless the soil has very slow permeability, contamination of ground water is a hazard where the seasonal high water table is above the level of the lagoon floor. In soils where the water table is seasonally high, seepage of ground water into the lagoon can seriously reduce the lagoon's capacity for liquid waste. Slope, depth to bedrock, and susceptibility to flooding also affect the suitability of sites for sewage lagoons or the cost of construction. Shear strength and permeability of compacted soil material affect the performance of embankments.

Sanitary landfill is solid waste (refuse) and soil material that is placed in successive layers either in excavated trenches or on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil material. Landfill areas are subject to heavy vehicular traffic. Risk of polluting ground water and trafficability affect the suitability of a soil for this use. The best soils have a loamy or silty texture, have moderate to slow permeability, are deep to a seasonal water table, and are not subject to flooding. Clayey soils are likely to be sticky and difficult to spread. Sandy or gravelly soils generally have rapid permeability, which might allow noxious liquids to contaminate ground water. Soil wetness can be a limitation, because operating heavy equipment on a wet soil is difficult. Seepage into the refuse increases the risk of pollution of ground water.

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ants are goldenrod and beggar-

e associated woody understory
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, or foliage that wildlife eat.
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weetgum, apple, hawthorn, dog-
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bers in parentheses, is given in table 18. The estimated classification, without group index numbers, is given in table 15.

Also in table 15 the percentage, by weight, of rock fragments more than 3 inches in diameter is estimated for each major horizon. These estimates are determined mainly by observing volume percentage in the field and then converting that, by formula, to weight percentage.

Percentage of the soil material less than 3 inches in diameter that passes each of four sieves (U.S. standard) is estimated for each major horizon. The estimates are based on tests of soils that were sampled in the survey area and in nearby areas and on field estimates from many borings made during the survey.

Liquid limit and *plasticity index* indicate the effect of water on the strength and consistence of soil. These indexes are used in both the Unified and AASHTO soil classification systems. They are also used as indicators in making general predictions of soil behavior. Range in liquid limit and plasticity index are estimated on the basis of test data from the survey area or from nearby areas and on observations of the many soil borings made during the survey.

In some surveys, the estimates are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterburg limits extend a marginal amount across classification boundaries (1 or 2 percent), the classification in the marginal zone is omitted.

Physical and chemical properties

Table 16 shows estimated values for several soil characteristics and features that affect behavior of soils in engineering uses. These estimates are given for each major horizon, at the depths indicated, in the typical pedon of each soil. The estimates are based on field observations and on test data for these and similar soils.

Permeability is estimated on the basis of known relationships among the soil characteristics observed in the field—particularly soil structure, porosity, and gradation or texture—that influence the downward movement of water in the soil (*6*). The estimates are for vertical water movement when the soil is saturated. Not considered in the estimates is lateral seepage or such transient soil features as plowpans and surface crusts. Permeability of the soil is an important factor to be considered in planning and designing drainage systems, in evaluating the potential of soils for septic tank systems and other waste disposal systems, and in many other aspects of land use and management.

Available water capacity is rated on the basis of soil characteristics that influence the ability of the soil to hold water and make it available to plants. Important characteristics are content of organic matter, soil texture, and soil structure. Shallow-rooted plants are not likely to use the available water from the deeper soil horizons. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design of irrigation systems.

Soil reaction is expressed as a range in pH values. The range in pH of each major horizon is based on many field checks. For many soils, the values have been verified by laboratory analyses. Soil reaction is important in selecting the crops, ornamental plants, or other plants to be grown; in evaluating soil amendments for fertility and stabilization; and in evaluating the corrosivity of soils.

Shrink-swell potential depends mainly on the amount and kind of clay in the soil. Laboratory measurements of the swelling of undisturbed clods were made for many soils. For others the swelling was estimated on the basis of the kind and amount of clay in the soil and on measurements of similar soils. The size of the load and the magnitude of the change in soil moisture content also influence the swelling of soils. Shrinking and swelling of some soils can cause damage to building foundations, basement walls, roads, and other structures unless special designs are used. A high shrink-swell potential indicates that special design and added expense may be required if the planned use of the soil will not tolerate large volume changes.

Risk of corrosion pertains to potential soil-induced chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to soil moisture, particle-size distribution, total acidity, and electrical conductivity of the soil material. The rate of corrosion of concrete is based mainly on the sulfate content, texture, and acidity of the soil. Protective measures for steel or more resistant concrete help to avoid or minimize damage resulting from the corrosion. Uncoated steel intersecting soil boundaries or soil horizons is more susceptible to corrosion than an installation that is entirely within one kind of soil or within one soil horizon.

Erosion factors are used to predict the erodibility of a soil and its tolerance to erosion in relation to specific kinds of land use and treatment (*9*). The soil erodibility factor (K) is a measure of the susceptibility of the soil to erosion by water. Soils having the highest K values are the most erodible. K values range from 0.10 to 0.64. To estimate annual soil loss per acre, the K value of a soil is modified by factors representing plant cover, grade and length of slope, management practices, and climate. The soil-loss tolerance factor (T) is the maximum rate of soil erosion, whether from rainfall or soil blowing, that can occur without reducing crop production or environmental quality. The rate is expressed in tons of soil loss per acre per year.

Soil and water features

Table 17 contains information helpful in planning land uses and engineering projects that are likely to be affected by soil and water features.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are placed in one of four groups on the basis of the intake of water after the soils have been wetted and have received precipitation from long-duration storms.

the year that the water table commonly is high. Only saturated zones above a depth of 5 or 6 feet are indicated.

Information about the seasonal high water table helps in assessing the need for specially designed foundations, the need for specific kinds of drainage systems, and the need for footing drains to insure dry basements. Such information is also needed to decide whether or not construction of basements is feasible and to determine how septic tank absorption fields and other underground installations will function. Also, a seasonal high water table affects ease of excavation.

Bedrock is shown for all soils that are underlain by bedrock at a depth of 5 to 6 feet or less. For many soils, the limited depth to bedrock is a part of the definition of the soil series. The depths shown are based on measurements made in many soil borings and on other observations during the mapping of the soils. The kind of bedrock and its hardness as related to ease of excavation is also shown. Rippable bedrock can be excavated with a single-tooth ripping attachment on a 200-horsepower tractor, but hard bedrock generally requires blasting.

Engineering test data

The results of analyses of engineering properties of several typical soils of the survey area are given in table 18.

The data presented are for soil samples that were collected from carefully selected sites. The soil profiles sampled are typical of the series discussed in the section "Soil series and morphology." The soil samples were analyzed by the South Carolina Highway Department, Research and Materials Laboratory.

The methods used in obtaining the data are listed by code in the next paragraph. Most of the codes, in parentheses, refer to the methods assigned by the American Association of State Highway and Transportation Officials. The codes for Unified classification are those assigned by the American Society for Testing and Materials.

The methods and codes are AASHTO classification (M-145-66); Unified classification (D-2487-69); mechanical analysis (T88-57); liquid limit (T89-60); plasticity index (T90-56).

Classification of the soils

In this section the soil series of the survey area are described and the current system of classifying soils is defined.

Soil series and morphology

In this section, each soil series recognized in the survey area is described in detail. The descriptions are arranged in alphabetic order by series name.

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The solum ranges from 38 to 50 inches in thickness. It is very strongly acid to medium acid throughout. Bedrock is 40 to 50 inches deep and directly underlies the B2t, B3, or C horizon.

The A horizon is 5 to 8 inches thick. It is brown, dark brown, or grayish brown loam or silt loam.

The B2t horizon is 30 to 40 inches thick. The upper part is brownish yellow, yellowish brown, or light yellowish brown or in some pedons it is mottled with combinations of those colors and also yellowish red, red, and strong brown. The lower part has mottles of light gray, gray, or grayish brown. The B2t horizon is silt loam, loam, silty clay loam, or clay loam. The silt content is more than 30 percent. A B3 horizon is present in some pedons. It is 6 to 9 inches thick and is mottled strong brown, yellowish brown, brownish yellow, and light gray. It is loam or sandy clay loam.

The C horizon, where present, is light gray or is light gray mottled with yellowish brown or strong brown. It is loam, silt loam, sandy clay loam, or clay. Its content of rounded pebbles ranges from 0 to 50 percent. These soils contain slightly more silt than is defined in the range for the series. Behavior, use, and management, however, remained unchanged.

Blanton series

The Blanton series consists of deep, moderately well drained, moderately permeable, nearly level or gently sloping soils that formed in sandy and loamy marine sediment. These soils are on Coastal Plain uplands. They have sandy surface and subsurface layers that extend to a depth of 45 to 80 inches.

Blanton soils are closely associated on the landscape with Lakeland, Troup, Ailey, Fuquay, and Lucy soils. Lakeland soils are sandy to a depth of 80 inches or more. Troup soils do not have gray mottles in the B horizon. Ailey, Fuquay, and Lucy soils have a sandy A horizon less than 40 inches thick. In addition, Ailey soils have a fragipan in the B horizon, and Fuquay soils have plinthite in the lower part of the B horizon.

Typical pedon of Blanton sand, 0 to 6 percent slopes, about 2 miles north of Columbia city limits on secondary road 1560, 400 feet southwest of its intersection with S. C. Highway 83, 200 feet north of road:

A1—0 to 9 inches; dark grayish brown (10YR 4/2) sand; single grained; loose; common fine roots; medium acid; abrupt smooth boundary.

A21—9 to 21 inches; pale yellow (2.5Y 7/4) sand; single grained; loose; common fine roots; many uncoated sand grains; strongly acid; gradual wavy boundary.

A22—21 to 50 inches; very pale brown (10YR 7/4) sand; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

B21t—50 to 61 inches; brownish yellow (10YR 5/6) sandy clay loam; common medium prominent reddish yellow (5YR 6/6) mottles; weak medium subangular blocky structure; friable; few fine pores; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

B22t—61 to 96 inches; mottled light gray (10YR 7/2), brownish yellow (10YR 6/6), reddish yellow (7.5YR 6/6), yellowish red (5YR 5/6), and red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; firm; patchy faint clay films on faces of peds; very strongly acid.

The solum ranges from 73 to more than 100 inches in thickness. It is medium acid to very strongly acid in the A horizon and is strongly acid or very strongly acid in the B horizon.

The A horizon is 45 to 80 inches thick. The Ap or A1 horizon is yellowish brown, brown, or dark grayish brown and is 3 to 10 inches thick. The A2 horizon is brownish yellow, yellow, pale yellow, very pale brown, yellowish brown, or light yellowish brown sand or loamy sand. It is 40 to 72 inches thick. The A3 horizon, where present, is strong brown loamy sand about 5 inches thick.

The B1 horizon, where present, is pale brown sandy loam and is about 5 inches thick. The B2t horizon is sandy loam or sandy clay loam and is 20 to more than 50 inches thick. It is mottled in various shades of gray, yellow, brown, and red or is brownish yellow.

Cantey series

The Cantey series consists of deep, poorly drained, slowly permeable, nearly level soils that formed in clayey marine sediment. These soils are on stream terraces.

Cantey soils are closely associated on the landscape with Coxville, Goldsboro, Johnston, Persanti, and Smithboro soils. Coxville soils have less than 45 percent clay in the Bt horizon and are on Coastal Plain uplands. Goldsboro soils are at slightly higher elevations on terraces, are better drained, and have a fine-loamy control section. Johnston soils are along streams, are very poorly drained, and have a coarse-loamy control section. Persanti and Smithboro soils are at slightly higher elevations on terraces and are better drained. They do not have dominant gray colors of chroma 2 or less in the upper part of the B horizon.

Typical pedon of Cantey loam, in woods, about 1.0 mile east of Kingville and 2.2 miles west of Wateree, 700 feet north of secondary road 1032 and 200 feet west of a private road:

A1—0 to 5 inches; very dark gray (10YR 3/1) loam; weak medium granular structure; friable; many fine, medium, and large roots; very strongly acid; clear smooth boundary.

B1—5 to 8 inches; light brownish gray (10YR 6/2) sandy loam; many medium distinct brownish yellow (10YR 6/6) mottles; weak fine subangular blocky structure; firm, slightly sticky; many fine, medium, and large roots; very strongly acid; abrupt smooth boundary.

B21tg—8 to 40 inches; gray (10YR 6/1) clay; many medium distinct yellowish brown (10YR 5/6) and common medium prominent yellowish red (5YR 4/8) mottles; a few medium prominent red (10R 4/8) mottles below a depth of 30 inches; strong coarse angular blocky structure parting to fine angular blocky; very firm, very sticky and very plastic; thick continuous clay films on faces of peds; common fine roots penetrate the peds; very strongly acid; gradual smooth boundary.

B22tg—40 to 57 inches; gray (10YR 6/1) clay; many coarse distinct yellowish brown (10YR 5/8) mottles; strong coarse angular blocky structure parting to fine angular blocky; very firm, very sticky and very plastic; thick continuous clay films on faces of peds; few medium roots; very strongly acid; abrupt smooth boundary.

B3g—57 to 81 inches; coarsely mottled pale brown (10YR 6/3), brownish yellow (10YR 6/8), and light gray (10YR 7/1) sandy clay loam; moderate coarse angular blocky structure; very firm, sticky; thick discontinuous clay films on faces of peds; few old roots and root channels; much dryer than the B22tg horizon; very strongly acid.

The solum ranges from 60 inches to more than 80 inches in thickness. It is very strongly acid or strongly acid throughout.

The A horizon is 4 to 13 inches thick. The A1 horizon is 4 to 8 inches thick and is black, dark gray, very dark gray, dark grayish brown, or very dark grayish brown. The A2 horizon, where present, is 4 to 5 inches thick and is gray, light gray, or light brownish gray loam or sandy loam.

The B1 horizon, where present, is about 3 inches thick and is gray or light brownish gray sandy loam or sandy clay loam. The B2tg horizon is 40 to more than 70 inches thick. It is gray or light gray clay or sandy clay and has few to many mottles in shades of yellowish brown or red. The B3g horizon is sandy clay loam or sandy clay 14 to 28 inches thick. It is gray or is mottled in shades of gray and brown.

Chastain series

The Chastain series consists of deep, nearly level, poorly drained, slowly permeable soils that formed in clayey alluvial sediment. These soils are on broad flood plains of the Wateree and Congaree Rivers. They are commonly flooded and are saturated with water for 5 months or more in most years.

Chastain soils are closely associated on the landscape with the Chewacla, Congaree, Dorovan, Tawcaw, and Toccoa soils. Chewacla, Congaree, Tawcaw, and Toccoa soils are on higher elevations, are better drained, and do not have dominant chroma of 2 or less. Dorovan soils are organic.

Typical pedon of Chastain silty clay loam in woods, approximately 4 miles southeast of Columbia city limits on S.C. Highway 48, 0.4 mile west of intersection of S.C. Highway 48 and secondary road 48:

A1—0 to 4 inches; grayish brown (2.5Y 5/2) silty clay loam; many fine distinct dark yellowish brown and common fine prominent strong brown mottles; weak fine subangular blocky structure; friable, sticky and plastic; many large, medium, and fine roots; strongly acid; abrupt smooth boundary.

B21g—4 to 18 inches; greenish gray (5BG 6/1) silty clay loam; many fine prominent dark yellowish brown and common medium prominent yellowish brown (10YR 5/6) mottles; weak medium angular and subangular blocky structure; friable, sticky and plastic; common medium roots; strongly acid; abrupt smooth boundary.

B22g—18 to 41 inches; greenish gray (5BG 5/1) silty clay; many coarse prominent dark yellowish brown (10YR 4/4) and common medium prominent yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm, very sticky and very plastic; strongly acid; abrupt smooth boundary.

Cg—41 to 65 inches; greenish gray (5BG 5/1) clay; common medium distinct olive (5Y 5/3) and common fine prominent yellowish brown mottles; massive; very firm, very sticky and very plastic; strongly acid; gradual smooth boundary.

IICg—65 to 82 inches; light brownish gray (2.5Y 6/2) loamy sand; few medium distinct greenish gray (5BG 5/1) mottles; structureless; very friable; slightly acid.

The solum ranges from 40 inches to more than 60 inches in thickness. It is strongly acid or very strongly acid throughout.

The A horizon is 4 to 9 inches thick. It is dark grayish brown, grayish brown, brownish gray, or brown.

The Bg horizon is 36 to 52 inches thick. It is gray, light gray, light brownish gray, greenish gray, or grayish brown and has distinct or prominent mottles in shades of brown. It is silty clay loam, clay loam, silty clay, or clay.

The Cg horizon is grayish brown, gray, or greenish gray. Above a depth of about 60 inches, it is clay, silty clay, or silty clay loam, and below this it is sand or loamy sand in 60 percent of the pedons.

Chewacla series

The Chewacla series consists of deep, nearly level, moderately permeable, somewhat poorly drained soils that formed in loamy alluvial sediment washed from the Piedmont province.

Chewacla soils are closely associated on flood plains with Chastain, Congaree, Tawcaw, Toccoa, and Dorovan soils. Chastain soils are at lower elevations and in depressions and have a gray B horizon. Congaree and Toccoa soils are at slightly higher elevations and are better drained; they do not have chroma of 2 or less at a depth of less than 20 inches. In addition, Toccoa soils have a coarse-loamy control section. Tawcaw soils have a clayey control section. Dorovan soils are organic.

Typical pedon of Chewacla loam, approximately 3 miles southeast of Columbia, 1 mile west of the intersection of S.C. Highway 48 and secondary road 48, and 1 mile northeast of a sewage treatment plant:

Ap—0 to 7 inches; brown (10YR 4/3) loam; weak fine granular structure; friable, slightly sticky; common fine roots; few fine pores; many fine flakes of mica; slightly acid; abrupt smooth boundary.

B21—7 to 13 inches; yellowish brown (10YR 5/4) clay loam; common medium distinct black (10YR 2/1), many fine faint yellowish brown (10YR 5/6), and few fine faint light yellowish brown mottles; weak fine subangular blocky structure; friable, slightly sticky; many fine flakes of mica; slightly acid; abrupt smooth boundary.

B22—13 to 20 inches; mottled yellowish brown (10YR 5/4), strong brown (7.5YR 5/6), pale brown (10YR 6/3), and black (10YR 2/1) clay loam; weak medium subangular blocky structure; friable, slightly sticky; brown (10YR 5/3) silt coatings on large vertical cracks; many fine flakes of mica; medium acid; clear smooth boundary.

B23—20 to 38 inches; yellowish brown (10YR 5/4) loam; many coarse distinct yellowish red (5YR 4/8), common medium distinct black (10YR 2/1), and common fine distinct light gray mottles; weak medium subangular blocky structure; friable, nonsticky; thick yellowish brown (10YR 5/4) silt coatings on large vertical cracks; many fine flakes of mica; medium acid; gradual smooth boundary.

B24—38 to 50 inches; dark yellowish brown (10YR 4/4) loam; many coarse distinct pale brown (10YR 6/3), common medium distinct light gray (10YR 7/1), and few fine distinct black mottles; weak medium subangular blocky structure; friable, nonsticky; pale brown (10YR 6/3) mottles fill old cracks; medium acid; gradual smooth boundary.

B3—50 to 58 inches; dark yellowish brown (10YR 4/4) clay loam; many medium distinct light gray (10YR 7/2) and few fine distinct black mottles; massive; friable, slightly sticky; many fine flakes of mica; medium acid; gradual smooth boundary.

C—58 to 75 inches; mottled dark yellowish brown (10YR 4/4) and light gray (10YR 7/2) loam; massive; friable, nonsticky; many fine flakes of mica; medium acid.

The solum ranges from 50 inches to more than 72 inches in thickness. Content of fine flakes of mica ranges from few to many throughout it. The pedon is strongly acid to slightly acid throughout.

The A1 or Ap horizon is brown or dark brown and is 3 to 10 inches thick.

The B horizon is loam, silt loam, clay loam, or silty clay loam and is 47 to more than 70 inches thick. The upper part of it is yellowish brown, brown, dark brown, or reddish brown; or it is mottled in various shades of red, brown, and yellow. The lower part of the B horizon is dark yellowish brown, yellowish brown, or brown and has common to many mottles in various shades of gray; or it is mottled in various shades of red, yellow, brown, and gray; or it is gray, light brownish gray, or grayish brown and has few to many mottles in various shades of red, brown, and yellow.

The C horizon is gray and has common or many mottles in various shades of brown; or it is mottled in various shades of brown and gray. It is loam or sandy loam.

Clarendon series

The Clarendon series consists of deep, nearly level, moderately slowly permeable, moderately well drained soils that formed in loamy marine sediment. These soils are on Coastal Plain uplands. They contain plinthite.

Clarendon soils are closely associated on the landscape with Dothan, Fuquay, Goldsboro, Marlboro, Norfolk, and Rains soils. They are on the same uplands as Dothan,

Marlboro, and Norfolk soils but are not so well
have chroma of 2 or less above a depth of 30
d are at slightly lower elevations. Fuquay soils
hicker and sandier A horizon than Clarendon
endon soils have plinthite in the Bt horizon and
boro soils do not. Goldsboro soils are generally
elevations on marine terraces. Clarendon soils
drained than Rains soils, which are dominantly
e B horizon and do not have plinthite.

pedon of Clarendon sandy loam, 1.7 miles
of Gadsden and 3 miles southwest of Eastover,
of Toms Creek and 700 feet south of a road
secondary roads 84 and 1322:

inches; dark grayish brown (10YR 4/2) sandy loam; weak
nular structure; friable, nonsticky; many fine roots; strongly
upt smooth boundary.
inches; pale brown (10YR 6/3) sandy loam; weak fine granu-
ture; friable, nonsticky; many fine roots; many fine pores;
ongly acid; abrupt smooth boundary.
9 inches; pale brown (10YR 6/3) sandy loam; many fine
yellowish brown mottles; weak medium subangular blocky
e; friable, slightly sticky; many fine pores; a few of the yel-
rown mottles are brittle; strongly acid; clear smooth boun-

25 inches; mottled yellowish brown (10YR 5/8) and very
wn (10YR 7/3) sandy clay loam; few medium distinct strong
7.5YR 5/8) and yellowish red (5YR 4/8) mottles; weak medi-
ngular blocky structure; friable, slightly sticky; thin patchy
ns on faces of peds and in pores; many fine pores; very
acid; clear smooth boundary.
36 inches; mottled yellowish brown (10YR 5/8), very pale
10YR 7/3), strong brown (7.5YR 5/8), red (2.5YR 4/8), and
y (10YR 6/1) sandy clay loam; approximately 30 percent is
ay; moderate medium subangular blocky structure; hard,
m, slightly sticky; about 25 to 30 percent nodules of
; many thin discontinuous clay films; very strongly acid;
smooth boundary.
51 inches; coarsely mottled light gray (10YR 6/1), yellowish
10YR 5/6), strong brown (7.5YR 5/8), and yellowish red
8) sandy clay loam; approximately 50 percent is light gray;
oarse subangular blocky structure; hard, very firm, slightly
ew thin discontinuous clay films; about 25 to 30 percent
of plinthite; very strongly acid; clear smooth boundary.
61 inches; light gray (10YR 6/1) sandy clay loam; many
ominent yellowish brown (10YR 5/8), strong brown (7.5YR
(2.5YR 4/8), and yellowish red (5YR 4/8) mottles; most
terial is sandy clay; moderate coarse subangular blocky
; hard, firm, sticky; few 10 to 30 millimeter rounded peb-
quartz; 5 to 10 percent nodules of plinthite; very strongly
dual smooth boundary.
72 inches; coarsely mottled light gray (10YR 7/1), white
/1), light red (10R 6/6), and brownish yellow (10YR 6/8)
y loam and coarse sandy loam; about 60 percent is light
white; weak coarse subangular blocky structure; slightly
able; some firm, sticky sandy clay loam and sandy clay
few coarse and many fine (2 to 5 millimeters) uncoated
quartz pebbles; many grains of kaolin clay; very strongly

ranges from 60 to more than 80 inches in thickness. It is
or very strongly acid throughout, except in areas where
yer is limed.
zon is 6 to 12 inches thick. The Ap horizon is 5 to 8 inches
k grayish brown, very dark grayish brown, brown, or light
wn. The A2 horizon, where present, is 3 to 8 inches thick.
own, light yellowish brown, or light gray sandy loam or

The B1 horizon, where present, is 5 to 9 inches thick and is pale brown, light yellowish brown, or yellowish brown. The B2t horizon is 40 inches to more than 60 inches thick. The upper part is light yellowish brown, yellowish brown, or light olive brown or is mottled in shades of brown, red, and yellow. The lower part is mottled in various shades of red, yellow, brown, and gray. The B2t horizon is commonly sandy clay loam but in places ranges to sandy clay below a depth of 40 inches. It is 5 to 30 percent nodules of plinthite. The B3 horizon is 8 to 20 inches thick. It is mottled light gray, white, light red, and brownish yellow. It is sandy clay loam, sandy loam, or sandy clay.

Congaree series

The Congaree series consists of deep, well drained or moderately well drained, moderately permeable soils that formed in loamy alluvial sediment washed from soils of the Piedmont province. Slopes range from 0 to 2 percent.

Congaree soils are closely associated on flood plains with Chastain, Chewacla, Tawcaw, and Toccoa soils. They are at slightly higher elevations and are better drained than Chastain, Chewacla, and Tawcaw soils, which have gray colors above a depth of 20 inches. Toccoa soils have a coarse-loamy control section.

Typical pedon of Congaree loam, in a field, 2.5 miles south of Farmers Market, 0.5 mile east of the Congaree River, 100 feet east of a field road:

Ap—0 to 8 inches; dark brown (7.5YR 4/4) loam; weak fine granular structure; friable; many fine roots; common worm casts; many fine flakes of mica; strongly acid; clear smooth boundary.

C1—8 to 18 inches; dark brown (10YR 4/3) loam; massive; friable; many fine roots; many fine pores; few worm casts; many fine flakes of mica; medium acid; gradual wavy boundary.

C2—18 to 22 inches; dark brown (10YR 3/3) loam; massive; friable; many fine roots; few fine pores; few worm casts; common 1/4 inch wide horizontal lenses of light yellowish brown (10YR 6/4) loamy fine sand; few fine flakes of mica; medium acid; clear smooth boundary.

C3—22 to 32 inches; dark brown (10YR 3/3) very fine sandy loam; massive; friable; many fine roots; many fine pores; many fine flakes of mica; few thin lenses of loamy fine sand; few fine fragments of charcoal; medium acid; diffuse wavy boundary.

Ab—32 to 38 inches; very dark grayish brown (10YR 3/2) loam; weak fine granular structure; friable; many fine roots; many fine pores; few worm casts; many fine flakes of mica; medium acid; gradual wavy boundary.

Bb—38 to 62 inches; brown (7.5YR 4/4) silty clay loam; moderate coarse prismatic and subangular blocky structure; friable; few fine roots; many fine and medium pores; patchy silt coatings on vertical ped faces; common fine flakes of mica; medium acid; gradual smooth boundary.

C4—62 to 80 inches; mottled strong brown (7.5YR 5/8), brown (10YR 5/3), and pale brown (10YR 6/3) clay loam; massive; friable; common fine flakes of mica; common 1 to 2 millimeter very dark brown and black concretions; strongly acid.

Bedrock is commonly more than 10 feet deep. Reaction ranges from strongly acid to neutral throughout the pedon but is medium acid to neutral in some part between depths of 10 and 40 inches. Few to many flakes of mica are throughout the pedon. Buried A or B horizons occur in some pedons. Below a depth of 40 inches texture ranges from loamy sand to silty clay.

The Ap or A1 horizon is brown, dark brown, or reddish brown and is 5 to 10 inches thick.

The C horizon is yellowish brown, brown, strong brown, reddish brown, or dark brown, and in some pedons at a depth of more than 20 inches it has few to many mottles with chroma of 2 or less. It is loam, silt loam, fine sandy loam, or silty clay loam but in some pedons has thin strata that are sandier or more clayey. The texture below a depth of 40 inches ranges from loamy sand to silty clay.

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to 12 inches; yellowish red (5YR 4/8) sandy clay loam; weak medi- subangular blocky structure; friable; common fine roots; very ongly acid; clear smooth boundary.
2 to 84 inches; red (2.5YR 4/6) sandy clay; weak medium suban- lar blocky structure; friable; thin patchy clay films on faces of me peds and in pores; common fine and medium roots; many fine res; strongly acid.

solum ranges from 65 to more than 80 inches in thickness. It is y acid or very strongly acid throughout.
Ap horizon is 4 to 10 inches thick and is brown, dark yellowish or yellowish red.
B1 horizon, where present, is 5 to 9 inches thick and is red, yel- red, or reddish brown. The B2t horizon is 50 inches to more than es thick and is red or yellowish red clay, sandy clay, or clay loam.

ay series

e Fuquay series consists of deep, well drained, y permeable soils that formed in sandy and loamy ie sediment. These soils are on broad and narrow tops on the Coastal Plain. Slopes range from 0 to 6 nt.

quay soils are closely associated on the landscape Ailey, Blanton, Clarendon, Dothan, Pelion, and Troup Ailey, Blanton, Pelion, and Troup soils do not have ite in the Bt horizon. In addition, Blanton and Troup nave a sandy A horizon 40 to 80 inches thick. Dothan have a sandy A horizon less than 20 inches thick. ndon and Pelion soils are at slightly lower eleva- have chroma of 2 or less in the upper part of the Bt on, and have an A horizon less than 20 inches thick.
pical pedon of Fuquay sand, 0 to 2 percent slopes, in d about 2.6 miles southeast of Gadsden, 0.5 mile of intersection of S.C. Highway 48 and secondary 489, 30 feet east of road 489:

to 8 inches; grayish brown (2.5Y 5/2) sand; weak fine granular ucture; very friable; many fine and medium roots; strongly acid; rupt smooth boundary.
to 35 inches; light yellowish brown (10YR 6/4) sand; weak fine anular structure; very friable; common fine and medium roots; ry strongly acid; clear smooth boundary.
35 to 44 inches; yellowish brown (10YR 5/6) sandy clay loam; few edium prominent yellowish red (5YR 4/8) mottles; the yellowish l material is firm; weak medium subangular blocky structure; fri- le; sand grains coated and bridged with clay; common fine and edium roots; many fine pores; few fine pebbles of quartz; very ongly acid; clear smooth boundary.
44 to 48 inches; yellowish brown (10YR 5/6) sandy clay loam; ny medium prominent yellowish red (5YR 4/8), common medium tinct light yellowish brown (10YR 6/4), and few medium distinct ong brown (7.5YR 5/6) mottles; the yellowish red material is firm l brittle; weak medium subangular blocky structure; friable; thin continuous clay films on faces of peds; few medium roots; com- n fine pores; few fine pebbles of quartz; 10 to 15 percent nodules plinthite; very strongly acid; abrupt smooth boundary.
48 to 58 inches; mottled light yellowish brown (10YR 6/4), strong own (7.5YR 5/6), red (2.5YR 4/8), and light brownish gray (10YR) sandy clay loam; the red and strong brown material is firm and ttle plinthite; moderate medium subangular blocky structure; m; thin discontinuous clay films on faces of peds; few medium ots; few fine pores; few fine pebbles of quartz; 20 to 30 percent lules of plinthite; very strongly acid; gradual smooth boundary.

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horizon, where present, is 7 to 9 inches thick and is yellowish loam. The B2t horizon is 32 inches to more than 50 inches is red or yellowish red sandy loam or sandy clay loam.

ro series

Marlboro series consists of deep, well drained, ely permeable soils that formed in thick clayey sediment. They are on broad smooth ridges on the Plain. Slopes are 0 to 6 percent.

oro soils are closely associated on the landscape xville, Dothan, Faceville, Norfolk, and Orangeburg xville soils are poorly drained and are in depres- othan, Norfolk, and Orangeburg soils have less the B horizon than Marlboro soils; in addition, soils have plinthite in the lower part of the B and Orangeburg soils have a redder B horizon arlboro soils. Faceville soils have a redder B than Marlboro soils.

al pedon of Marlboro sandy loam, 2 to 6 percent n a field, about 3 miles southeast of Columbia, 0.8 rthwest of intersection of U.S. Highway 76 and y road 222, 50 feet north of U.S. Highway 76:

8 inches; dark grayish brown (10YR 4/2) sandy loam; weak ranular structure; friable; many fine roots; many fine pores; y acid; abrupt smooth boundary.

33 inches; yellowish brown (10YR 5/6) clay loam; weak medi- bangular blocky structure; friable; common fine roots; com- ine pores; medium acid; gradual smooth boundary.

o 42 inches; coarsely mottled yellowish brown (10YR 5/6) and ish red (5YR 4/8) sandy clay; weak medium subangular structure; firm; few thin discontinuous clay films; few fine strongly acid; gradual smooth boundary.

to 64 inches; yellowish red (5YR 4/8) sandy clay; common m prominent brownish yellow (10YR 6/6) and few medium t light gray (10YR 7/2) and very pale brown (10YR 7/3) mot- weak medium subangular blocky structure; firm; few fine strongly acid; gradual smooth boundary.

o 80 inches; coarsely mottled red (2.5YR 5/6), brownish yellow 6/6), very pale brown (10YR 7/4), and light gray (10YR 7/2) veak medium subangular blocky structure; firm; strongly acid.

m ranges from 70 inches to more than 80 inches in thickness. izon is strongly acid or medium acid except where the soil has . The Bt horizon ranges from strongly acid to slightly acid in part and from very strongly acid to medium acid in the lower

horizon is 5 to 8 inches thick and is brown or dark grayish e A2 horizon, where present, is 4 or 5 inches thick and is yel- wn sandy loam.

horizon is 65 inches to more than 72 inches thick. The upper e B2t horizon is yellowish brown or strong brown clay loam, , or clay. The lower part of the B2t horizon is sandy clay loam, , or clay that is strong brown, yellowish red, or red and has shades of brown and gray or is mottled in a combination of s.

eries

Nason series consists of deep, well drained, ely permeable soils that formed in residuum d from the Carolina slate. These soils are on d narrow upland ridges and on side slopes in the t province. Slopes range from 2 to 30 percent.

closely associated on the landscape
Coxville, Dothan, Fuquay, Goldsboro,
g, and Rains soils. Clarendon, Gold-
Rains soils are more poorly drained
vations in the same positions on the
, Dothan, and Fuquay soils have
plinthite in the Bt horizon. Marlboro
ntrol section. Orangeburg soils have
an Norfolk soils.

Norfolk loamy sand, 0 to 2 percent
l field, about 1.0 mile south of East-
f intersection of secondary roads 56
e of a field road and 250 feet north
on line:

grayish brown (10YR 4/2) loamy sand; weak
cture; friable; many fine roots; strongly acid;
ry.
wish brown (10YR 5/4) loamy sand; weak fine
ry friable; common fine roots; few uncoated
rongly acid; abrupt smooth boundary.
wish brown (10YR 5/8) sandy clay loam; weak
locky structure; friable; common fine roots;
ns of sand coated and bridged with clay; very

70 inches to more than 85 inches in thickness.
strongly acid throughout, except where the

0 inches thick. It is brown, grayish brown, or
A2 horizon, where present, is 3 to 8 inches
brown, yellowish brown, pale brown, or very

present, is 3 to 8 inches thick. It is yellowish
2t horizon is 53 inches to more than 75 inches
wn, brownish yellow, or strong brown sandy
In some pedons the lower part of the B2t
d, yellowish red, strong brown, brownish yel-

consists of deep, slowly permeable,
ained soils that formed in material
olina slate in the Piedmont province.
to 4 percent.
closely associated on the landscape
erndon, Kirksey, and Nason soils.
similar positions on the landscape to
t slightly lower elevations in smooth,
vs. Orange soils are more poorly
ville, Herndon, and Nason soils and
o 24 inches below the top of the B2t
on of Kirksey soils contains less than

Orange loam, 0 to 4 percent slopes, in
s northwest of Columbia, 1.3 miles
ge road from intersection of Piney
erstate 26, 1,000 feet northeast of In-

grayish brown (10YR 4/2) loam; weak fine
very friable; many fine, medium, and large
brupt smooth boundary.

20 inches thick.
pan.
sand, 2 to 6 per-
t 2 miles north of
hway 263, 0.4 mile
way 601:

nd; weak fine granular
nmon fine pores; medi-

loamy sand; weak fine
e roots; medium acid;

dy loam; weak fine sub-
fine roots; many fine

sandy clay loam; weak
grains of sand bridged
s; common fine pores;

y loam; weak fine sub-
sand bridged with clay;
ıe pores; very strongly

) and red (2.5YR 4/8)
structure; friable; few
; gradual smooth boun-

ndy clay loam; few fine
gular blocky structure;

115 inches in thickness.
on and strongly acid or

or Ap horizon is 2 to 9
vn, dark grayish brown,
rizon, where present, is
r yellowish brown. The
thick and is yellowish

s thick and is yellowish
izon is 39 to 100 inches
es is sandy clay in the
r has no mottles or has

, moderately well
or slowly permea-
marine sediment.
le slopes and toe
the Coastal Plain.

the landscape with
ton, Lakeland, and
lly at lower eleva-
nd Lakeland soils.
soils but at lower
ns than Johnston
s have a sandy A
than soils have a
percent or more
drained and have
soils are sandy

f deep, moderately well
that formed in clayey
on the Coastal Plain on
e dominantly less than 2

ciated on the landscape
angeburg, Rains, and
are better drained than
oils and are at slightly
itions on the landscape.
red B horizon than Per-
burg soils are at slightly
soils and have a coarser
Orangeburg soils are well

ry fine sandy loam, in
le, 1.0 mile southwest of
of private road:

ry fine sandy loam; weak fine
; many fine and large roots;
y.
R 5/8) sandy clay loam; weak
iable; many fine, medium, and
th boundary.
wn (7.5YR 5/8) and red (2.5YR
blocky structure; very firm,
tinuous clay films on faces of
roots; few fine pores; strongly

R 5/8), brownish yellow (10YR
clay; few fine distinct pale yel-
r blocky structure; very firm,
bus clay films on faces of peds;
trate interior of peds; strongly

R 5/8), yellowish red (5YR 4/8),
ne distinct light gray mottles;
ng to strong fine and medium
very plastic; thick continuous
faces of peds; common fine
of peds; strongly acid; gradual

R 5/8), yellow (10YR 7/6), and
ny medium distinct light gray
n platy structure parting to
ky; very firm, sticky and very
faces of peds; few fine flakes
mooth boundary.
y (10YR 7/1), red (2.5YR 5/8),
(5YR 4/8) clay; strong coarse
sticky and very plastic; thick
; very strongly acid.

re than 75 inches in thickness.
the A horizon and is strongly

es thick. It is brown, grayish
gray. The A2 horizon, where
brown or light brownish gray

5 inches thick. It is brownish
ish brown clay loam or sandy
nches thick. The upper part is
strong brown or is mottled in

hboro series

e Smithboro series consists of deep, somewhat poorly ıed, slowly permeable soils that formed in clayey ne sediment. These soils are on the Coastal Plain on d estuary terraces. Slopes are dominantly less than 2 ent.

ithboro soils are closely associated on the landscape Cantey, Coxville, Goldsboro, Persanti, and Rains Smithboro soils are on similar positions to Cantey, anti, and Goldsboro soils. They are better drained Cantey soils and are at slightly higher elevations. hboro soils are less well drained than Persanti soils, gray colors in the upper part of the horizon, and are lightly lower elevations. Goldsboro soils are better ıed and have a fine-loamy control section. Coxville Rains soils are more poorly drained than Smithboro ; in addition, Rains soils have a coarser textured B on.

pical pedon of Smithboro loam, in woods, approxi-ly 3.2 miles west of Gadsden, 1.4 miles west of inter-on of secondary roads 734 and 2236, 0.7 mile neast on private road, 250 feet south of power trans-ion line, and 50 feet west of private road:

) to 6 inches; very dark grayish brown (10YR 3/2) loam; weak fine ranular structure; very friable; many fine medium and large roots; ery strongly acid; abrupt smooth boundary.

to 10 inches; very pale brown (10YR 7/3) loam; common medium istinct dark grayish brown (10YR 4/2) and common medium faint ght yellowish brown (10YR 6/4) mottles; weak medium subangular locky structure; friable; many fine and medium roots, common ıedium pores; very strongly acid; clear smooth boundary.

—10 to 20 inches; mottled brownish yellow (10YR 6/8), gray 10YR 6/1), light brownish gray (10YR 6/2), and yellowish red (5YR /8) clay loam; moderate medium subangular blocky structure; firm, ticky and plastic; thick continuous clay films on faces of peds; few ine and medium roots; few fine pores; very strongly acid; gradual avy boundary.

—20 to 29 inches; gray (10YR 6/1) clay loam; common medium rominent red (2.5YR 4/8), common medium distinct yellowish rown (10YR 5/6), and few medium faint pale brown (10YR 6/3) ıottles; strong medium subangular blocky structure; firm, sticky nd plastic; thin continuous clay films on faces of peds; few fine and ıedium roots; few fine pores; very strongly acid; gradual wavy oundary.

—29 to 48 inches; gray (10YR 6/1) clay; many medium distinct rownish yellow (10YR 6/8), few medium prominent weak red (10R /4), and few coarse faint pale brown (10YR 6/3) mottles; moderate ıedium subangular blocky structure; very firm, sticky and plastic; hin patchy clay films on faces of peds; few fine and medium roots; ery strongly acid; gradual wavy boundary.

—48 to 67 inches; gray (10YR 6/1) clay; common medium distinct trong brown (7.5YR 5/8) mottles; moderate medium subangular locky structure; very firm, sticky and plastic; thin patchy clay lms on faces of peds; few fine roots along faces of peds; very trongly acid; gradual wavy boundary.

—67 to 78 inches; mottled gray (10YR 6/1), strong brown (7.5YR /8), and reddish brown (2.5YR 5/4) silty clay; common medium aint light brownish gray (10YR 6/2) mottles; moderate coarse sub-ngular blocky structure; firm, sticky and plastic; thin patchy clay lms on faces of peds; few fine and medium roots along faces of eds; very strongly acid.

solum is 60 inches to more than 80 inches thick. It is strongly acid y strongly acid throughout.

thick. It is brown, grayish
loam, or loamy sand. The A2
wish brown, light yellowish
strong brown loam or sandy

It is yellowish brown, strong
in various shades of brown,
clay loam, or loam. The B3
thick. It is brownish yellow
combinations of those colors
t is sandy loam, loam, or silty

ellow, yellowish brown, and
clay, or soft slate saprolite.

deep, somewhat poorly
t formed in clayey allu-
edmont province. These
Congaree and Wateree
ent.
he landscape with Con-
ewacla soils. Congaree,
a coarser textured con-
addition, Congaree and
Chastain soils are more

y clay loam in woods
nbia, 2.5 miles south of
ad:

4) silty clay loam; weak fine
ky and plastic; many fine and
ooth boundary.
4/4) silty clay; weak medium
ky and plastic; many fine and
acid; gradual smooth bounda-

4/4) silty clay; common medi-
6/4) mottles; weak medium
ky and plastic; many fine and
acid; gradual smooth bounda-

10YR 7/2), dark brown (10YR
ayish brown (10YR 4/2) silty
ky structure; friable, sticky;
at are mottled dark grayish
radual smooth boundary.
(10YR 7/2), dark yellowish
brown (10YR 6/4) silty clay
ructure; firm, sticky; common
s; coatings of silt along root
boundary.
10YR 7/2), brown (7.5YR 5/4),
light yellowish brown (10YR
gular blocky structure; firm,
ium acid.

e than 64 inches in thickness.
ut.
is brown, dark brown, or red-

. It is reddish brown, brown,
ons it has pale brown and yel-
6 to 11 inches thick. It is red-
mottled with combinations of
ish brown. The lower 16 to 41

ated on the landscape with
nd, and Lucy soils and are
lscape to all of those soils
nerally at lower elevations
ndy surface layer 20 to 40
ve gray colors in the Bt
ndy surface layer 20 to 40
in the Bt horizon above a
ave a sandy surface layer
dish colors in the subsoil.
pth of 80 inches or more.
0 to 6 percent slopes, in a
astover on north bank of a
,Highway 263, and 0.5 mile
ay 263 and U.S. Highway

nd; weak fine granular structure;
ium acid; abrupt smooth bounda-

(10YR 5/4) sand; single grained;
s; many uncoated grains of sand;
ry.
(7.5YR 5/6) loamy sand; single
edium roots; most grains of sand
dual smooth boundary.
R 4/8) sandy loam; weak medium
ple; few fine and medium roots;
with clay; very strongly acid.

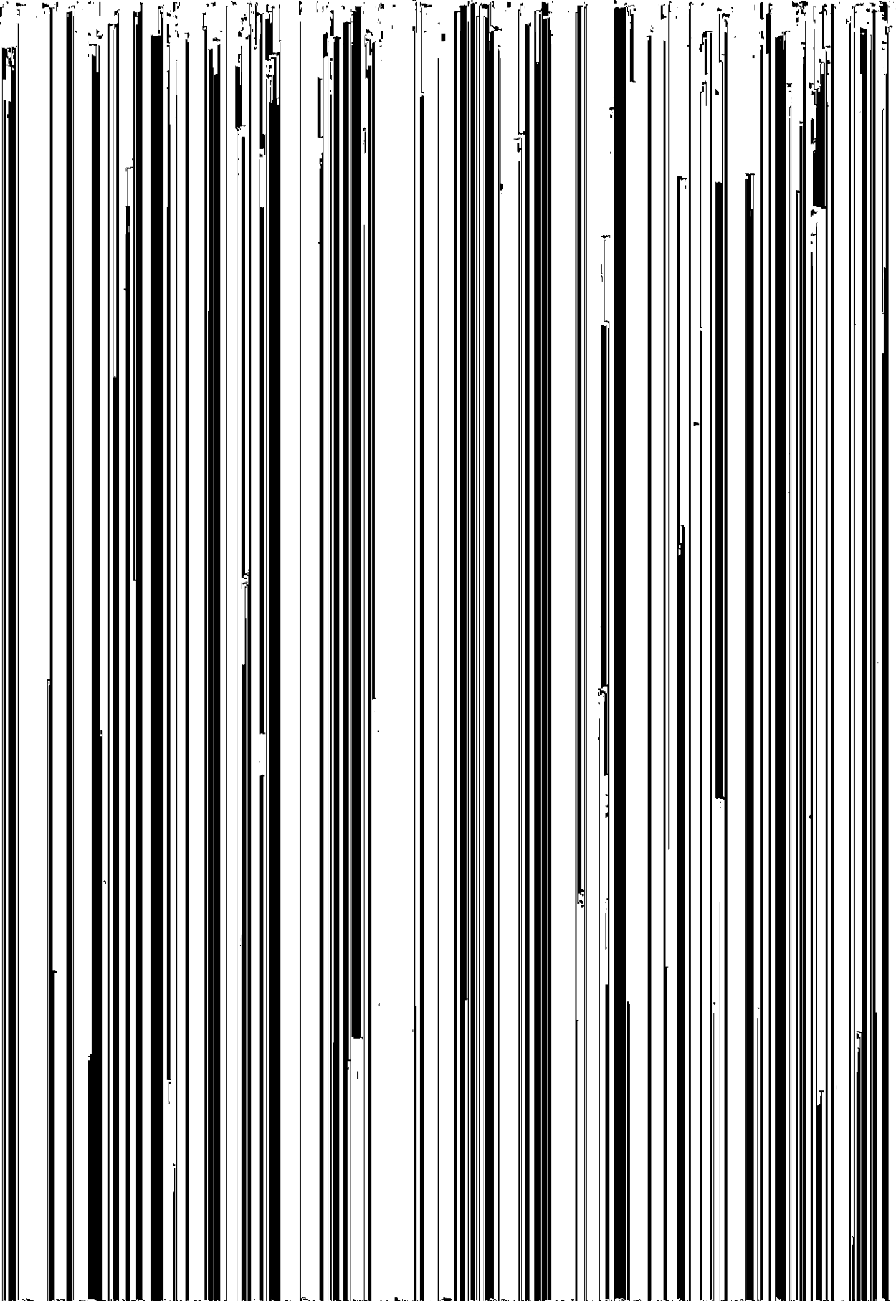
nore than 100 inches in thickness.
acid throughout, except in areas

thick and is dark grayish brown,
The A2 horizon is 37 to 65 inches
yellowish brown, strong brown,
or loamy sand.
to 12 inches thick and is strong
sandy loam. The B2t horizon ex-
more and is yellowish red, red,
loam or sandy clay loam.

s of well drained, slowly
n loamy marine sediment.
rrow, irregular slopes on
ey have a fragipan. Slopes

sociated on the landscape
Lucy, Pelion, and Troup
agipan and Fuquay, Lake-
oils do not. Ailey, Fuquay,
andy A horizon more than
y soils have nodules of
eland soils are sand to a
Pelion soils are less well
nd they have gray colors
e B horizon.
amy sand, 6 to 10 percent
east of Columbia, 0.7 mile
condary roads 935 and 86,
road 86, 60 feet from a

[redacted]



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Generally,
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ies. They
re silt. A
e in the
ed in the

Piedmont
or sandy
Piedmont
ecoa soils,
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and are

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rtions. In
sediment
, Fuquay,
on. Pelion
nd loamy
is low in
e Coastal
and silt in
s Dothan,
ed in this

Climate

Richland County has a temperate climate; thus winters are mild, and summers are very warm. The rainfall is ample throughout the growing season. Summer is the wettest season. More detailed information about the climate of Richland County is given in the section "General nature of the county."

Climate, particularly precipitation and temperature, affects the physical, chemical, and biological relationships in the soil. The growth and activity of living organisms and also the chemical and physical decomposition or weathering of parent material are accelerated by moisture and warm temperatures. Water dissolves and transports minerals and organic matter as it moves down through the layers of soil. It causes the leaching of soluble bases as it percolates through the soil and the translocation or redistribution of less soluble, finer textured, and highly weathered materials. The amount of water that percolates through the soil depends on the rainfall, relief, permeability of the soil material, and frost-free season.

Rainfall and the temperate climate of Richland County are responsible for the leaching and removal of soluble materials released through weathering of the rocks that were the original source of the marine sediment. For this reason, most of the soils are strongly acid and have low base saturation. Water movement through the soil is responsible for the clayey and loamy subsoil characteristic of such soils as Georgeville and Norfolk and for the excessive leaching and clay removal of such coarse-textured soils as Lakeland. It also causes the clay accumulation in the deep subsoil of Blanton, Fuquay and Troup soils.

Relief

Relief, or "lay of the land," is the difference in height of landforms. It has been determined largely by geologic history and the effects of dissection by streams as these streams developed. Relief influences the formation of soils chiefly by its effects on water movement, erosion, and plant cover. In the Piedmont province runoff is less rapid on the gentle slopes, and more soil material forms on the surface. Here where soil development has been faster than geologic erosion, the soils are thicker than those soils that formed on moderate to steep slopes where soil removal by geologic erosion has more closely kept pace with soil development.

In the Sand Hills the broad ridgetops or plains are nearly level or gently undulating. Few streams dissect the plains. Runoff is slight, and most of the rainfall passes down through the permeable soil material, thus leaching bases and transporting clays to greater depths. In the more sloping part of the Sand Hills, where drainageways have developed, this same process takes place, but is modified by increased runoff.

On the nearly level flood plains of the streams, soil-forming materials deposited by stream overflow accumulate on the surface at rates exceeding other soil-forming processes. Most soils on this landscape are classed in the orders of Entisols or Inceptisols and have not developed genetic horizons. In level or depressional areas, where stream and surface drainage is not well established, the water table is close to the surface and soils are permanently wet. Soils classified in the great groups of Paleaquults, Ochraquults, and Albaquults formed in this environment.

Plants and animals

The number and kinds of plants and animals that live in and on the soil are determined mainly by the climate and to a lesser extent by parent material, relief, and age of the soils.

Bacteria, fungi, and other micro-organisms are indispensable in soil formation. They hasten the weathering of minerals and the decomposition of organic matter, and they release nutrients to plants. Larger plants alter the soil microclimate, furnish organic matter, and transfer chemical elements from the subsoil to the surface soil. Most of the bacteria and fungi in the soils of Richland County are in the upper few inches of the surface layer.

Earthworms and other small invertebrates are chiefly active in the surface layer and in the upper part of the subsoil. They slowly but continually mix the soil material of these horizons.

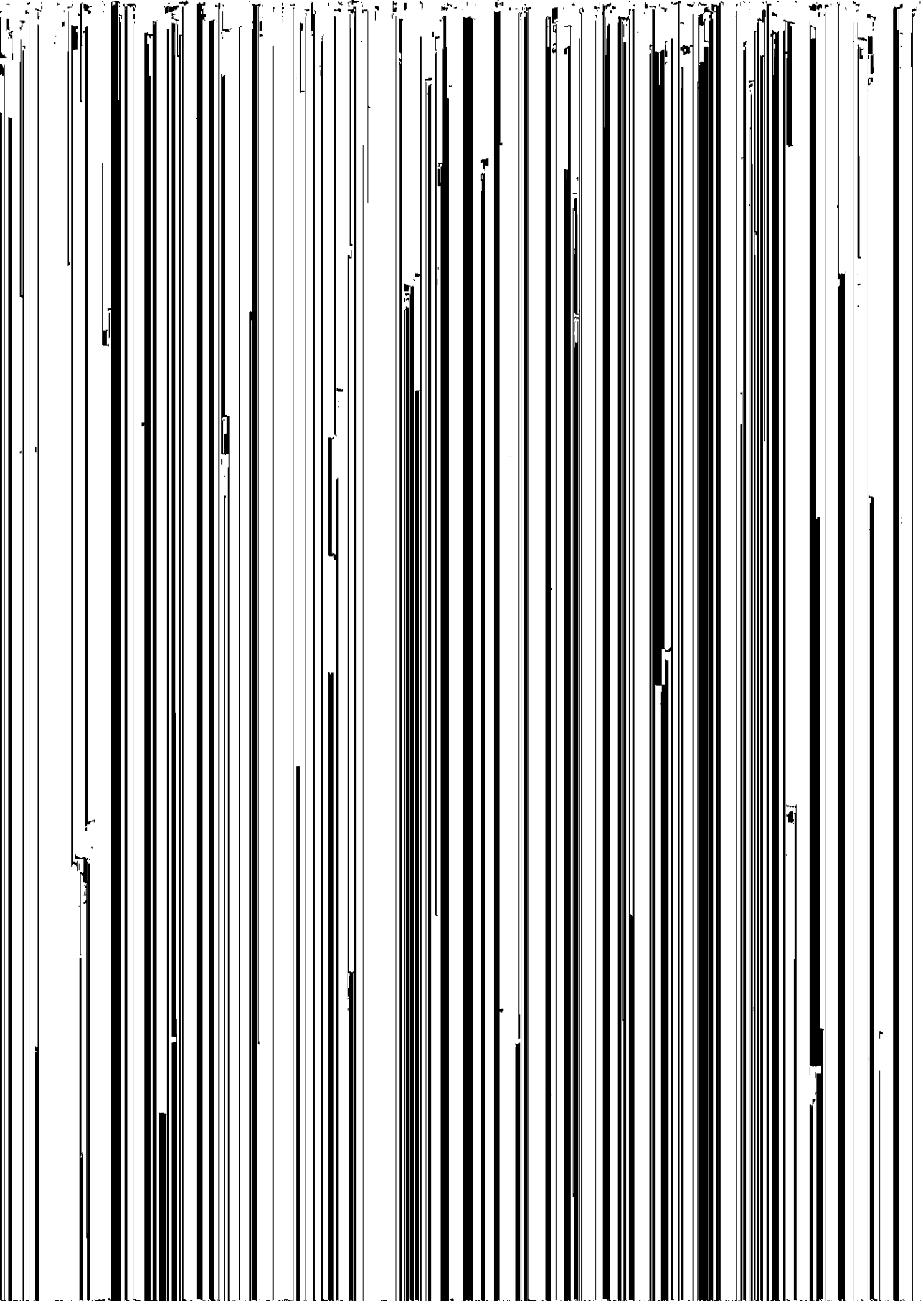
Animals also play a role in soil formation. For example, by eating plants they perform a step in returning and distributing plant nutrients to the soil. Also, burrowing animals mix soil material.

Large trees affect soil formation by bringing nutrients up from deep within the soil and bringing soil material up from varying depths when they are overturned by wind. Also, as large roots decay, the openings are filled by material from above.

Trees were the native vegetation in this county. In the Sand Hills tree species were chiefly oaks and longleaf pine. In the Piedmont province various oaks, hickory, sweetgum, and loblolly and shortleaf pine were dominant. Water-tolerant oaks, maple, sweetgum, blackgum, and cypress were common in areas of wet soils.

Time

The length of time required for a soil to form depends largely on the intensity of other soil-forming factors. The soils of Richland County range from young to mature. On the uplands of the Piedmont province, and also in the Coastal Plain province, many of the soils have well-developed genetic horizons, or layers, that are easily recognized. Here, below the surface layer, the layers of the subsoil have an accumulation of clay. Where the parent material is sandy, little horizonation has taken place. In level or depressional areas, the soils are saturated, and horizons are only moderately distinct. On the stream flood plains, the soils are young because the soil parent material is still being deposited as alluvium; thus, well-defined horizons have not had time to develop.



..ed.—Water is removed from the soil readily, but not is available to plants throughout most of the growing wetness does not inhibit growth of roots for significant ring most growing seasons. Well drained soils are com- ium textured. They are mainly free of mottling.

well drained.—Water is removed from the soil slowly during some periods. Moderately well drained soils or only a short time during the growing season, but for long enough that most mesophytic crops are af- ey commonly have a slowly pervious layer within or low the solum, or periodically receive high rainfall, or

poorly drained.—Water is removed slowly enough that wet for significant periods during the growing season. arkedly restricts the growth of mesophytic crops unless rainage is provided. Somewhat poorly drained soils com- e a slowly pervious layer, a high water table, additional seepage, nearly continuous rainfall, or a combination of

ined.—Water is removed so slowly that the soil is satu- odically during the growing season or remains wet for ds. Free water is commonly at or near the surface for h during the growing season that most mesophytic crops grown unless the soil is artificially drained. The soil is not ly saturated in layers directly below plow depth. Poor esults from a high water table, a slowly pervious layer profile, seepage, nearly continuous rainfall, or a combina- se.

ly drained.—Water is removed from the soil so slowly water remains at or on the surface during most of the season. Unless the soil is artificially drained, most c crops cannot be grown. Very poorly drained soils are level or depressed and are frequently ponded. Yet, where high and nearly continuous, they can have moderate or gradients, as for example in "hillpeats" and "climatic

face. Runoff, or surface flow of water, from an area.

he movement of material in true solution or colloidal from one place to another within the soil. Soil horizons lost material through eluviation are eluvial; those that ived material are illuvial.

aterial. Earthy parent material accumulated through wind mmonly refers to sandy material in dunes or to loess in n the surface.

wearing away of the land surface by running water, wind, ier geologic agents and by such processes as gravitational

geologic). Erosion caused by geologic processes acting over gic periods and resulting in the wearing away of moun- the building up of such landscape features as flood plains al plains. Synonym: natural erosion.

accelerated). Erosion much more rapid than geologic ero- ly as a result of the activities of man or other animals or strophe in nature, for example, fire, that exposes a bare

Excess silt and clay. The soil does not provide a source of sand for construction purposes.

The rapid movement of water into the soil.

vorable soil features for the specified use.

. The quality that enables a soil to provide plant nutrients, ate amounts and in proper balance, for the growth of plants when light, moisture, temperature, tilth, and other ctors are favorable.

aterial (peat). The least decomposed of all organic soil Peat contains a large amount of well preserved fiber that identifiable according to botanical origin. Peat has the lk density and the highest water content at saturation of c soil material.

e temporary covering of soil with water from overflowing runoff from adjacent slopes, and tides. Frequency, dura- probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *occasional* that it occurs on an average of once or less in 2 years; and *frequent* that it occurs on an average of more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; *November-May*, for example, means that flooding can occur during the period November through May. Water standing for short periods after rainfall or commonly covering swamps and marshes is not considered flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Gleyed soil. A soil having one or more neutral gray horizons as a result of waterlogging and lack of oxygen. The term "gleyed" also designates gray horizons and horizons having yellow and gray mottles as a result of intermittent waterlogging.

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 7.5 centimeters) in diameter. An individual piece is a pebble.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table, which is the upper limit of saturation.

Habitat. The natural abode of a plant or animal; refers to the kind of environment in which a plant or animal normally lives, as opposed to the range or geographical distribution.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. The major horizons of mineral soil are as follows:

O horizon.—An organic layer, fresh and decaying plant residue, at the surface of a mineral soil.

A horizon.—The mineral horizon, formed or forming 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.

A2 horizon.—A mineral horizon, mainly a residual concentration of sand and silt high in content of resistant minerals as a result of the loss of silicate clay, iron, aluminum, or a combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or a combination of these; (2) by prismatic or blocky structure; (3) by redder or browner colors than those in the A horizon; or (4) by a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil lacks 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 from which the solum is presumed to have formed. If the material is known to differ from that in the solum the Roman numeral II precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock 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.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration 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.

Leaching. The removal of soluble material from soil or other material by percolating water.

Light textured soil. Sand and loamy sand.

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. Inadequate strength for supporting loads.

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.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

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 colored, finely divided, well decomposed organic soil material mixed with mineral soil material. The content of organic matter is more than 20 percent.

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3.

Nutrient, plant. Any element taken in by a plant, essential to its growth, and used by it in the production of food and tissue. Plant nutrients are nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, zinc, and perhaps other elements obtained from the soil; and carbon, hydrogen, and oxygen obtained largely from the air and water.

Parent material. The great variety of unconsolidated organic and mineral material in which soil forms. Consolidated bedrock is not yet parent material by this concept.

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. The slow movement of water through the soil adversely affecting the specified use.

Permeability. The quality that enables the soil to transmit water or air, measured as the number of inches per hour that water moves through the soil. Terms describing permeability are *very slow* (less than 0.06 inch), *slow* (0.06 to 0.20 inch), *moderately slow* (0.2 to 0.6 inch), *moderate* (0.6 to 2.0 inches), *moderately rapid* (2.0 to 6.0 inches), *rapid* (6.0 to 20 inches), and *very rapid* (more than 20 inches).

Phase, soil. A subdivision of a soil series or other unit in the soil classification system based on differences in the soil that affect its management. A soil series, for example, may be divided into phases on the bases of differences in slope, stoniness, thickness, or some other characteristic that affects management. These differences are too small to justify separate series.

pH value. (See Reaction, soil). A numerical designation of acidity and alkalinity in soil.

Piping. Moving water forms subsurface tunnels or pipelike cavities in 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 a semisolid to a plastic state.

Range condition. The health or productivity of forage plants on a given range, in terms of the potential productivity under normal climate and the best practical management. Condition classes generally recognized are—*excellent*, *good*, *fair*, and *poor*. The classification is based on the percentage of original, or assumed climax vegetation on a site, as compared to what has been observed to grow on it when well managed.

Poorly graded. Refers to soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets. Surface or subsurface drainage outlets difficult or expensive to install.

Productivity (soil). The capability of a soil for producing a specified plant or sequence of plants under a specified system of management. Productivity is measured in terms of output, or harvest, in relation to input.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium 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. Soil scientists regard as soil only the part of the regolith that is modified by organisms and other soil-building forces. Most engineers describe the whole regolith, even to a great depth, as "soil."

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered, or partly weathered mineral material that accumulates over disintegrating rock.

Rooting depth. Shallow root zone. The soil is shallow over a layer that greatly restricts roots. See Root zone.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged in stream channels from a drainage area. The water that flows off the land surface without sinking in is called surface runoff; that which enters the ground 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 from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist

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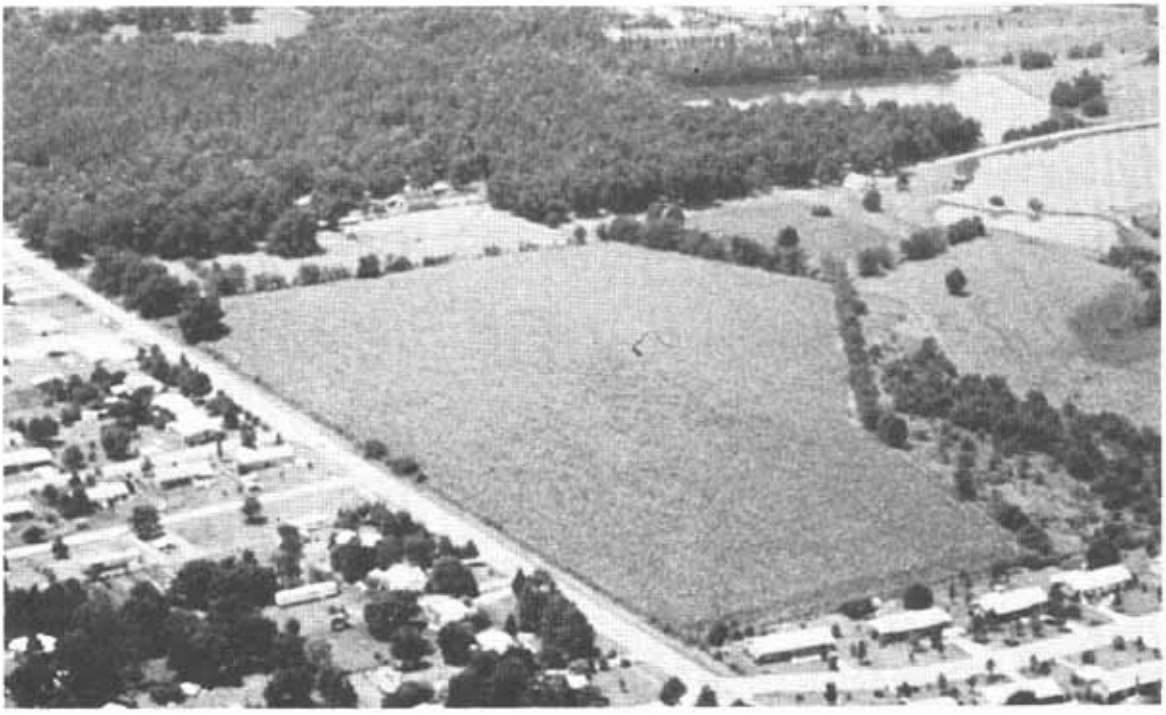

Figure 1.—Much of the farmland in Richland County

Tables

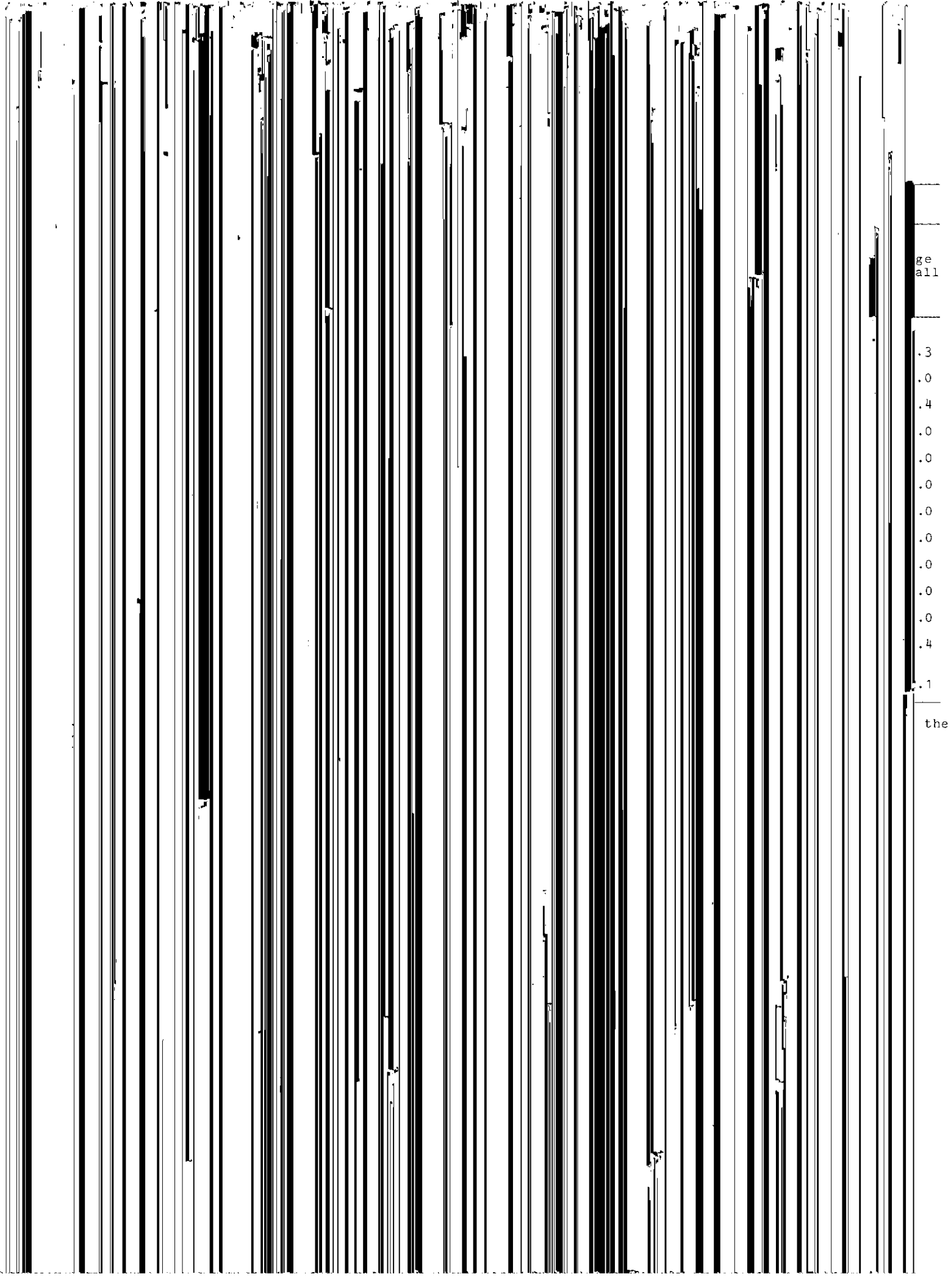
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TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1951-1974 at Columbia, South Carolina]

Probability	Temperature		
	24° F or less	28° F or less	32° F or less
Last freezing temperature in spring:			
1 year in 10 later than--	March 26	April 11	April 23
2 years in 10 later than--	March 19	April 5	April 18
5 years in 10 later than--	March 6	March 24	April 7
First freezing temperature in fall:			
1 year in 10 earlier than--	October 29	October 21	October 16
2 years in 10 earlier than--	November 4	October 26	October 19
5 years in 10 earlier than--	November 15	November 5	October 26

TABLE 3.--GROWING SEASON LENGTH

[Recorded in the period 1951-1974 at Columbia, South Carolina]

Probability	Daily minimum temperature during growing season		
	Higher than 24° F	Higher than 28° F	Higher than 32° F
	Days	Days	Days
9 years in 10	226	203	182
8 years in 10	235	211	189
5 years in 10	253	225	202
2 years in 10	272	239	214
1 year in 10	281	247	221

TABLE 4.--POTENTIALS AND LIMITATIONS OF MAP UNITS ON THE GENERAL SOIL MAP FOR SPECIFIED USES

Map units	Extent of area	Cultivated farm crops	Woodland	Urban uses	Recreation uses
	Pct				
1. Nason-Georgeville----------	28	Medium: erosion.	Medium-------	Medium: slopes, depth to bedrock.	Medium: slopes.
2. Lakeland----------	11	Low: too sandy.	Medium: too sandy.	Medium: low absorption too sandy, possible contamination of ground water.	Medium: too sandy.
3. Vaucluse-Ailey-Pelion------	10	Low: fragipan.	Medium: too sandy.	Medium: fragipan.	Low: slopes, too sandy.
4. Fuquay-Troup-Vaucluse------	8	Medium: too sandy.	Medium: too sandy, fragipan.	High---------	Medium: too sandy.
5. Pelion-Johnston-Vaucluse---	10	Low: wetness, compact subsoil.	Medium to high: wetness, compact subsoil.	Medium: wetness.	Medium: wetness, slopes.
6. Orangeburg-Norfolk-Marlboro	13	High----------	High---------	High---------	High.
7. Rotham-Dogue complex-------	5	High----------	High---------	High: wetness.	High: wetness.
8. Lumber-Myatt-Johnston-----	5	Medium: wetness.	High---------	Low: wetness.	Medium: wetness.
9. Congaree-Dawcaw-Chastain---	14	Low: wetness, floods.	High: wetness, floods.	Low: wetness, floods.	Low: wetness, floods.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE

[All yields were estimated for a high level of management in 1975. Absence of a yield figure indicates the crop is seldom grown on the soil or the soil is not suited to the crop]

Soil name and map symbol	Corn	Soybeans	Cotton lint	Wheat	Bahiagrass	Improved bermudagrass	Grass hay
	Bu	Bu	Lb	Bu	AUM[1]	AUM[1]	Ton
Ailey:							
AeC	45	18	350	35	5.0	5.0	3.0
Altavista:							
AtA	120	45	550	55	8.5	9.0	5.4
Blanton:							
BaB	60	25	350	25	8	8	4.8
Cantey:							
Ca	---	---	---	---	---	---	---
Chastain:							
Cd	---	---	---	---	---	---	---
Chewacla:							
Ce, [2]CH	80	30	---	---	7.0	---	4.2
Clarendon:							
Cn	110	40	700	45	10.0	10.5	6.2
Congaree:							
Co	125	45	---	---	9	10	---
Coxville:							
Cx	105	40	---	45	6.0	---	3.6
Dorovan:							
Dn	---	---	---	---	---	---	---
Dothan:							
DoA	90	40	800	45	8	8.0	5.5
DoB, [2]DuB	80	40	750	45	8	8.0	5.5
Faceville:							
FaA	105	40	875	45	7.0	10.0	5.8
FaB	105	40	875	45	7.0	10.0	5.8
Fuquay:							
FuA, FuB, [2]FyB	80	30	650	35	7.0	8.0	5.0
Georgeville:							
GeB	90	---	700	45	---	5.0	3.0
GeC	80	---	625	40	---	5.0	3.0
Goldsboro:							
GoA	125	45	700	60	10.0	11.0	6.5
Herndon:							
HeB, [2]HnB	90	---	700	40	---	5.0	3.0
HeC	80	---	600	35	---	5.0	3.0
Johnston:							
Jo	---	---	---	---	---	---	---
Kershaw:							
KeC	---	---	---	---	3.0	3.0	1.8
Kirksey:							
KrB	65	30	600	---	---	6.0	3.6

See footnotes at end of table.

OF CROPS AND PASTURE--Continued

Cotton lint	Wheat	Bahiagrass	Improved bermuda-grass	Grass hay
Lb	Bu	AUM[1]	AUM[1]	Ton
---	---	7.0	7.0	4.2
---	---	6.0	6.0	3.5
650	35	8.5	8.5	5.5
1,000	45	9.0	10	6.0
1,000	45	9.0	10	6.0
550	45	---	5.0	3.0
500	40	---	5.0	3.0
---	---	---	---	---
700	60	9.0	10.5	6.0
650	55	9.0	10.5	6.0
---	40	---	5.0	3.0
900	60	8.5	10.5	6.2
850	55	8.5	10.5	6.2
650	50	7.0	9.0	5.4
500	35	7	8	4.8
---	---	6	6	3.5
400	---	7	7	4.2
700	35	8	9	5.4
450	---	10.0	---	6.0
---	---	9.0	---	5.0
800	35	---	9.5	5.6
---	45	---	10.6	6.0
---	---	---	9.0	8.0
---	---	7.2	7.5	4.0
---	---	---	---	---
---	---	---	---	---

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

nd [1]	Corn	Soybeans	Cotton lint	Wheat	Bahiagrass	Improved bermuda-grass	Grass hay
	Bu	Bu	Lb	Bu	AUM[1]	AUM[1]	Ton
----------	50	20	400	---	6	7	---
----------	---	---	---	---	6	7	---
----------	80	---	525	---	---	4.0	3.0
----------	---	---	---	---	---	3.0	2.0

nonth: The amount of forage or feed required to feed one animal unit (one cow, one horse, one or five goats) for a period of 30 days.
t is made up of two or more dominant kinds of soil. See map unit description for the shavior of the whole map unit.

TABLE 7.--CAPABILITY CLASSES AND SUBCLASSES

[Udorthents, Urban land, and Urban land complexes were not assigned to a capability class]

Capability class	Total acreage	Capability subclasses		
		Erosion (e)	Wetness (w)	Soil problem (s)
		Acres	Acres	Acres
I	39,885	---	---	---
II	131,010	74,515	41,870	14,625
III	70,005	42,580	12,200	15,225
IV	78,375	10,940	21,125	46,310
V	---	---	---	---
VI	63,640	53,115	---	10,525
VII	51,930	1,575	48,380	1,975
VIII	---	---	---	---
Totals	434,845	182,725	123,575	88,660

DLAND MANAGEMENT AND PRODUCTIVITY

ommercial trees are listed in this table. Absence of an entry in available. Site index was calculated at age 30 for eastern nore, and at age 50 for all other species]

ncerns	Potential productivity		
Seedling mortality	Important trees	Site index	Trees to plant
Moderate	Slash pine	80	Slash pine, longleaf pine.
	Longleaf pine	70	
Slight	Loblolly pine	91	Loblolly pine, yellow-poplar, black walnut, sweetgum, American sycamore, cherrybark oak.
	Longleaf pine	84	
	Shortleaf pine	77	
	Sweetgum	84	
	White oak	---	
Moderate	Slash pine	80	Slash pine, Loblolly pine.
	Loblolly pine	80	
	Longleaf pine	70	
Severe	Loblolly pine	90	Loblolly pine,[1] slash pine,[1] sweetgum.[1]
	Slash pine	90	
	Sweetgum	85	
	Water oak	---	
Severe	Sweetgum	94	Loblolly pine, American sycamore, sweetgum, cherrybark oak.
	Water oak	89	
	Eastern cottonwood	90	
	Green ash	88	
	Loblolly pine	90	
	Water tupelo	---	
	White oak	---	
	Southern red oak	---	
	Baldcypress	---	
Moderate	Loblolly pine	96	Loblolly pine, slash pine, American sycamore, yellow-poplar, sweetgum, green ash.
	Yellow-poplar	104	
	American sycamore	90	
	Sweetgum	97	
	Water oak	86	
	Eastern cottonwood	100	
	Green ash	97	
	Southern red oak	90	
Slight	Loblolly pine	90	Loblolly pine, slash pine, American sycamore, yellow-poplar, sweetgum.
	Slash pine	90	
	Sweetgum	85	
Slight	Sweetgum	100	Loblolly pine, slash pine, yellow-poplar, American sycamore, black walnut, cherrybark oak, eastern cottonwood, sweetgum.
	Yellow-poplar	107	
	Cherrybark oak	107	
	Loblolly pine	90	
	Eastern cottonwood	107	
	American sycamore	89	
	Black walnut	100	
	Scarlet oak	100	
	Willow oak	95	

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CTIVITY--Continued

tial productivity		
ant trees	Site index	Trees to plant
ine----------	67	Loblolly pine, eastern redcedar.
----------	75	Slash pine,
ine----------	75	loblolly pine.
ine----------	60	
----------	80	Slash pine,
ine----------	70	longleaf pine,
ine----------	80	loblolly pine.
ine----------	82	Slash pine,
----------	80	loblolly pine.
ine----------	62	
ed oak-------	62	Loblolly pine,
ine----------	69	Virginia pine.
pine---------	66	
ine----------	80	
ed oak-------	62	Loblolly pine,
ine----------	69	Virginia pine.
pine---------	66	
ine----------	80	
ine----------	86	Slash pine,
ine----------	68	loblolly pine.
----------	86	
ed oak-------	60	Loblolly pine,
ine----------	60	Virginia pine.
pine---------	60	
ine----------	70	
ine----------	86	Slash pine,
----------	86	loblolly pine.
ine----------	70	
ine----------	86	Loblolly pine,
----------	86	slash pine.
ine----------	90	Loblolly pine,
pine---------	80	slash pine,
----------	90	sweetgum,
----------	90	yellow-poplar.
ine----------	94	Loblolly pine,
----------	91	slash pine,
----------	90	sweetgum, American sycamore.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Important trees	Site index	
Smithboro:							
Sm	2w	Slight	Moderate	Moderate	Loblolly pine	90	Loblolly pine, slash pine, American sycamore, sweetgum.
					Slash pine	90	
					Sweetgum	90	
State:							
StA	2o	Slight	Slight	Slight	Loblolly pine	90	Loblolly pine, slash pine, yellow-poplar.
					Slash pine	90	
					Yellow-poplar	100	
					Southern red oak	---	
Tawcaw:							
Tc	1w	Slight	Moderate	Moderate	Loblolly pine	100	Loblolly pine, eastern cottonwood, American sycamore, sweetgum, water oak, cherrybark oak.
					Sweetgum	100	
					Water oak	90	
					Water tupelo	---	
Toccoa:							
To	1o	Slight	Slight	Slight	Loblolly pine	90	Loblolly pine, yellow-poplar, American sycamore, cherrybark oak.
					Yellow-poplar	107	
					Sweetgum	100	
					Southern red oak	---	
Troup:							
TrB	3s	Slight	Moderate	Moderate	Loblolly pine	80	Loblolly pine, longleaf pine, slash pine.
					Longleaf pine	70	
					Slash pine	80	
Vaucluse:							
VaC, VaD	3o	Slight	Slight	Slight	Loblolly pine	76	Loblolly pine, slash pine.
Wedowee:							
WeB	3o	Slight	Slight	Slight	Loblolly pine	80	Loblolly pine, Virginia pine, eastern redcedar, yellow-poplar.
					Virginia pine	70	
					Shortleaf pine	70	
					Southern red oak	70	
					Northern red oak	70	
					White oak	65	
WeE	3r	Moderate	Moderate	Slight	Loblolly pine	80	Loblolly pine, Virginia pine, eastern redcedar, yellow-poplar.
					Virginia pine	70	
					Shortleaf pine	70	
					Southern red oak	70	
					Northern red oak	70	
					White oak	65	

[1]Tree planting is feasible only on areas with adequate surface drainage.

[2]This map unit is made up of two or more dominant kinds of soil. See map unit description for the composition and behavior of the whole map unit.

VEY

ITE DEVELOPMENT

tive soil features are defined in the Glossary. See evere." Absence of an entry means soil was not

Dwellings with basements	Small commercial buildings	Local roads and streets
ight	Moderate: slope.	Slight.
vere: etness.	Severe: wetness.	Severe: low strength.
ight	Slight	Slight.
vere: etness, loods.	Severe: wetness, floods.	Severe: wetness, floods.
vere: loods, etness, w strength.	Severe: floods, wetness, low strength.	Severe: floods, wetness, low strength.
vere: etness, loods.	Severe: wetness, floods.	Severe: wetness, floods.
vere: etness.	Moderate: wetness, corrosive.	Slight.
vere: loods.	Severe: floods.	Severe: floods.
vere: etness.	Severe: wetness.	Severe: wetness, low strength.
vere: etness, oods, w strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.
lerate: etness.	Slight	Slight.
lerate: etness.	Moderate: slope.	Slight.
ght	Slight	Moderate: low strength.
ght	Moderate: slope.	Moderate: low strength.

ued

Small commercial buildings	Local roads and streets
ight----------	Slight.
derate: slope.	Slight.
derate: slope.	Moderate: low strength.
evere: slope.	Moderate: low strength, slope.
derate: wetness.	Slight.
derate: slope.	Moderate: low strength.
evere: slope.	Moderate: low strength, slope.
evere: floods, wetness.	Severe: floods, wetness.
derate: slope.	Slight.
derate: depth to rock, slope.	Moderate: low strength.
derate: slope.	Slight.
evere: slope.	Moderate: slope.
derate: slope.	Slight.
light----------	Moderate: low strength.
derate: slope.	Moderate: low strength.
derate: low strength.	Severe: low strength.
evere: slope.	Severe: low strength.
evere: slope.	Severe: slope.

EY

LOPMENT--Continued

Dwellings with basements	Small commercial buildings	Local roads and streets
erate: ness.	Slight	Slight.
erate: ness.	Moderate: slope.	Slight.
ere: ness, hrink-swell.	Severe: wetness, shrink-swell.	Severe: low strength, shrink-swell.
ght	Slight	Slight.
ght	Moderate: slope.	Slight.
erate: ope.	Severe: slope.	Moderate: slope.
ere: ness.	Moderate: wetness, slope, low strength.	Moderate: low strength.
ere: ness.	Severe: slope.	Moderate: low strength, slope.
ere: ness.	Moderate: wetness, shrink-swell, low strength.	Severe: low strength.
ere: ness, oods.	Severe: wetness, floods, corrosive.	Severe: wetness.
ere: ness, strength.	Severe: wetness, low strength.	Severe: wetness, low strength.
ght	Slight	Slight.
ere: oods, ness, strength.	Severe: floods, wetness, low strength.	Severe: floods, low strength.
ere: oods.	Severe: floods.	Severe: floods.
ght	Slight	Slight.

TABLE 9.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
Urban land: Ur.					
Vaucluse: VaC, VaD	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.
Wedowee: WeB	Moderate: too clayey.	Moderate: low strength, shrink-swell.	Moderate: low strength, shrink-swell.	Moderate: slope, low strength, shrink-swell.	Moderate: low strength, shrink-swell.
WeE	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

[1]This map unit is made up of two or more dominant kinds of soil. See map unit description for the composition and behavior of the whole map unit.

e Glossary. See soils.

Daily cover for landfill
Good.
Good.
Poor: too sandy, seepage.
Poor: wetness, too clayey.
Poor: too clayey, wetness.
Good.
Good.
Good.
Poor: wetness.
Poor: wetness, floods, excess humus.
Good.
Good.
Fair: too clayey.
Fair: too clayey.

ANITARY FACILITIES--Continued

e lagoon reas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
----------	Slight----------	Slight----------	Good.
e:	Slight----------	Slight----------	Good.
e: e.	Moderate: too clayey.	Slight----------	Poor: too clayey.
	Moderate: too clayey.	Moderate: slope.	Poor: too clayey.
: ss.	Severe: wetness.	Severe: wetness.	Good.
te: ge.	Moderate: too clayey.	Slight----------	Poor: too clayey.
:	Moderate: too clayey.	Moderate: slope.	Poor: too clayey.
: s, ss.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
: ge.	Severe: seepage.	Severe: seepage.	Poor: too sandy.
te: to rock,	Severe: depth to rock.	Slight----------	Fair: thin layer, too clayey.
: ge.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy, seepage.
: ge,	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy, seepage.
: ge.	Slight----------	Slight----------	Fair: too sandy.
te: ge.	Moderate: too clayey.	Slight----------	Fair: too clayey.
te: ge,	Moderate: too clayey.	Slight----------	Fair: too clayey.
te: ge.	Severe: depth to rock.	Slight----------	Poor: too clayey.

TABLE 10.--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
Nason:					
NaC	Severe: depth to rock.	Severe: slope.	Severe: depth to rock.	Moderate: slope.	Poor: too clayey.
[1]NaE	Severe: slope.	Severe: slope.	Severe: depth to rock.	Severe: slope.	Poor: slope.
Norfolk:					
NoA	Moderate: wetness.	Moderate: seepage.	Moderate: wetness.	Slight	Good.
NoB	Moderate: wetness.	Moderate: slope, seepage.	Moderate: wetness.	Slight	Good.
Orange:					
OaB	Severe: percs slowly, wetness, depth to rock.	Moderate: depth to rock, slope.	Severe: depth to rock, wetness, too clayey.	Severe: wetness.	Poor: too clayey.
Orangeburg:					
ObA	Slight	Moderate: seepage.	Slight	Slight	Good.
ObB, [1]OgB	Slight	Moderate: slope, seepage.	Slight	Slight	Good.
ObC, [1]OgD	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.	Fair: slope.
Pelion:					
PeB, [1]PnC	Severe: percs slowly.	Moderate: slope.	Severe: wetness.	Severe: wetness.	Good.
PeD	Severe: percs slowly.	Severe: slope.	Severe: wetness.	Severe: wetness.	Fair: slope.
Persanti:					
Ps	Severe: wetness, percs slowly.	Slight	Moderate: wetness, too clayey.	Moderate: wetness.	Poor: too clayey.
Rains:					
Ra	Severe: wetness.	Severe: wetness, floods.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Smithboro:					
Sm	Severe: wetness, percs slowly.	Slight	Severe: wetness.	Severe: wetness.	Poor: wetness, too clayey.
State:					
StA	Slight	Moderate: seepage.	Severe: seepage.	Slight	Good.
Tawcaw:					
Tc	Severe: floods, wetness, percs slowly.	Severe: floods.	Severe: floods, wetness, too clayey.	Severe: floods, wetness.	Poor: too clayey
Toccoa:					
To	Severe: floods.	Severe: floods, seepage.	Severe: floods, seepage.	Severe: floods, seepage.	Good.

See footnotes at end of table.

TABLE 10.--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
Troup: TrB	Slight	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too sandy.
Udorthents: Ud.					
Urban land: Ur.					
Vaucluse: VaC, VaD	Severe: percs slowly.	Severe: slope.	Slight	Moderate: slope.	Fair: slope.
Wedowee: WeB	Moderate: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight	Fair: too clayey, area reclaim.
WeE	Severe: slope.	Severe: slope.	Moderate: slope, too clayey.	Severe: slope.	Poor: slope.

[1]This map unit is made up of two or more dominant kinds of soil. See map unit description for the composition and behavior of the whole map unit.

[2]Rapid permeability may cause pollution of ground water.

TABLE 11.--CONSTRUCTION MATERIALS

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See text for definitions of "good," and "fair." Absence of an entry means soil was not rated]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Ailey: AeC	Good	Poor: excess fines.	Unsuited	Fair: too sandy.
Altavista: AtA	Poor: low strength.	Unsuited	Unsuited	Fair: thin layer.
Blanton: BaB	Good	Fair: excess fines.	Unsuited	Poor: too sandy.
Cantey: Ca	Poor: wetness.	Unsuited	Unsuited	Poor: wetness, thin layer.
Chastain: Cd	Poor: wetness, low strength.	Unsuited	Unsuited	Poor: wetness, too clayey.
Chewacla: Ce, [1]CH	Poor: wetness, low strength.	Unsuited	Unsuited	Good.
Clarendon: Cn	Good	Unsuited	Unsuited	Fair: thin layer.
Congaree: Co	Fair: low strength.	Unsuited	Unsuited	Good.
Coxville: Cx	Poor: wetness, low strength.	Unsuited	Unsuited	Poor: wetness.
Dorovan: Dn	Poor: wetness, excess humus.	Unsuited	Unsuited	Poor: wetness, excess humus.
Dothan: DoA, DoB, [1]DuB	Fair	Poor: excess fines.	Poor: excess fines.	Fair.
Faceville: FaA, FaB	Fair: low strength.	Unsuited	Unsuited	Fair: too clayey.
Fuquay: FuA, FuB, [1]FyB	Good	Poor: excess fines.	Unsuited	Poor: too sandy.
Georgeville: GeB, GeC	Fair: low strength.	Unsuited	Unsuited	Poor: thin layer.

See footnote at end of table.

ION MATERIALS--Continued

Sand	Gravel	Topsoil
----------	Unsuited----------	Good.
----------	Unsuited----------	Fair: thin layer.
fines.	Poor: excess fines.	Poor: wetness.
fines.	Unsuited----------	Poor: too sandy.
----------	Unsuited----------	Fair: too clayey.
fines.	Unsuited----------	Poor: too sandy.
fines.	Poor: excess fines.	Poor: too sandy.
----------	Unsuited----------	Fair: thin layer.
----------	Unsuited----------	Poor: too clayey.
----------	Unsuited----------	Poor: slope.
----------	Unsuited----------	Fair: too sandy.
----------	Unsuited----------	Fair: area reclaim, thin layer.
----------	Unsuited----------	Fair: thin layer.
----------	Unsuited----------	Fair: thin layer.
----------	Unsuited----------	Fair: thin layer, slope.
----------	Unsuited----------	Poor: thin layer.

TABLE 11.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Rains: Ra	Poor: wetness.	Unsuited	Unsuited	Poor: wetness.
Smithboro: Sm	Poor: low strength.	Unsuited	Unsuited	Poor: too clayey.
State: StA	Good	Unsuited	Unsuited	Fair: thin layer.
Tawcaw: Tc	Poor: low strength.	Unsuited	Unsuited	Poor: too clayey.
Toccoa: To	Good	Poor: excess fines.	Unsuited	Good.
Troup: TrB	Good	Fair: excess fines.	Poor: excess fines.	Poor: too sandy.
Udorthents: Ud.				
Urban land: Ur.				
Vaucluse: VaC, VaD	Good	Unsuited	Unsuited	Fair: too sandy.
Wedowee: WeB	Fair: low strength, shrink-swell.	Unsuited	Unsuited	Fair: thin layer, area reclaim.
WeE	Fair: slope, low strength.	Unsuited	Unsuited	Poor: slope.

[1]This map unit is made up of two or more dominant kinds of soil. See map unit description for the composition and behavior of the whole map unit.

TER MANAGEMENT

tive soil features are defined in the Glossary. See text ." Absence of an entry means soil was not evaluated]

Features affecting--			
inage	Irrigation	Terraces and diversions	Grassed waterways
eded-----	Droughty, complex slope.	Cemented pan, complex slope.	Droughty.
ble------	Favorable------	Not needed-----	Favorable.
eded-----	Droughty, seepage, fast intake.	Not needed-----	Droughty.
ss, is, slowly.	Wetness, floods, percs slowly.	Not needed-----	Not needed.
, ess, slowly.	Floods, wetness, percs slowly.	Not needed-----	Not needed.
outlets, is.	Wetness, floods.	Not needed-----	Not needed.
able------	Favorable------	Not needed-----	Favorable.
eeded-----	Floods----------	Not needed-----	Not needed.
ss, slowly.	Wetness, percs slowly.	Not needed-----	Not needed.
s----------	Floods----------	Not needed-----	Not needed.
eeded-----	Favorable------	Favorable------	Favorable.
eeded-----	Favorable------	Favorable------	Favorable.
eeded-----	Fast intake----	Favorable------	Favorable.
eeded-----	Complex slope, erodes easily.	Favorable------	Favorable.

Grassed waterways
Slope, erodes easily.
Favorable.
Favorable.
Erodes easily, slope.
Not needed.
Droughty.
Favorable.
Not needed.
Droughty, erodes easily, slope.
Favorable.
Favorable.
Erodes easily, slope.
Favorable.
Favorable.
Percs slowly, wetness.

TABLE 12.--WATER MANAGEMENT--Continued

for--	Features affecting--			
Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
ght----------	Not needed-----	Favorable------	Favorable------	Favorable.
ght----------	Not needed-----	Slope----------	Slope----------	Slope.
erate: mpressible, w strength.	Percs slowly, wetness, slope.	Percs slowly, wetness, slope.	Percs slowly, wetness.	Percs slowly, wetness.
erate: mpressible, w strength.	Percs slowly, wetness, slope.	Percs slowly, wetness, slope.	Percs slowly, wetness, slope.	Percs slowly, wetness, slope.
erate: w strength, ping.	Wetness, percs slowly.	Wetness, percs slowly.	Not needed-----	Percs slowly, wetness.
ght----------	Wetness, floods.	Wetness, floods.	Not needed-----	Not needed.
erate: mpressible.	Percs slowly, wetness.	Slow intake, wetness, percs slowly.	Not needed-----	Not needed.
ight----------	Not needed-----	Favorable------	Favorable------	Favorable.
erate: mpressible, w strength.	Floods, wetness, percs slowly.	Floods, wetness, percs slowly.	Not needed-----	Not needed.
derate: iping.	Not needed-----	Floods, seepage.	Not needed-----	Not needed.
vere: eepage, iping.	Not needed-----	Droughty, fast intake, seepage.	Too sandy, erodes easily, piping.	Droughty, erodes easily.
derate: iping.	Not needed-----	Complex slope	Complex slope, percs slowly.	Percs slowly.
derate: ow strength, hin layer.	Not needed-----	Slope----------	Favorable------	Favorable.
derate: ow strength, hin layer.	Not needed-----	Slope----------	Slope----------	Slope.

or more dominant kinds of soil. See map unit description for the
map unit.

TABLE 13.--RECREATION

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry means soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
Ailey:				
AeC	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.
Altavista:				
AtA	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Slight.
Blanton:				
BaB	Moderate: too sandy.	Moderate: too sandy.	Severe: too sandy.	Severe: too sandy.
Cantey:				
Ca	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
Chastain:				
Cd	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
Chewacla:				
Ce, [1]CH	Severe: wetness, floods.	Severe: floods.	Severe: wetness, floods.	Moderate: wetness, floods.
Clarendon:				
Cn	Moderate: wetness.	Slight	Moderate: wetness.	Slight.
Congaree:				
Co	Severe: floods.	Moderate: floods.	Severe: floods.	Moderate: floods.
Coxville:				
Cx	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Dorovan:				
Dn	Severe: wetness, floods, excess humus.	Severe: wetness, floods, excess humus.	Severe: wetness, floods, excess humus.	Severe: wetness, floods, excess humus.
Dothan:				
DoA	Slight	Slight	Slight	Slight.
DoB, [1]DuB	Slight	Slight	Moderate: slope.	Slight.
Faceville:				
FaA	Slight	Slight	Slight	Slight.
FaB	Slight	Slight	Moderate: slope.	Slight.
Fuquay:				
FuA	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.

See footnote at end of table.

ATION--Continued

Picnic areas	Playgrounds	Paths and trails
erate: o sandy.	Severe: too sandy.	Moderate: too sandy.
ght----------	Moderate: slope.	Slight.
erate: ope.	Severe: slope.	Slight.
ght----------	Slight----------	Slight.
ght----------	Moderate: slope.	Slight.
erate: ope.	Severe: slope.	Slight.
ere: tness, oods.	Severe: wetness, floods.	Severe: wetness, floods.
ere: o sandy.	Severe: too sandy.	Severe: too sandy.
ight----------	Moderate: percs slowly, slope.	Slight.
ere: o sandy.	Severe: too sandy.	Severe: too sandy.
ere: o sandy.	Severe: too sandy, slope.	Severe: too sandy.
erate: o sandy.	Severe: too sandy.	Moderate: too sandy.
ight----------	Slight----------	Slight.
ight----------	Moderate: slope.	Slight.
ght----------	Moderate: slope, depth to rock.	Slight.
derate: lope.	Severe: slope.	Slight.
vere: lope.	Severe: slope.	Moderate: slope.
ight----------	Slight----------	Slight.

TABLE 13.--RECREATION--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
Norfolk: NoB	Slight	Slight	Moderate: slope.	Slight.
Orange: OaB	Moderate: percs slowly, wetness.	Moderate: wetness.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.
Orangeburg: ObA	Slight	Slight	Slight	Slight.
ObB, [1]OgB	Slight	Slight	Moderate: slope.	Slight.
ObC, [1]OgD	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Pelion: PeB	Moderate: percs slowly, wetness.	Slight	Moderate: percs slowly, wetness, slope.	Slight.
PeD	Moderate: percs slowly, wetness, slope.	Moderate: slope.	Severe: slope.	Slight.
[1]PnC	Moderate: percs slowly, wetness.	Slight	Severe: slope.	Slight.
Persanti: Ps	Moderate: percs slowly, wetness.	Slight	Moderate: percs slowly, wetness.	Slight.
Rains: Ra	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Smithboro: Sm	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.
State: StA	Slight	Slight	Slight	Slight.
Tawcaw: Tc	Severe: floods, wetness.	Severe: floods.	Severe: floods, wetness.	Severe: floods.
Toccoa: To	Severe: floods.	Moderate: floods.	Moderate: floods.	Slight.
Troup: TrB	Moderate: too sandy.	Moderate: too sandy.	Severe: too sandy.	Moderate: too sandy.
Udorthents: Ud.				

See footnote at end of table.

TABLE 13.--RECREATION--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
Urban land: Ur.				
Vaucluse: VaC, VaD	Moderate: percs slowly, too sandy.	Moderate: too sandy.	Severe: slope.	Slight.
Wedowee: WeB	Slight	Slight	Moderate: slope.	Slight.
WeE	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.

[1]This map unit is made up of two or more dominant kinds of soil. See map unit description for the composition and behavior of the whole map unit.

TABLE 14.--WILDLIFE HABITAT POTENTIALS

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates 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
Ailey:										
AeC	Poor	Fair	Fair	Poor	Fair	Poor	Very poor.	Fair	Fair	Very poor.
Altavista:										
AtA	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Blanton:										
BaB	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Cantey:										
Ca	Poor	Poor	Fair	Fair	Fair	Good	Good	Poor	Fair	Good.
Chastain:										
Cd	Very poor.	Poor	Poor	Fair	Poor	Good	Good	Poor	Fair	Good.
Chewacla:										
Ce, [1]CH	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
Clarendon:										
Cn	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Congaree:										
Co	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Coxville:										
Cx	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
Dorovan:										
Dn	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
Dothan:										
DoA, DoB, [1]DuB	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Faceville:										
FaA	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FaB	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Fuquay:										
FuA, FuB, [1]FyB	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
Georgeville:										
GeB, GeC	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Goldsboro:										
GoA	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Herndon:										
HeB, [1]HnB	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

See footnote at end of table.

TABLE 14.--WILDLIFE HABITAT POTENTIALS--Continued

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
Herndon: HeC	Fair	Good	Fair	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Johnston: Jo	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Kershaw: KeC	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
Kirksey: KrB	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Lakeland: LaB, LaD, [1]LkB	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Lucy: LuB	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
Marlboro: MaA, MaB	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Nason: NaB	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NaC	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
[1]NaE	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Norfolk: NoA, NoB	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Orange: OaB	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
Orangeburg: ObA, ObB, [1]OgB	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
ObC, [1]OgD	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Pelion: PeB	Fair	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
PeD, [1]PnC	Fair	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Persanti: Ps	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Rains: Ra	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
Smithboro: Sm	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.

See footnote at end of table.

TABLE 14.--WILDLIFE HABITAT POTENTIALS--Continued

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
State: StA	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Tawcaw: Tc	Fair	Fair	Good	Good	Fair	Fair	Fair	Fair	Good	Fair.
Toccoa: To	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Troup: TrB	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Udorthents: Ud.										
Urban land: Ur.										
Vaucluse: VaC	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
VaD	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Wedowee: WeB	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
WeE	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

[1]This map unit is made up of two or more dominant kinds of soil. See map unit description for the composition and behavior of the whole map unit.

CATIONS

ns data were not estimated. NP

rcentage passing sieve number--			Liquid limit	Plas-ticity index
10	40	200		
			Pct	
75-100	50-80	5-20	---	NP
75-100	60-90	30-40	30-40	8-16
75-100	55-90	20-40	28-40	8-14
95-100	40-100	60-90	<30	NP-7
95-100	60-95	60-75	20-45	5-26
---	---	---	---	---
100	85-100	5-12	---	NP
100	85-95	25-50	18-30	4-10
98-100	78-98	45-80	<40	NP-7
98-100	75-100	55-95	28-60	11-25
98-100	90-100	45-95	30-60	8-25
100	90-100	70-95	23-45	3-18
100	95-100	85-98	35-75	12-40
100	90-100	70-90	30-78	11-42
95-100	70-100	55-90	36-50	4-20
95-100	80-100	51-98	32-61	4-30
---	---	---	---	---
95-100	70-95	20-40	<30	NP-10
95-100	75-95	36-55	20-40	5-15
98-100	80-95	30-55	20-40	5-15

NGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

ture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
	Unified	AASHTO		4	10	40	200		
			Pct					Pct	
------	CL-ML, ML, CL	A-4	0	95-100	95-100	70-100	51-90	20-35	3-10
loam,	SM, SC, ML, CL	A-4, A-6, A-7	0	95-100	95-100	70-100	40-90	25-50	4-22
------	---	---	---	---	---	---	---	---	---
loam	SM, ML, CL-ML, CL	A-4, A-6, A-7	0	100	100	85-97	46-75	20-46	1-15
sandy	CL, CH	A-6, A-7	0	100	100	85-98	53-80	30-55	12-35
------	---	---	0	---	---	---	---	---	---
------	Pt	---	0	---	---	---	---	---	---
------	---	---	0	---	---	---	---	---	---
------	SM	A-2	0	95-100	92-100	60-80	13-30	---	NP
loam,	SM-SC, SC, SM	A-2, A-4, A-6	0	95-100	92-100	68-90	23-45	<40	NP-15
loam,	SM-SC, SC	A-2, A-4, A-6, A7	0	95-100	92-100	70-95	30-50	25-45	4-18
------	SM, SM-SC	A-2, A-4	0	90-100	85-100	72-97	17-38	<25	NP-5
loam,	SC, ML, CL, SM	A-4, A-6	0	98-100	90-100	85-98	46-66	<35	NP-13
	CL, SC	A-6, A-7	0	98-100	95-100	75-99	45-72	25-43	11-23
------	SP-SM, SM	A-2, A-3	0	95-100	90-100	50-83	5-35	---	NP
	SM, SC, SM-SC	A-2, A-4, A-6	0	85-100	85-100	60-80	23-45	<25	NP-13
loam	SC, CL, SM, SM-SC, CL-ML	A-2, A-4, A-6	0	95-100	90-100	58-90	28-55	20-39	4-12
------	ML, CL-ML	A-4	0-3	90-100	85-100	65-100	51-98	<40	NP-10
	MH, ML	A-7	0	95-100	95-100	90-100	75-98	41-75	15-35
loam, clay	MH	A-7	0	95-100	90-100	65-100	60-98	50-75	15-35
------	SM, SM-SC, SC	A-2, A-4	0	90-100	85-100	50-95	15-45	<25	NP-14
loam,	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6	0	98-100	95-100	60-95	25-55	16-35	4-16

TABLE 15.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Herndon:											
HeB, HeC, [1]HnB----	0-13	Silt loam--------	ML, CL-ML	A-4, A-6	0	90-100	90-100	80-98	65-90	<36	NP-12
	13-52	Silty clay loam, silty clay, clay.	MH, ML	A-7	0	98-100	95-100	95-99	80-98	41-70	13-30
	52-75	Silt loam, loam, fine sandy loam.	MH, ML	A-7, A-5	0-2	90-100	85-100	80-99	70-95	41-70	9-36
Johnston:											
Jo----------	0-38	Loam----------	ML, CL, SM, SC	A-2, A-4	0	100	100	60-95	30-75	<35	NP-10
	38-66	Stratified fine sandy loam to sandy loam.	SM, SC, SM-SC	A-2, A-4	0	100	100	50-85	25-50	<35	NP-10
Kershaw:											
KeC----------	0-80	Sand----------	SP, SP-SM	A-2, A-3	0	98-100	98-100	50-80	1-7	---	NP
Kirksey:											
KrB----------	0-9	Loam----------	ML, CL-ML	A-4	0-2	90-100	88-99	80-95	70-90	<30	NP-7
	9-21	Silty clay loam, clay loam, silt loam.	ML, CL, CL-ML	A-4, A-6	0-1	95-100	90-100	90-98	80-95	20-40	4-15
	21-51	Silt loam, fine sandy loam.	ML, CL-ML, CL	A-4, A-6	0-2	95-100	90-100	85-96	55-90	<40	NP-12
Lakeland:											
LaB, LaD, [1]LkB----	0-29	Sand----------	SP-SM	A-3, A-2	0	90-100	90-100	60-100	5-12	---	NP
	29-99	Sand, fine sand	SP, SP-SM	A-3, A-2	0	90-100	90-100	50-100	1-12	---	NP
Lucy:											
LuB----------	0-26	Loamy sand------	SM, SP-SM	A-2	0	100	95-100	50-80	10-30	---	NP
	26-32	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	95-100	55-85	15-50	<30	NP-15
	32-75	Sandy loam, sandy clay loam.	SC, SM-SC	A-2, A-6, A-4	0	100	95-100	60-95	20-50	20-40	5-20
Marlboro:											
MaA, MaB----------	0-8	Sandy loam------	SM, SM-SC, ML, CL-ML	A-2, A-4	0	98-100	95-100	75-100	25-60	<35	NP-7
	8-64	Sandy clay, clay loam, clay.	CL, ML	A-4, A-6, A-7	0	98-100	95-100	78-100	51-70	25-48	8-20
	64-80	Sandy clay loam, sandy clay, clay.	CL, ML, SM, SC	A-4, A-6, A-7	0	98-100	95-100	74-100	45-70	24-48	8-20
Nason:											
NaB, NaC, [1]NaE----	0-11	Silt loam--------	ML, CL, CL-ML	A-4	0	80-100	75-100	65-100	50-90	20-38	NP-10
	11-41	Silty clay loam, silty clay, clay.	MH, CH	A-7	0	75-100	70-100	60-100	55-95	50-66	20-36

See footnote at end of table.

TABLE 15.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Norfolk:											
NoA, NoB	0-17	Loamy sand	SM	A-2	0	95-100	92-100	50-91	13-30	---	NP
	17-75	Sandy loam, sandy clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	91-100	70-96	30-55	20-40	4-20
Orange:											
OaB	0-11	Loam	SM, ML, CL-ML, SM-SC	A-4	0	90-95	85-95	75-95	45-85	<24	NP-6
	11-40	Clay, silty clay, silty clay loam.	CH	A-7	0	90-95	85-95	75-95	65-90	70-99	45-70
Orangeburg:											
ObA, ObB, ObC, [1]OgB, [1]OgD	0-12	Loamy sand	SM	A-2	0	98-100	95-100	60-75	14-27	---	NP
	12-18	Sandy loam	SM	A-2	0	98-100	95-100	70-84	25-35	<30	NP-4
	18-57	Sandy clay loam	SC, CL, SM	A-6, A-4	0	98-100	95-100	71-91	38-55	22-40	7-19
	57-90	Sandy clay loam, sandy clay.	SC, CL	A-6, A-4	0	98-100	95-100	70-97	40-65	25-40	8-21
Pelion:											
PeB, PeD, [1]PnC	0-10	Loamy sand	SM, SM-SC	A-2, A-4	0	95-100	90-100	50-90	13-40	<30	NP-7
	10-26	Sandy clay loam	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6	0	95-100	92-100	50-90	25-55	20-40	5-18
	26-48	Sandy clay loam, sandy clay.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6	0	98-100	92-100	50-90	25-60	20-40	5-20
	48-57	Sandy clay loam, sandy loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	98-100	92-100	50-90	18-50	<40	NP-18
Persanti:											
Ps	0-5	Very fine sandy loam.	SM, SM-SC, ML, CL-ML	A-4	0	100	95-100	80-98	40-60	<35	NP-7
	5-75	Clay, silty clay	CL, ML, CH, MH	A-6, A-7	0	100	98-100	90-100	65-95	35-60	12-30
Rains:											
Ra	0-12	Sandy loam	SM, SM-SC	A-2, A-4	0	100	95-100	50-85	25-50	<35	NP-10
	12-46	Sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	100	98-100	65-98	30-70	18-40	4-18
	46-62	Sandy clay loam, clay loam, sandy clay.	SC, SM-SC, CL, CL-ML	A-4, A-6, A-7	0	100	98-100	65-98	36-72	18-45	4-22
	62-68	Sandy loam, sandy clay loam, sandy clay.	SM, SC, ML, CL	A-2, A-4, A-6	0	100	95-100	60-95	30-60	15-40	3-18

See footnote at end of table.

for the entire

osion	Erosion factors	
Concrete	K	T
?ate	0.20	4
?ate	0.24	
?ate	0.17	
?ate	0.32	4
?ate	0.32	
---	---	
---	0.17	5
---	0.32	
---	0.32	5
---	0.24	
---	0.24	
---	0.32	5
---	0.37	
---	0.37	
?ate	0.28	4
?ate	0.32	
---	---	
---	0.15	5
---	0.20	
---	0.15	
?ate	0.37	5
?ate	0.37	
---	---	
---	0.28	4
---	0.32	
---	---	
---	0.15	3
---	---	
?ate	0.20	4
?ate	0.28	
?ate	0.28	
?ate	0.28	5
?ate	0.37	
?ate	0.37	
---	0.20	5
---	0.20	
---	0.20	

LS--Continued

Risk of corrosion		Erosion factors	
Uncoated steel	Concrete	K	T
gh	High	0.43	3
gh	High	0.37	
gh	High	0.43	
derate	High	0.20	5
derate	High	0.24	
gh	High	0.43	3
gh	High	0.37	
gh	High	0.43	
gh	High	0.20	4
gh	High	0.17	
w	High	0.15	5
derate	Moderate	0.43	3
derate	High	0.43	
derate	High	0.43	
w	Moderate	0.17	5
w	Moderate	---	
w	High	0.20	5
w	High	---	
w	High	---	
gh	Moderate	0.20	4
gh	Moderate	0.20	
gh	High	0.20	
gh	High	0.32	4
gh	High	0.28	
derate	High	0.17	5
derate	High	0.24	
gh	Moderate	0.49	2
gh	Moderate	0.28	
derate	Moderate	0.20	5
derate	Moderate	0.24	
derate	Moderate	0.24	
derate	Moderate	0.24	
gh	High	0.24	3
gh	High	0.17	
gh	High	0.20	
gh	High	0.15	

rosion	Erosion factors	
Concrete	K	T
h----------	0.43	5
h----------	0.20	
h----------	0.17	5
h----------	0.24	
h----------	0.28	
h----------	0.28	
h----------	0.24	5
h----------	0.32	
h----------	0.20	5
h----------	0.24	
----------	---	
n----------	0.32	5
n----------	0.37	
erate-------	0.10	4
erate-------	0.10	
erate-------	0.17	5
erate-------	0.20	
n----------	0.17	3
n----------	0.20	
n----------	0.17	
n----------	0.17	
n----------	0.24	2
n----------	0.28	
n----------	0.28	
----------	---	

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less than; >

Bedrock	
n	Hardness

0	Rippable

60	Rippable
2	---
0	---

TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness
					Ft			In	
Marlboro: MaA, MaB	B	None	---	---	>6.0	---	---	>60	---
Nason: NaB, NaC, NaE	C	None	---	---	>6.0	---	---	40-60	Rippable
Norfolk: NoA, NoB	B	None	---	---	3.5-5.0	Perched	---	>60	---
Orange: OaB	D	None	---	---	1.0-3.0	Apparent	Dec-May	40-60	Hard
Orangeburg: ObA, ObB, ObC, [1]OgB, [1]OgD	B	None	---	---	>6.0	---	---	>60	---
Pelion: PeB, PeD, [1]PnC	B/D	None	---	---	1.0-2.5	Perched	Nov-Apr	>60	---
Persanti: Ps	C	None	---	---	2.0-3.5	Apparent	Dec-Apr	>60	---
Rains: Ra	B/D	Common	Brief	Dec-Mar	0-1.0	Apparent	Nov-Apr	>60	---
Smithboro: Sm	D	None	---	---	0.5-1.5	Apparent	Dec-Mar	>60	---
State: StA	B	None	---	---	>6.0	---	---	>60	---
Tawcaw: Tc	C	Common	Long	Dec-Apr	1.5-2.5	Apparent	Nov-Apr	>60	---
Toccoa: To	B	Common	Brief	Jan-Dec	2.5-5.0	Apparent	Dec-Apr	>60	---
Troup: TrB	A	None	---	---	>6.0	---	---	>60	---
Udorthents: Ud.									
Urban land: Ur.									
Vaucluse: VaC, VaD	C	None	---	---	>6.0	---	---	>60	---
Wedowee: WeB, WeE	B	None	---	---	>6.0	---	---	48-60	Rippable

[1]This map unit is made up of two or more dominant kinds of soil. See map unit description for the composition and behavior of the whole map unit.

TABLE 18.--ENGINEERING TEST DATA

[Tests performed by South Carolina Highway Department in cooperation with the Bureau of Public Roads, U. S. Department of Commerce, in accordance with standard procedures of the American Association of State Highway and Transportation Officials. NP means nonplastic]

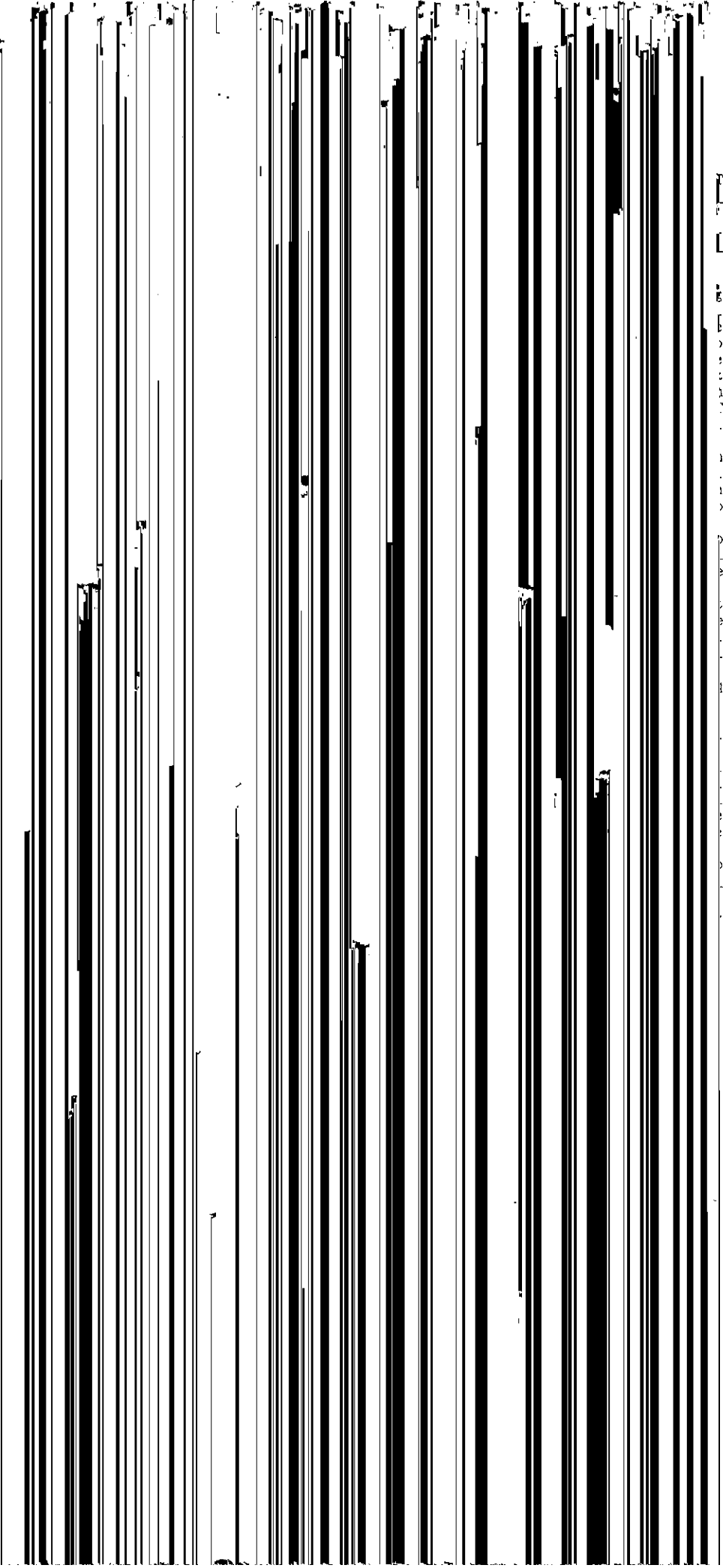
Soil name and location	Parent material	Laboratory number	Depth	Mechanical analysis: Percentage passing sieve-- No. 4 (4.7 mm)	No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 60 (0.25 mm)	No. 200 (0.074 mm)	Percentage smaller than 0.005 mm	Liquid limit	Plasticity index	Classification: AASHTO	Unified
			Inches							Pct			
Blanton sand: Approximately 2 miles north of Columbia on secondary road 1560, 400 feet from its intersection with State Route 83. Site is 200 feet north of road.	Sandy and loamy, Coastal Plain sediment.	I-55545	0-9	---	100	---	38	10	4	--	NP	A-3	SP-SM
		I-55546	9-21	---	100	---	34	14	7	--	NP	A-2-4	SM
		I-55547	21-50	---	100	---	39	14	8	--	NP	A-2-4	SM
		I-55548	50-61	---	100	---	40	25	20	20	4	A-2-4	SM
Cantey loam: 1.1 miles east of Kingsville on secondary road 1032, then 0.8 mile south on private road; on west bank of ditch.	Clayey Coastal Plain sediment.	I-05901	0-8	---	100	79	68	49	30	29	7	A-4(3)	SM-SL
		I-05902	11-24	---	100	82	75	65	46	29	11	A-6(6)	CL
		I-05904	24-45	---	100	76	67	60	48	40	19	A-6(9)	CL
		I-05904	45-80	---	100	95	93	83	61	36	15	A-6(10)	CL
Chastain silty clay loam: Approximately 4 miles southeast of Columbia on State Route 48 and 0.4 mile west of intersection of State Route 48 and secondary road 48.	Clayey alluvium.	I-55555	4-18	---	100	---	82	78	70	57	36	A-7-6(19)	CH
		I-55556	18-41	---	100	---	89	86	63	46	20	A-7-6(13)	CL
		I-55557	41-65	---	100	---	95	89	71	52	18	A-7-5(13)	MH
Chewacla loam: Approximately 3 miles southeast of Columbia, 1.0 mile west of State Route 48 and secondary road 48 and 1.0 mile northeast of sewage treatment plant.	Loamy alluvium of Piedmont province.	I-55561	13-20	---	100	---	95	84	61	61	29	A-7-5(20)	MH
		I-55562	20-38	---	100	---	96	80	54	54	22	A-7-5(16)	MH
Chewacla soils: 2.5 miles north of U.S. Route 76 at South Carolina State Commission of Forestry Headquarters on Broad River floodplain, about 1300 feet south of the river.	Loamy alluvium.	I-25780	0-8	---	100	---	99	83	44	--	NP	A-4(8)	ML
		I-25781	13-39	---	100	---	98	81	50	32	14	A-6(10)	CL
		I-25782	55-80	---	100	---	97	75	55	38	18	A-6(11)	CL
Chewacla soils: Approximately 4 miles northeast of Columbia; 0.5 mile on road 1282, west of intersection of secondary roads 1382 and 1282. Site is 300 feet south of road.	Loamy alluvium.	I-55549	6-13	---	100	---	89	74	42	44	10	A-5(9)	ML
		I-55550	19-33	---	100	---	88	77	51	54	19	A-7-5(15)	MH
		I-55551	33-60	---	100	---	93	78	.52	53	19	A-7-5(15)	MH

TABLE 18.--ENGINEERING TEST DATA--Continued

Soil name and location	Parent material	Laboratory number	Depth	Mechanical analysis: Percentage passing sieve-- No.4 (4.7 mm)	No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 60 (0.25 mm)	No. 200 (0.074 mm)	Percentage smaller than 0.005 mm	Liquid limit	Plasticity index	Classification: AASHTO	Unified
			Inches							Pct			
arendon sandy loam: .7 miles northeast of Gads- en and 3 miles southwest of astover; 700 feet south of a onnecting road between econdary roads 84 and 1322.	Loamy Coastal Plain sediment.	I-059-5	0-6	99	99	83	73	38	16	--	NP	A-4(1)	SM
		I-05906	19-25	99	97	79	73	49	32	29	6	A-4(3)	SM
		I-05907	25-36	100	98	81	74	47	28	26	7	A-4(2)	SM-SC
cville loam: .8 mile east of Gadsden on ate Route 48 to a field road d 0.4 mile north to a ditch- nk on east side of field ad.	Clayey Coastal Plain sediment.	I-05908	0-6	---	100	85	76	58	39	26	6	A-4(5)	CL-ML
		I-05909	6-22	---	100	93	88	80	58	38	19	A-6(12)	CL
		I-05910	28-40	---	100	87	79	64	44	33	13	A-6(7)	CL
		I-05911	56-80	---	100	92	80	53	50	49	24	A-7-6(10)	CL
eville sandy loam: proximately 3 miles north- st of Eastover; 2 miles uth of intersection of U.S. ute 76 and State Route 263, east side of a north-south rt road between Wateree ver State Route 263.	Clayey sediment, Coastal Plain.	I-55572	12-84	---	100	---	68	53	47	39	14	A-6(5)	CL
uay sand: the east bank of U.S. Route 21, approximately 5 miles rth of its intersection with terstate 20, and 0.5 mile rth of intersection with condary road 641.	Loamy and sandy Coastal Plain sediment.	I-05874	8-32	100	99	64	45	20	11	--	NP	A-2-4	SM
		I-05875	46-58	99	98	61	44	25	18	--	NP	A-2-4	SM
		I-05876	68-79	100	95	58	46	31	23	30	6	A-2-4	SM
ndon silt loam: proximately 5 miles north- st of Columbia. 4 miles rth of intersection of U.S. ute 76 and Interstate 20, 2 mile southwest of inter- ction of U.S. Route 76 and condary road 674. Site is north bank of road 674.	Carolina slate.	I-55552	0-5	---	100	---	91	85	36	36	12	A-6(9)	CL
		I-55553	21-31	---	100	---	93	83	54	55	19	A-7-5(15)	MH
		I-55554	31-48	---	100	---	93	83	55	44	17	A-7-6(12)	ML
on silt loam: proximately 13 miles north- st of Columbia, 0.5 mile rthwest of intersection of terstate 26 and U.S. Route 6; 0.5 mile northeast on ods road. Site is 50 feet st of road.	Saprolite (Carolina slate)	I-55567	0-5	---	100	---	82	60	31	38	2	A-4(5)	ML
		I-55568	19-34	---	100	---	91	84	71	64	30	A-7-5(20)	MH
		I-55569	34-41	---	100	---	92	86	72	51	21	A-7-5(15)	MH

nued

pal analysis					Classification	
ge sieve--			Liquid limit	Plasticity index		
mm)	No. 60 (0.25 mm)	No. 200 (0.074 mm)	Percentage smaller than 0.005 mm		AASHTO	Unified
			Pct			
- -	56	38	32	29	7 A-4(1)	SC
-	56	40	34	34	8 A-4(1)	SM
3	44	28	14	- -	NP A-2-4	SM
1	66	55	37	31	9 A-4(4)	CL
4	17	8	4	- -	NP A-1-b	SW-SM



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