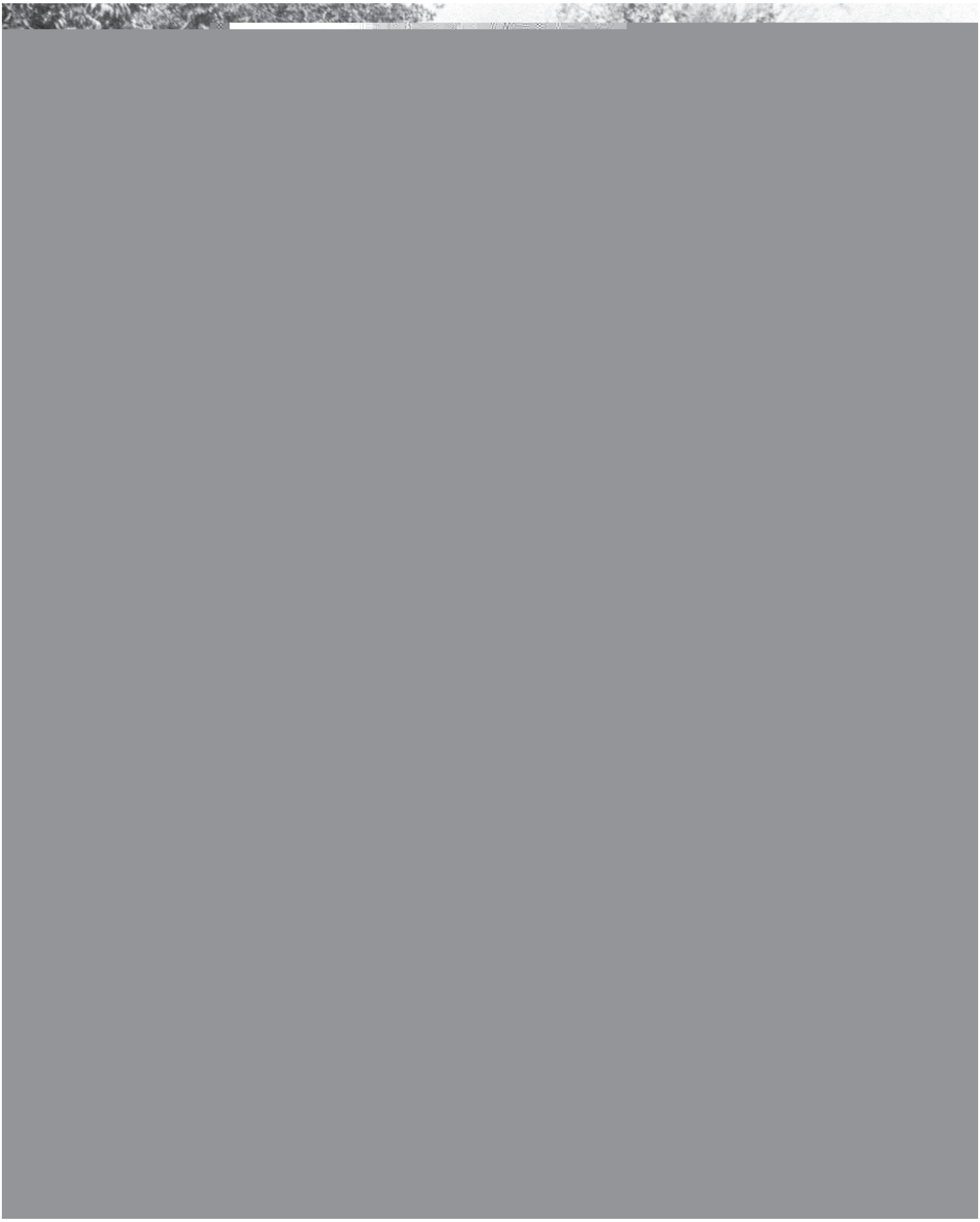

HOW TO USE

THIS SOIL SURVEY

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 done in the period 1970-1976. 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 and the Mississippi Agricultural and Forestry Experiment Station. It is part of the technical assistance furnished to the Hinds County Soil and Water Conservation District.

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

Cover: Jackson, the county seat of Hinds County, is also the state capital. Beef cattle and cotton are important sources of income in Hinds County. Loring silt loam, 2 to 5 percent slopes, eroded, is widely used for grazing, and Reidtown silt loam is well suited to cotton.

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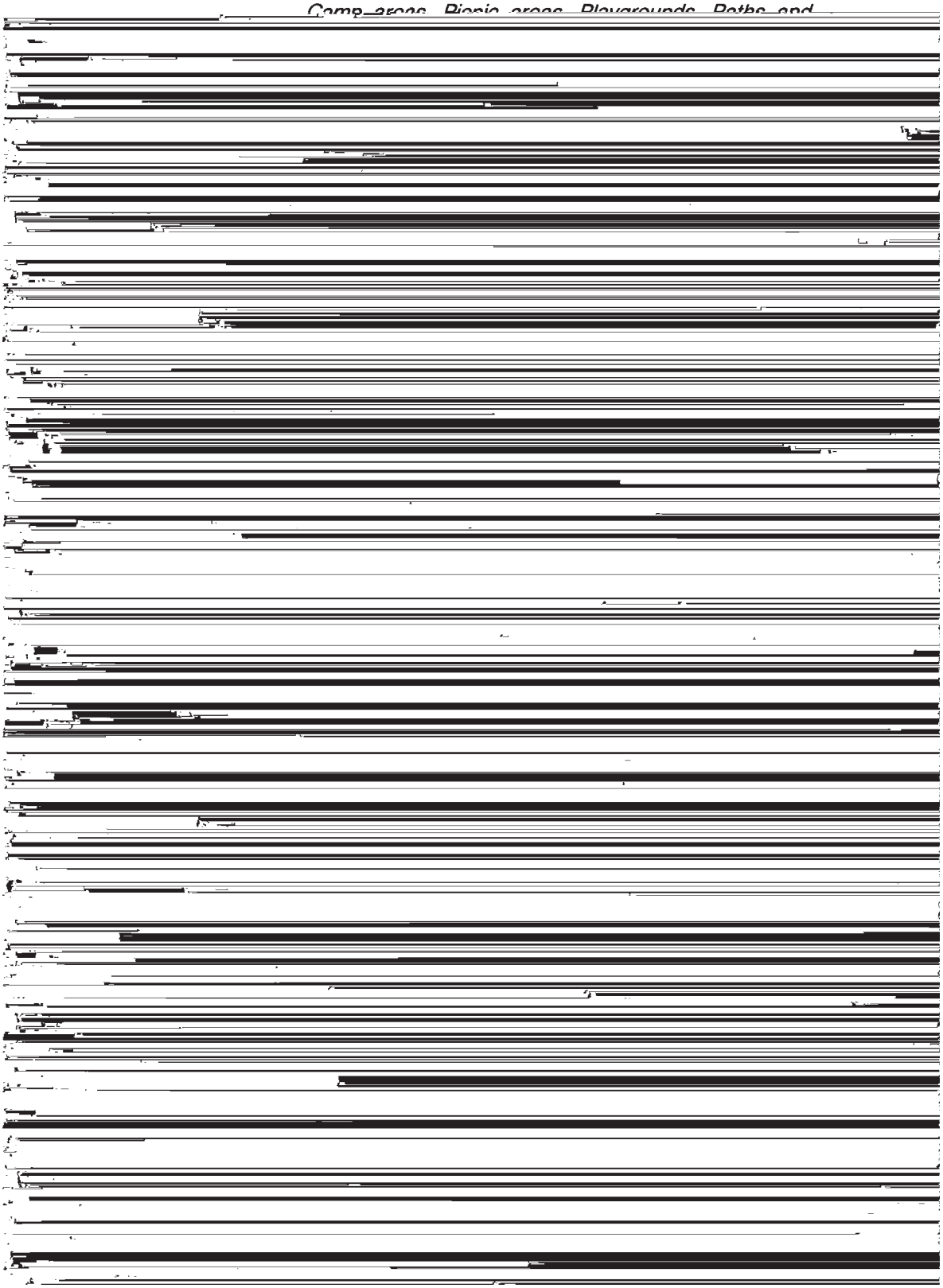
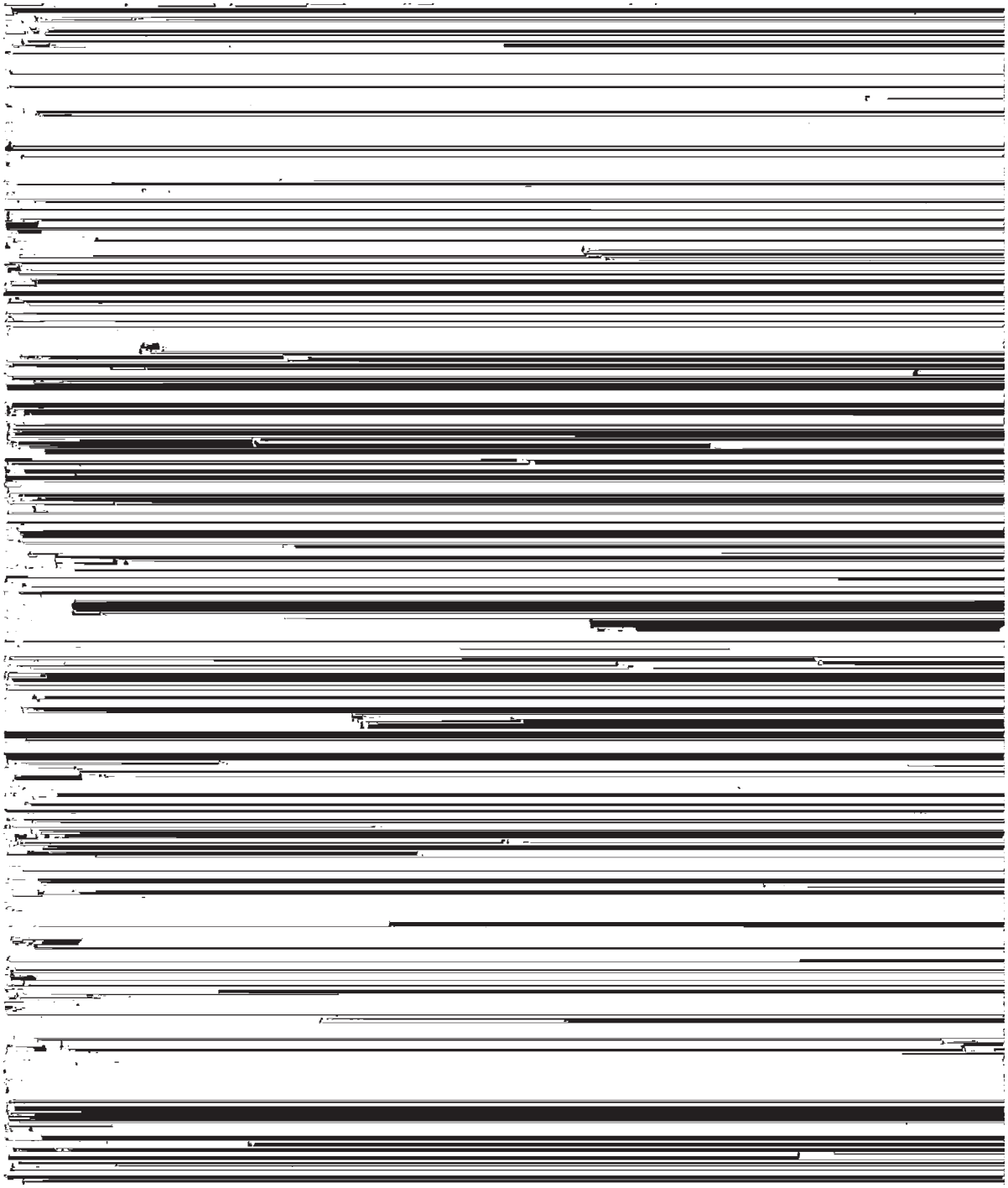
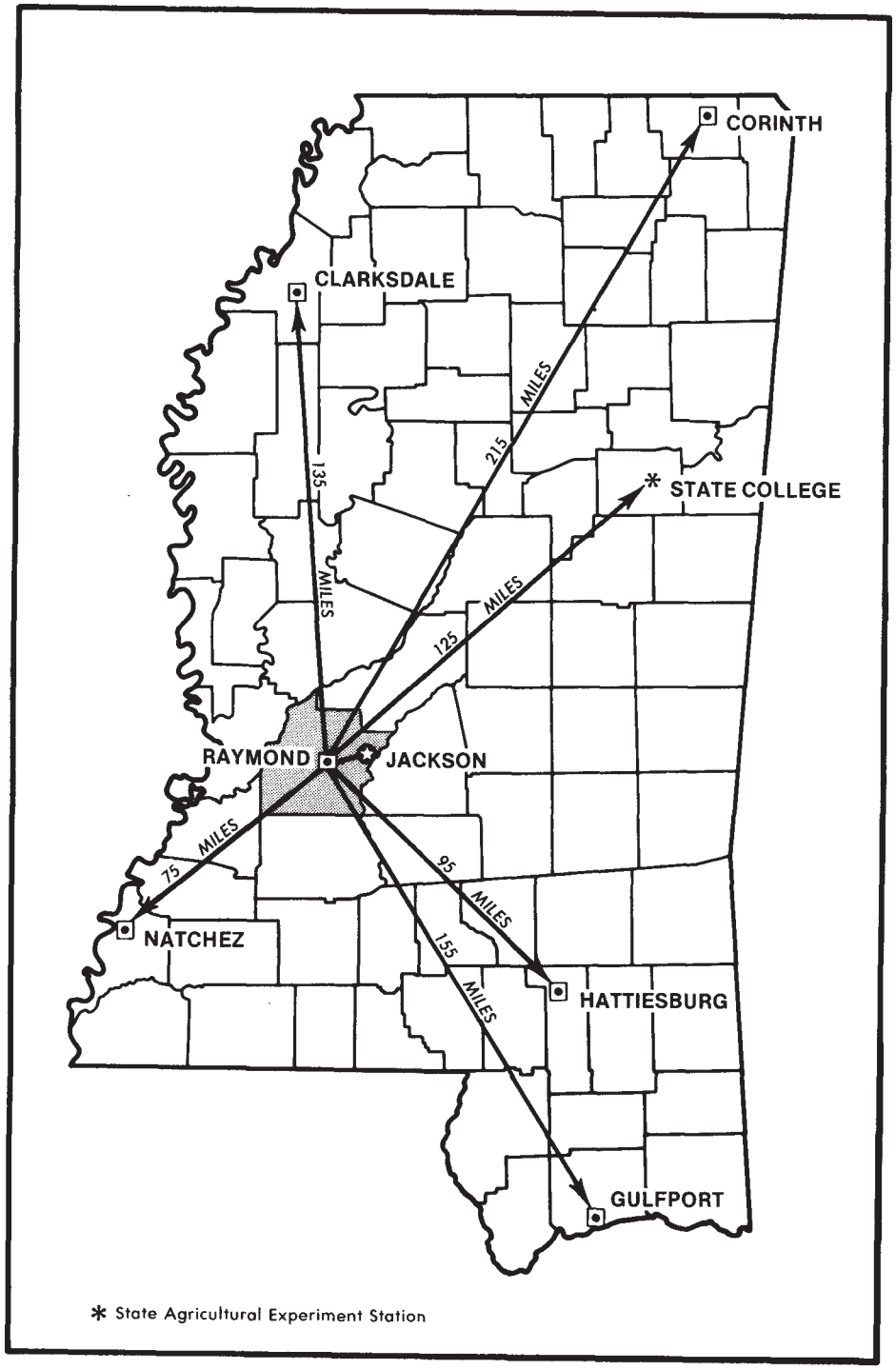


Foreword

This Soil Survey contains much information that can be used in land-planning programs in Hinds County. Of prime importance are the predictions of soil behavior for selected land uses. Also highlighted are limitations or hazards to





Location of Hinds County in Mississippi.

SOIL SURVEY OF HINDS COUNTY, MISSISSIPPI

By William A. Cole, Roger W. Smith, John W. Keyes, Frank T. Scott, and Lloyd B. Walton,
Soil Conservation Service

United States Department of Agriculture, Soil Conservation Service, in cooperation with
the Mississippi Agricultural and Forestry Experiment Station

HINDS COUNTY is in the west-central part of Mississippi. Jackson, the county seat, is also the state capital. It has a population of 153,968. According to the 1970

In winter the average temperature is 48 degrees F, and the average daily minimum temperature is 37 degrees. The lowest temperature on record, which oc-

History and development

In 1820, the Mississippi legislature established Hinds County within the area ceded to the United States by the Choctaw Indians in the treaty of Doaks Stand. The new county was named in honor of General Thomas Hinds (*4*). In 1821, LeFleur's Bluff, the county seat, was renamed Jackson in honor of General Andrew Jackson.

Hinds County is divided into two main cultural areas. One is the highly industrial and heavily populated metropolitan area of Jackson. The other is mainly agricultural, although there has been considerable urban expansion in this area in recent years.

There are more than 300 manufacturing plants in Hinds County producing more than 150 products. Most of the plants are in Jackson.

Physiography, relief, and drainage

The topography of Hinds County includes high, rugged hills with steep side slopes and narrow valleys; lower, more rolling hills, wider valleys, and gentler slopes; and flat flood plains. A prominent ridge runs generally north to south across the eastern third of the county and forms a divide between the Pearl River and the Big Black River drainage basins. Some of the highest areas in the county are along the southern part of this divide. The highest elevation is 488 feet, and the lowest is less than 100 feet. The area of greatest relief is in the south-

15,593; chickens, 3 months old and older, 943,360; and broilers, less than 3 months old, 61,316.

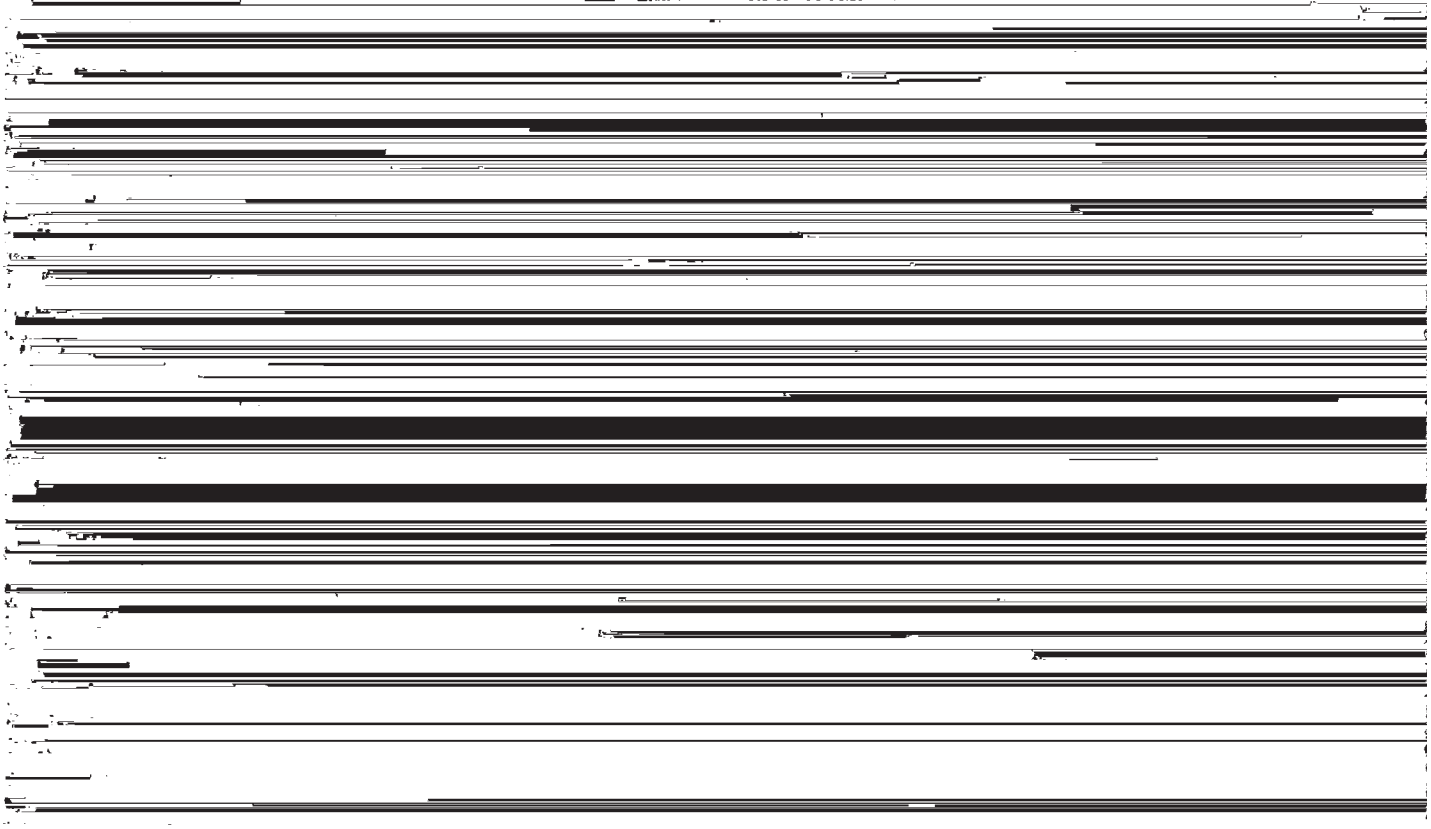
The number of farms in 1969 was 1,639, and the average size of a farm was 237 acres. Full owners operated 1,088 farms; part owners operated 309 farms; and tenants operated 242 farms.

How this survey was made

Soil scientists made this survey to learn what kinds of soil are in the survey area, where they are, and how they can be used. The soil scientists went into the area knowing they likely would locate many soils they already knew something about and perhaps identify some they had never seen before. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; the native plants or crops; the kinds of rock; and many facts about the soils. They dug many holes to study soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material, which has been changed very little by leaching or by plant roots.

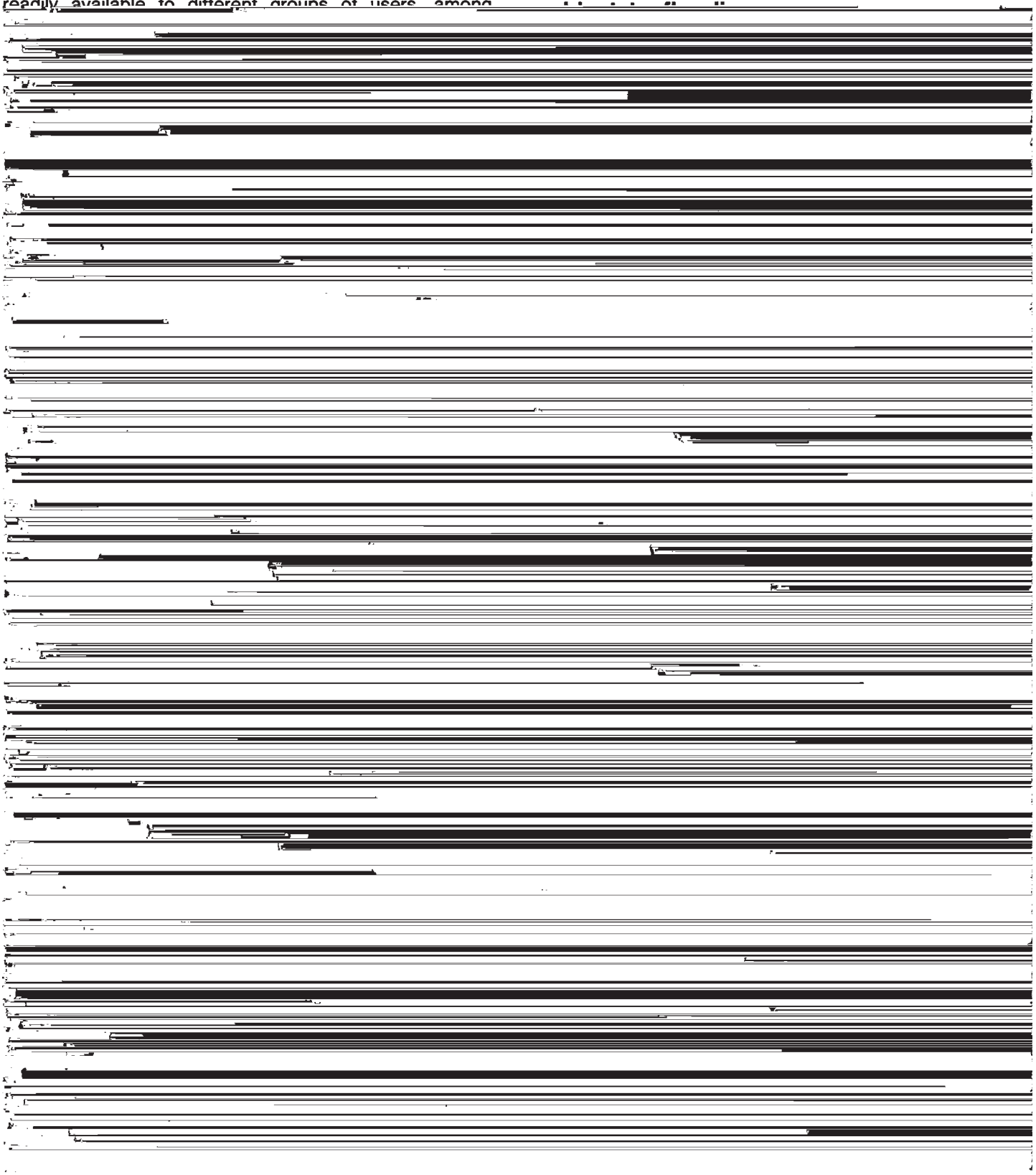
The soil scientists recorded the characteristics of the profiles they studied, and they compared those profiles with others in counties nearby and in places more distant. Through correlation, they classified and named the soils according to nationwide, uniform procedures.

After classifying and naming the soils, the soil scien-



information then needs to be organized so that it is readily available to different groups of users among

Areas dominated by silty soils that are



Ariel soils. The rest is Adler, McRaven, and Riedtown soils and soils in old sloughs and depressions that are covered with water during most of the year.

Oaklimeter soils are generally in the more nearly flat areas between the streams, old sloughs, and oxbow lakes. They are silty, moderately well drained soils that have a seasonal high water table. Ariel soils are at a slightly higher elevation, mainly in bands adjacent to stream channels, sloughs, and oxbow lakes. They are silty and well drained.

Most of this map unit is woodland. In summer, some areas are used for pasture. The potential for grasses and legumes is fair. This map unit has poor potential for the row crops commonly grown in the county. Flooding for long periods is the main limitation to use of these soils

Areas dominated by silty soils on uplands

4. Loring-Siwell-Urban land

Gently sloping to moderately steep silty soils that have a fragipan and soils that are underlain by plastic clay, and Urban land

This map unit is in the northeastern part of Hinds County and includes the city of Jackson. The landscape is mainly gently sloping to moderately steep, but it ranges from nearly level to hilly. Narrow flood plains extend into this map unit.

This map unit makes up about 10 percent of the county. It is about 20 percent Loring soils, 15 percent Siwell soils, and 40 percent Urban land. The rest is

Most of this map unit is woodland. A small acreage, where slopes are favorable, is in pasture. This map unit has poor potential for most of the row crops grown in the county and fair to poor potential for grasses and legumes. Steep slopes, a hazard of erosion, and a shallow rooting depth are the main limitations. The Loring soils, which are the major part of this unit, have good potential for use as woodland, and the Kisatchie soils have poor potential because in most places they are too shallow for good tree growth.

Parts of this map unit have good or fair potential for urban use, but most of the unit has poor potential because of steep slopes and the shallow depth to sandstone.

The potential is fair to good for the development of habitat for openland and woodland wildlife. Most of this map unit has poor potential for recreation uses mainly because of the steep slopes. Some parts have fair or good potential for recreation uses such as hunting, hiking, and horseback riding.

6. Loring-Memphis

Gently sloping to moderately steep, moderately well drained silty soils that have a fragipan and well drained silty soils

This map unit is in the central part of Hinds County. The landscape is marked by moderately steep side slopes and gently sloping ridgetops that are generally less than one-eighth mile wide and in many places less than 300 feet wide. The slopes are dissected by many short drainageways and by flood plains.

This map unit makes up about 6 percent of the county. It is about 45 percent Loring soils and 25 percent Memphis soils. The rest is Grenada, Calloway, Calhoun,

potential for such recreation uses as hunting and horseback riding.

7. Loring-Providence-Grenada

Nearly level to rolling, moderately well drained silty soils that have a fragipan

This map unit is in the eastern part of Hinds County. The landscape is generally nearly level to rolling but ranges to moderately steep. It is marked by narrow ridgetops, generally less than one-eighth mile wide, by side slopes that are dissected by short drainageways, and by narrow flood plains.

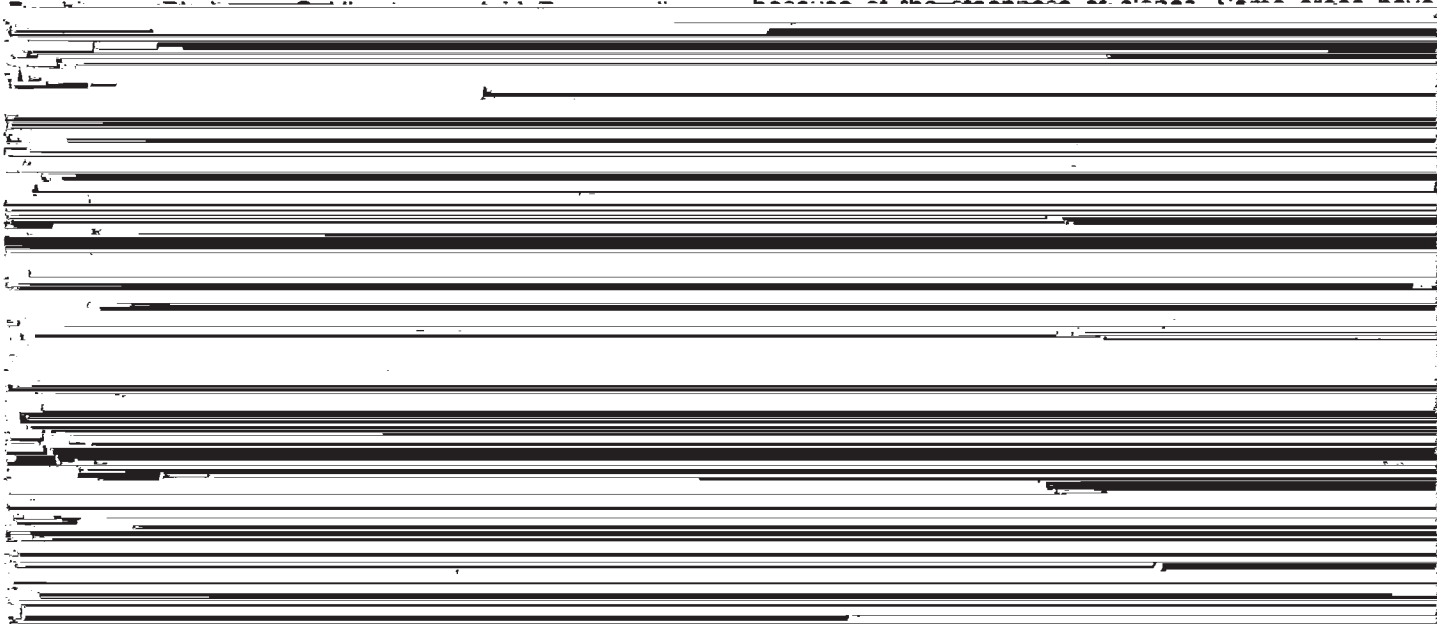
This map unit makes up about 24 percent of the county. It is about 40 percent Loring soils, 25 percent Providence soils, and 11 percent Grenada soils. The rest is Calloway, Smithdale, Oaklimeter, Riedtown, and McRaven soils.

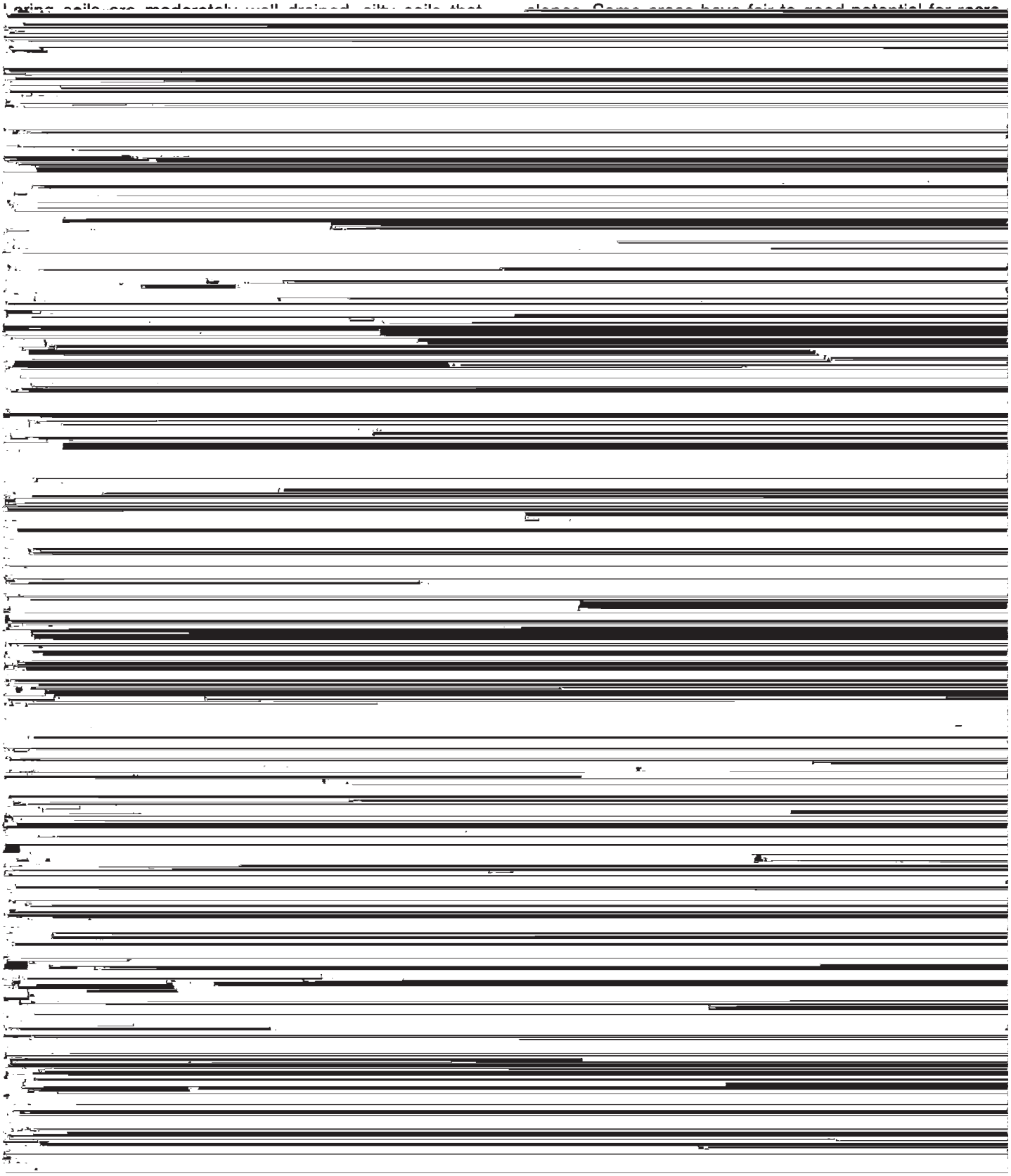
Loring, Providence, and Grenada soils are moderately well drained silty soils that have a fragipan. Loring and Providence soils are generally in the higher and steeper areas, and Grenada soils are in the lower and smoother areas.

Most of this map unit is pasture and woodland. A moderate acreage where slopes are favorable is in crops. This map unit has fair to poor potential for most crops commonly grown in the county and good potential for grasses and legumes. The steepness of slopes and the erosion hazard are the main limitations. The potential for use as woodland is good. There are no significant limitations to woodland use and management.

This map unit generally has fair potential for urban uses. In some steep areas it has poor potential.

The potential is good for the development of habitat for openland and woodland wildlife. Most areas of this map unit have fair potential for recreation uses mainly





Lexington soils generally are on the middle and upper parts of slopes, and Memphis soils are on the ridgetops and the upper part of side slopes.

Most of this map unit is woodland. A moderate acreage in areas where slopes are favorable is in pasture. This map unit has poor potential for row crops commonly grown in the county and poor to fair potential for grasses and legumes. Steep slopes and the erosion hazard are the main limitations. This map unit has good potential for use as woodland. There are no significant limitations to woodland use and management.

Parts of this map unit have good to fair potential for urban uses, but because of the steep slopes most of the

come the limitations and the hazard of continuing soil-related problems after practices are installed.

Kinds of land uses considered include cropland, woodland, urban development, and recreation development. Cultivated farm crops grown extensively include cotton, corn, and soybeans. Woodland refers to land in trees. Urban areas include those used as residential, commercial, and industrial sites. Recreation uses include nature study areas, trails, and wildlife areas.

About 21 percent, or 116,881 acres, of Hinds County is used for cultivated crops, mostly soybeans, cotton, and corn. Cropland is scattered throughout the county in areas of soils that have good to fair potential for row

units, however, are suitable sites for houses or small commercial buildings.

Map units 6, 7, 8, and 12 have fair potential for urban use. Low strength and wetness are the main limitations of these soils. Most of the limitations can be overcome by proper design and careful installation. Because Grenada, Loring, and Providence soils perc slowly, there is a

slopes, eroded, is one of several phases within the Memphis series.

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

A *soil complex* consists of areas of two or more soils

Included in mapping are small areas of Riedtown and McRaven soils and a few areas of soils that are better drained than the Adler soil.

This soil is medium acid to mildly alkaline. The available water capacity is very high, and permeability is moderate. Runoff is slow, and the erosion hazard is slight. Flooding of brief duration is common under normal conditions, mostly in winter and spring. This soil has a seasonally high water table in winter and spring. The

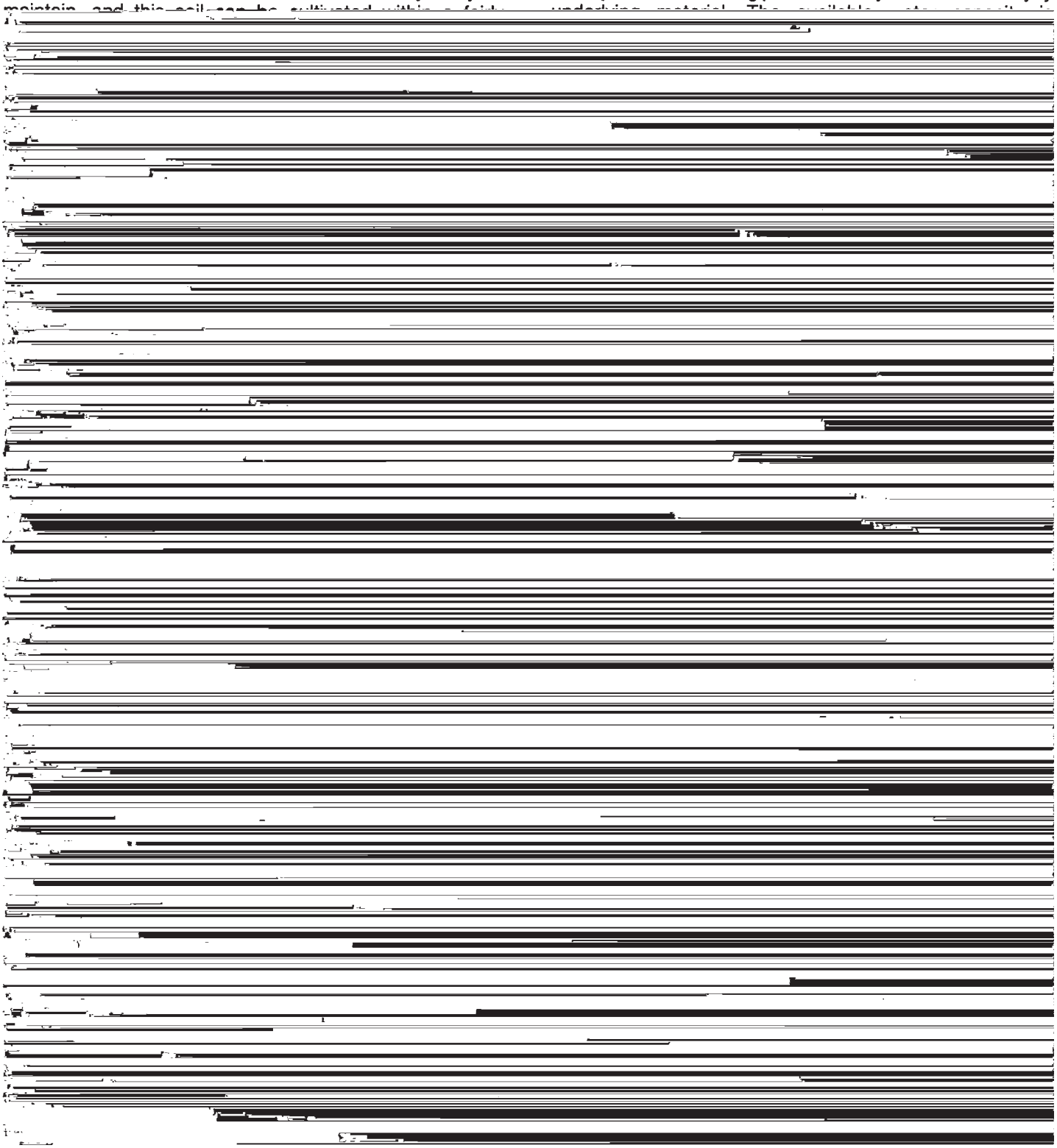
silty clay loam that has brown mottles. The next layer, to a depth of about 80 inches, is light brownish gray silt loam that has brown or gray and brown mottles.

The surface layer is very strongly acid to neutral, and the subsoil is slightly acid to moderately alkaline. Permeability is very slow, and the available water capacity is medium. Runoff is slow.

Typically, the surface layer of Deerford soils is dark

Permeability is moderate in the upper part, moderately slow in the fragipan, and very slow in the clayey underlying material. The available water capacity is medium. Runoff is slow to medium. Good tilth is fairly easy to

This soil is very strongly acid to neutral to a depth of 67 inches; below this depth, it is neutral to moderately alkaline. Permeability is moderate in the upper part, moderately slow in the fragipan, and very slow in the clayey



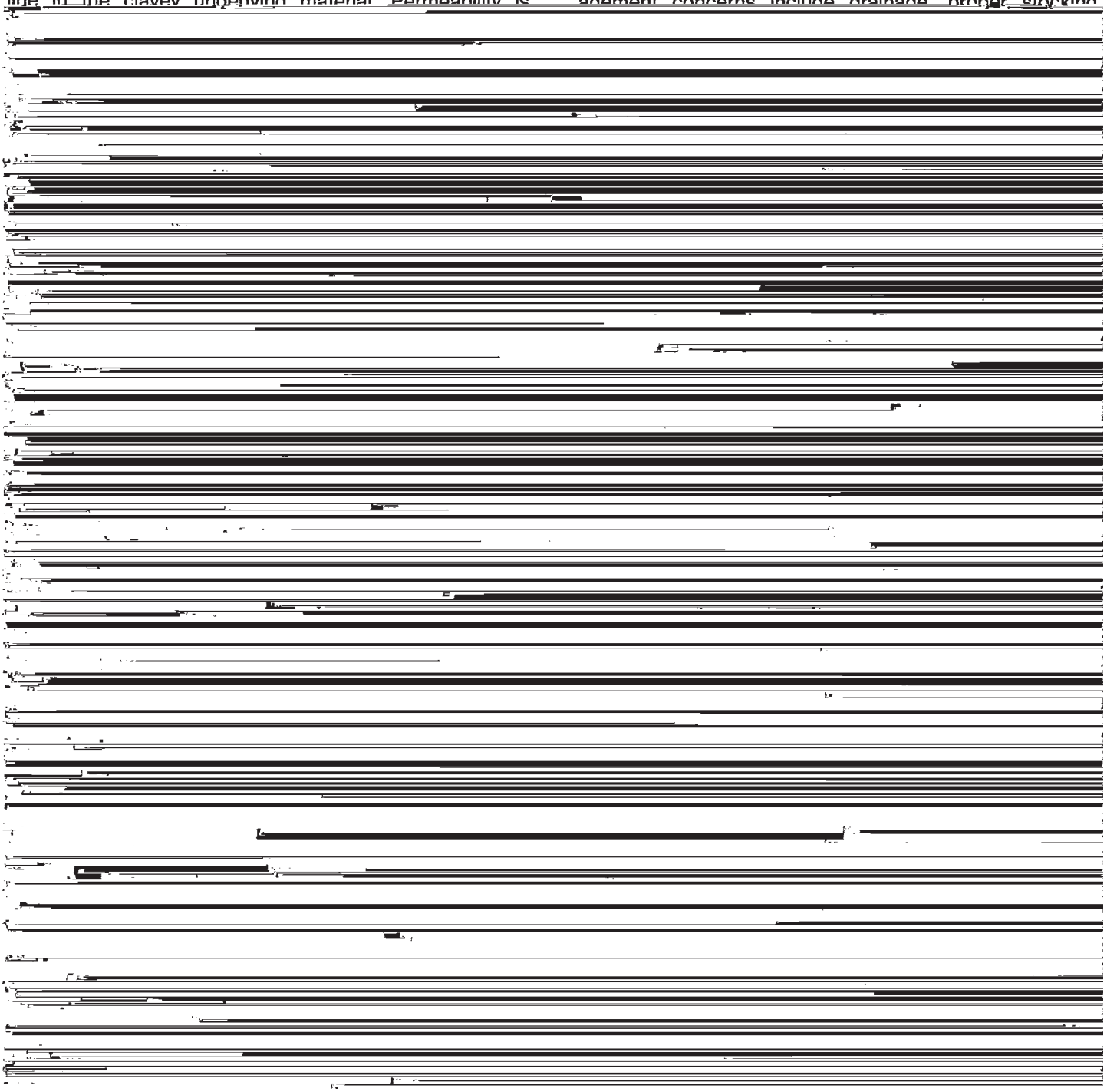
about 51 inches, there is a compact, brittle fragipan that is yellowish brown in the upper part and has grayish and brownish mottles in the lower part. Below the fragipan, to a depth of 67 inches, the soil material is yellowish brown silty clay loam that has grayish mottles. The underlying material, to a depth of 90 inches, has brownish mottles.

The Byram soil is very strongly acid to neutral in the upper part of the profile and neutral to moderately alkaline in the clayey underlying material. Permeability is

is not drained, the subsoil is waterlogged and poorly aerated for long periods.

Most of this soil is in pasture or is used as woodland. It has fair potential for corn, soybeans, and small grain. A complete drainage system is needed if this soil is used for crops.

This soil has good potential for pasture grasses, including improved bermudagrass and bahiagrass. Management concerns include drainage, proper stocking



grass. Management concerns include proper stocking, controlling grazing, and controlling weeds and brush.

The soil has good potential for water oak, cherrybark oak, loblolly pine, shortleaf pine, sweetgum, and yellow-poplar. Wetness is the main limitation to the use of

The Calloway soil has poor potential for most urban uses. Wetness is the main limitation, but this limitation can be overcome by drainage.

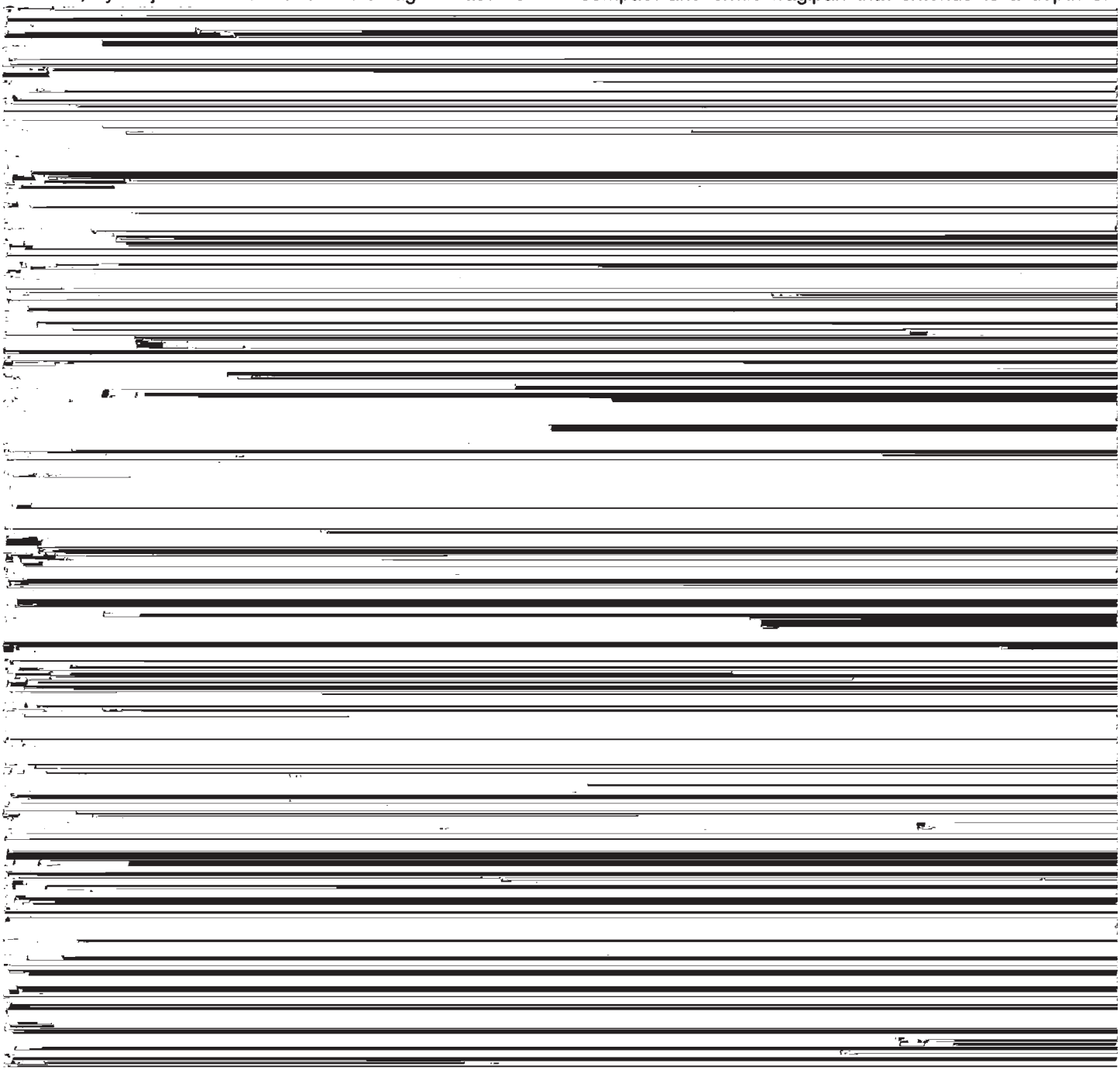
Urban land is mostly altered or reworked soil material that has no identifiable soil profile. It is used mostly as

The soils in this association have good potential for cherrybark oak, eastern cottonwood, loblolly pine, Nuttall oak, sweetgum, American sycamore, and yellow poplar. The use of equipment is restricted during periods of flooding, but special equipment can be used and logging can be done in the drier seasons.

The soils in this association have poor potential for farming and for urban use. Flooding and wetness are the main limitations. These limitations can be overcome, however, by major flood control and drainage measures.

GrB—Grenada silt loam, 2 to 5 percent slopes. This is a moderately well drained soil that has a fragipan. This soil is on uplands in areas that range from 10 to 40 acres in size.

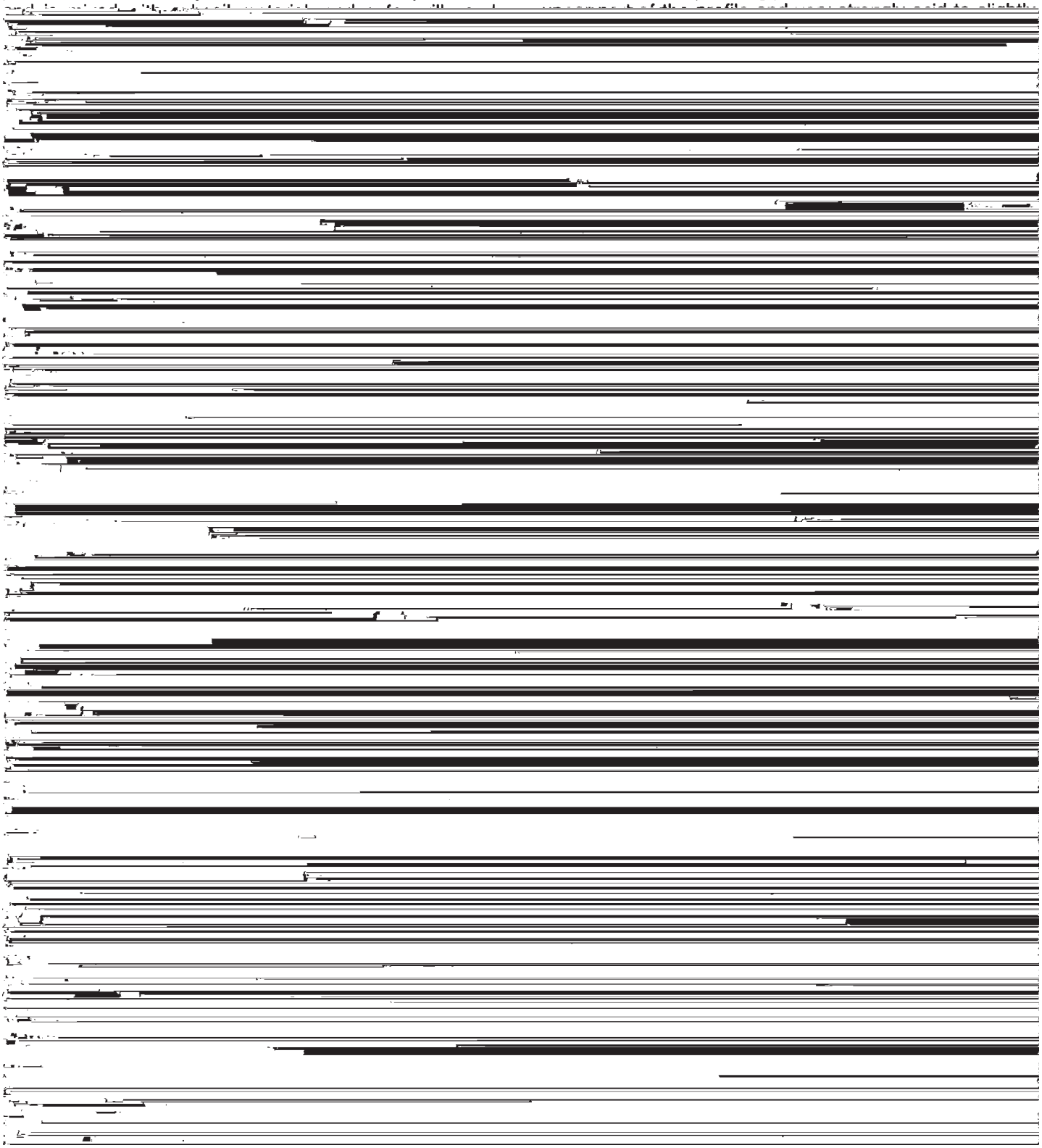
Typically, the surface layer is dark grayish brown to brown silt loam about 4 inches thick. The subsoil, to a depth of about 27 inches, is silt loam. In the upper part it is yellowish brown; in the lower 4 inches it is light brownish gray and has brown mottles. Below this, there is a compact and brittle fragipan that extends to a depth of



The underlying material, to a depth of 80 inches, is brown silt loam that has gray and brown mottles. In places the surface layer has been thinned by erosion

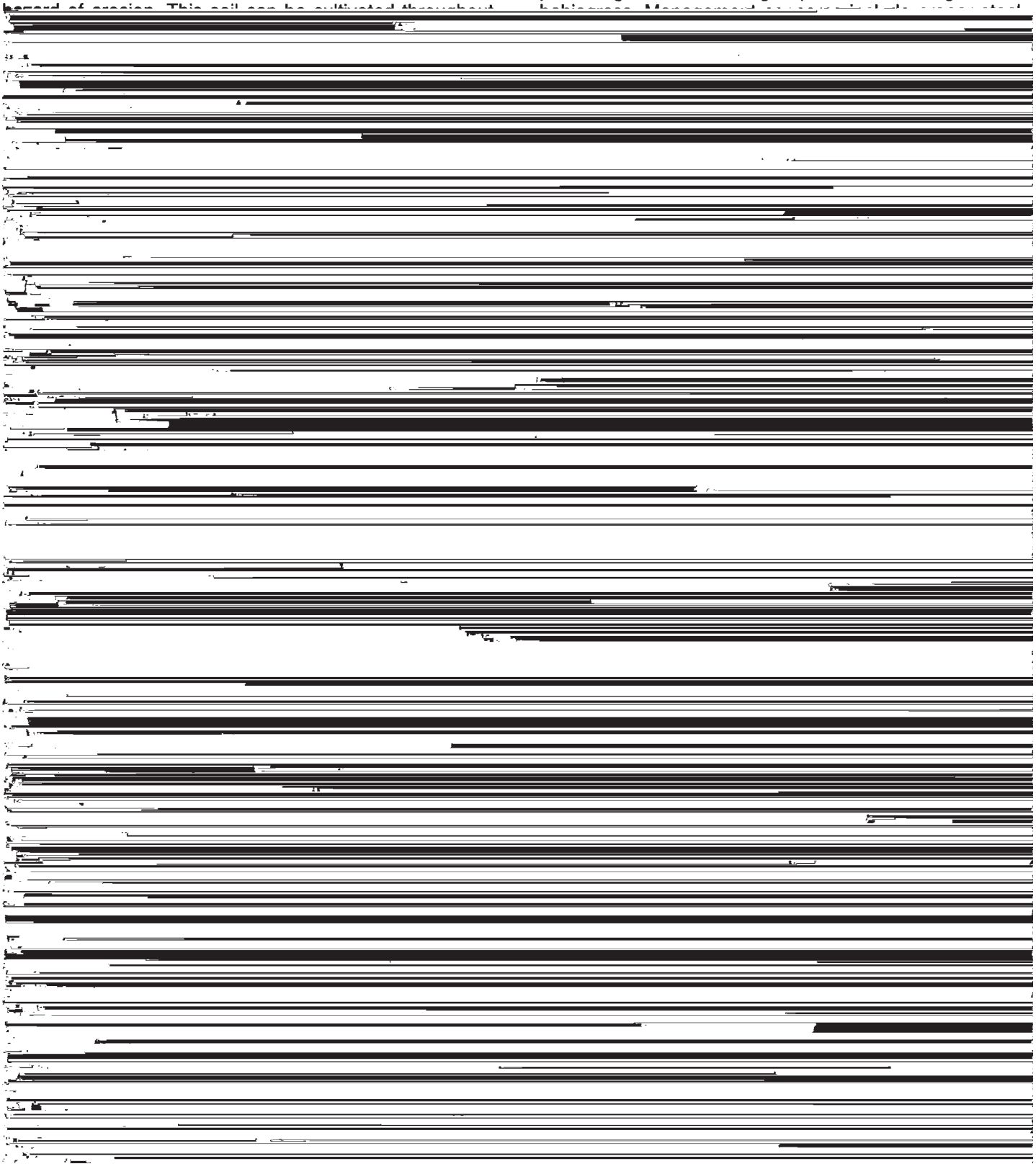
soils and small areas of soils that have slopes of more than 8 percent.

This soil is very strongly acid to medium acid in the



is medium to rapid, and the hazard of erosion is severe in cultivated fields. Tilth is fair because of the severe

and the hazard of erosion. It has good potential for pasture grasses, including improved bermudagrass and



be overcome by good design and careful installation procedures. The fragipan severely limits the use of this soil as a septic tank absorption field. Increasing the size of the absorption field should be considered. Capability unit VIe-3; woodland suitability group 2o7.

LuC—Loring-Urban land complex, 2 to 8 percent slopes. This complex of gently sloping, moderately well

Urban land is on uplands in the Jackson metropolitan area.

Areas of this map unit range from 20 to 100 acres in size. It is 40 percent Loring silt loam and 35 percent Urban land. The rest is made up of small areas of Byram, Calloway, Grenada, Providence, and Siwell soils and moderately well drained soils on narrow flood plains

that have sandstone outcrops, and areas where alkaline clay is within 48 inches of the surface layer.

Loring soils are generally on ridgetops 1/4- to 1/2-mile long and less than 300 feet wide and on the upper parts of side slopes. Kisatchie soils are generally on the steeper side slopes that are dissected by many drainageways.

Typically, the surface layer of Loring soil is brown silt loam about 5 inches thick. This is underlain, to a depth of about 27 inches, by brown to strong brown silt loam. Below this, to a depth of about 56 inches, is a compact and brittle silt loam fragipan that is brown and has gray and brown mottles. The underlying material, to a depth of 80 inches, is brown silt loam that has gray and brown mottles.

The Loring soil is very strongly acid to medium acid in the upper part and very strongly acid to slightly acid in the lower part. Permeability is moderate in the upper part and moderately slow in the fragipan. The available water

suitability group 2o7; and Kisatchie part in capability unit VIIe-2; woodland suitability group 4d2.

Mc—McRaven silt loam. This is a somewhat poorly drained soil on flood plains. Slopes are 0 to 2 percent.

Typically, the surface layer is dark brown silt loam about 5 inches thick. It is underlain by a layer of silt loam that extends to a depth of about 21 inches. This layer is mottled brown in the upper part and grayish brown in the lower part. The underlying material is grayish brown and brown silt loam that has yellowish brown mottles.

Included in mapping are small areas of Adler, Oaklimeter, and Riedtown soils. Also included are a few areas of soils that are more poorly drained than the McRaven soil.

This soil is strongly acid to neutral in the upper part and slightly acid to mildly alkaline in the lower part. Permeability is moderate. Runoff is slow, and the available water capacity is very high. The hazard of erosion is slight. Flooding of brief duration usually occurs during

high. Runoff is slow, and the hazard of erosion is slight. The surface layer is fairly easy to keep in good tilth, but it tends to crust. The rooting zone is deep, and it is easily penetrated by plant roots.

About 95 percent of this soil is cultivated or is in pasture. The rest is used as woodland. This soil has good potential for cotton, corn, soybeans, small grain, and truck crops. Good management practices, such as returning crop residue to the soil, row arrangement, and minimum tillage are needed if this soil is in row crops. This soil also has good potential for pasture grasses, including improved bermudagrass and bahiagrass. Management concerns include proper stocking, controlling grazing, and controlling weeds and brush. This soil has good potential for cherrybark oak, loblolly pine, and yellow-poplar. There are no significant limitations for woodland management.

This soil has fair potential for most urban uses. Low strength is a limitation that can easily be overcome by good design and careful installation. Capability unit I-1; woodland suitability group 1o7.

MeB2—Memphis silt loam, 2 to 5 percent slopes, eroded. This is a well drained soil on uplands. Areas of this soil range from 5 to 100 acres in size.

Typically, the surface layer is brown silt loam about 6 inches thick. The subsoil, to a depth of 22 inches, is dark brown silty clay loam. Below this, to a depth of about 80 inches, the soil material is dark brown silt loam that has pale brown mottles in the lower part. In places the surface layer has been thinned by erosion and is mixed with subsoil material, and a few rills and shallow gullies have formed.

Included in mapping are small areas of Calloway, Grenada, and Loring soils and small areas of soils that have slopes of more than 5 percent.

This soil is very strongly acid to medium acid. Permeability is moderate. The available water capacity is very high. Runoff is slow to medium, and the hazard of erosion is slight to moderate. The surface layer is fairly easy to keep in good tilth, but it tends to crust. The rooting zone is deep, and it is easily penetrated by plant roots.

Most of this soil is cultivated or is in pasture. A small acreage is used as woodland. This soil has good potential for cotton, corn, soybeans, small grain, and truck crops. The hazard of erosion is moderate if cultivated crops are grown. The return of crop residue to the soil helps maintain good tilth. Minimum tillage, stripcropping, terracing, and grassed waterways are practices that help reduce the amount of erosion when the soil is in row crops. This soil has good potential for pasture grasses

This soil has fair potential for most urban uses. Low strength is a limitation, but it can easily be overcome by good design and careful installation procedures. Capability unit IIe-1; woodland suitability group 1o7.

MeC2—Memphis silt loam, 5 to 8 percent slopes, eroded. This is a well drained soil on uplands. Areas of this soil range from 5 to 150 acres in size.

Typically, the surface layer is brown silt loam about 6 inches thick. The subsoil, to a depth of 22 inches, is dark brown silty clay loam. Below this, to a depth of about 80 inches, is dark brown silt loam that has pale brown mottles in the lower part. In places erosion has removed much of the original surface layer and shallow gullies have formed. In some areas there are a few deep gullies.

Included in mapping are a few areas where erosion is more severe and where gullies impede the operation of farm machinery. Also included are some areas of Loring soils.

This soil is very strongly acid to medium acid. Permeability is moderate. The available water capacity is very high. Runoff is medium, and erosion is a hazard. The surface layer is fairly easy to keep in good tilth, but it tends to crust. The rooting zone is deep and easily penetrated by plant roots.

Most of this soil is used for row crops or is in pasture. A small acreage is used as woodland. This soil has fair potential for cotton, soybeans, corn, and small grain. The hazard of erosion is moderate to severe if cultivated crops are grown. The return of crop residue to the soil helps maintain good tilth. Minimum tillage, stripcropping, terracing, and grassed waterways are practices that help reduce erosion where the soil is in row crops. This soil has good potential for pasture grasses, including improved bermudagrass and bahiagrass. Management concerns include proper stocking, controlling grazing, and controlling weeds and brush.

This soil has good potential for cherrybark oak, loblolly pine, and yellow-poplar. There are no significant limitations for woodland management.

This soil has fair potential for most urban uses. Low strength is a limitation, but it can be overcome easily by good design and careful installation procedures. Capability unit IIIe-2; woodland suitability group 1o7.

MeD2—Memphis silt loam, 8 to 17 percent slopes, eroded. This is a well drained soil on uplands. Areas of this soil range from 5 to 400 acres in size.

Typically, the surface layer is brown silt loam about 6 inches thick. The subsoil, to a depth of 22 inches, is dark

of soils that have slopes of more than 17 percent and areas of soils that have slopes of less than 8 percent.

This soil is very strongly acid to medium acid. Permeability is moderate. The available water capacity is very high. Runoff is rapid, and the hazard of erosion is severe. The surface layer is fairly easy to keep in good tilth, but it tends to crust. The rooting zone is deep and easily penetrated by plant roots.

Most of this soil is used for woodland or is in pasture. A small acreage is in row crops. Because of steepness of slopes and the severe hazard of erosion, this soil has poor potential for cultivated crops. This soil has fair po-

be overcome by good design and careful installation procedures. Capability unit VIe-1; woodland suitability group 1o7.

Mg—Memphis-Udorthents complex, gullied. This complex consists of very severely eroded soils, mostly in the western part of the county (fig. 8). Areas of this complex range from 15 to 160 acres in size. The pattern of Memphis soils and Udorthents soils in gullies is so complex that these soils cannot be mapped separately at the scale used. Slopes are about 10 to 35 percent.

Memphis soils make up about 51 percent of each mapped area. They are on ridgetops and side slopes

make accurate recommendations. The steep side slopes of gullies are an erosion hazard, and they interfere with the operation of logging equipment.

This complex has poor potential for urban use. Landslides on steep slopes are a potential hazard. Low strength, steep slopes, and deep gullies are the main limitations. They can be partially overcome by good design and careful installation procedures. Grading, filling, shaping, and smoothing modify the landscape for urban use. Memphis part in capability unit VIIe-1 and woodland suitability group 1o8. Udorthents not assigned

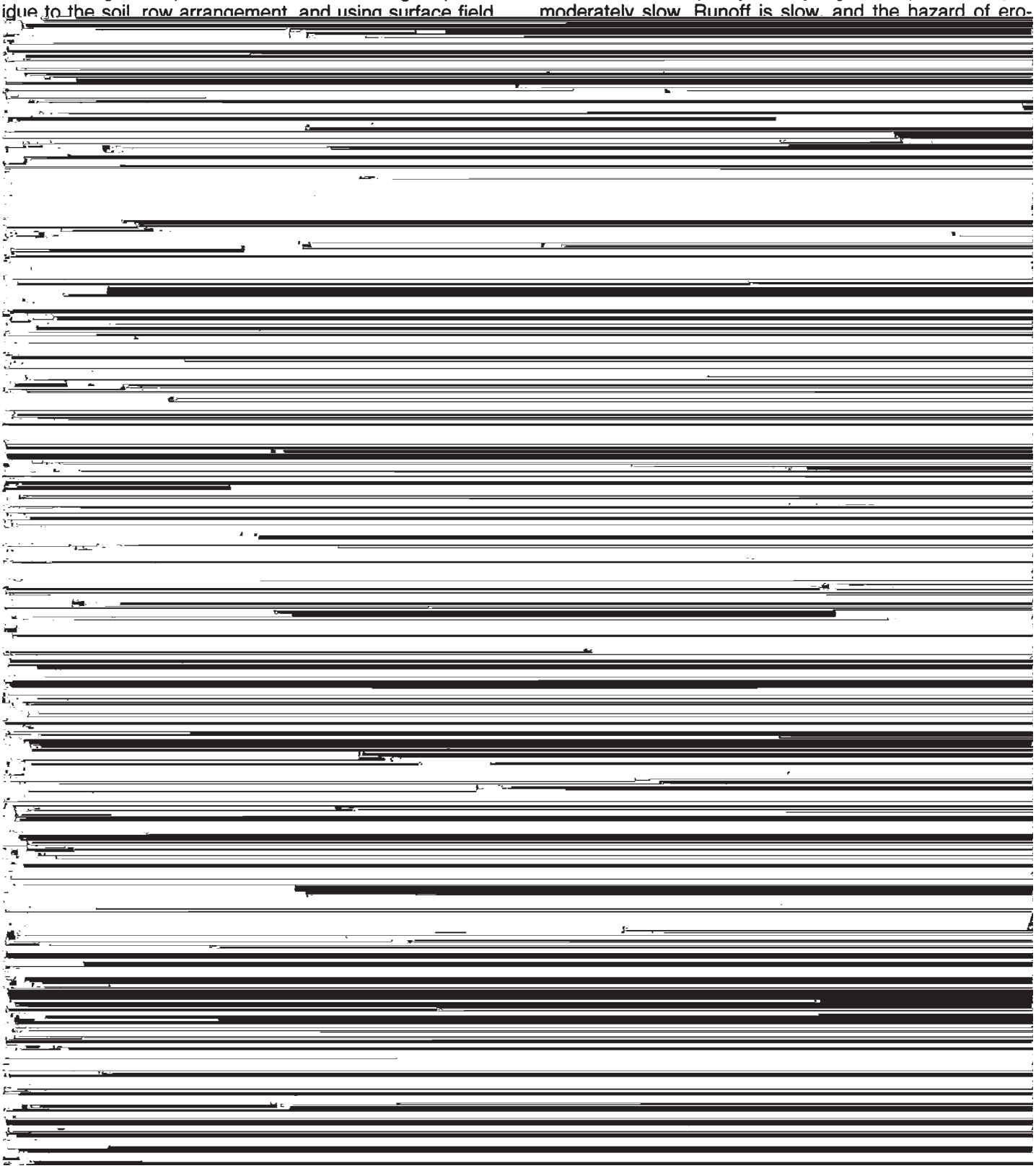
grayish brown mottles. This is underlain, to a depth of about 80 inches, by grayish brown to dark gray silt loam that has brown mottles.

Riedtown soils are strongly acid to neutral in the surface layer and medium acid to moderately alkaline in the subsoil. Permeability is moderate. Runoff is slow, and the available water capacity is very high. The rooting zone is deep and is easily penetrated by plant roots.

Most of the soils of this map unit are used as woodland. A few small areas are in pasture. Because of the steepness of slope and the severe hazard of erosion,

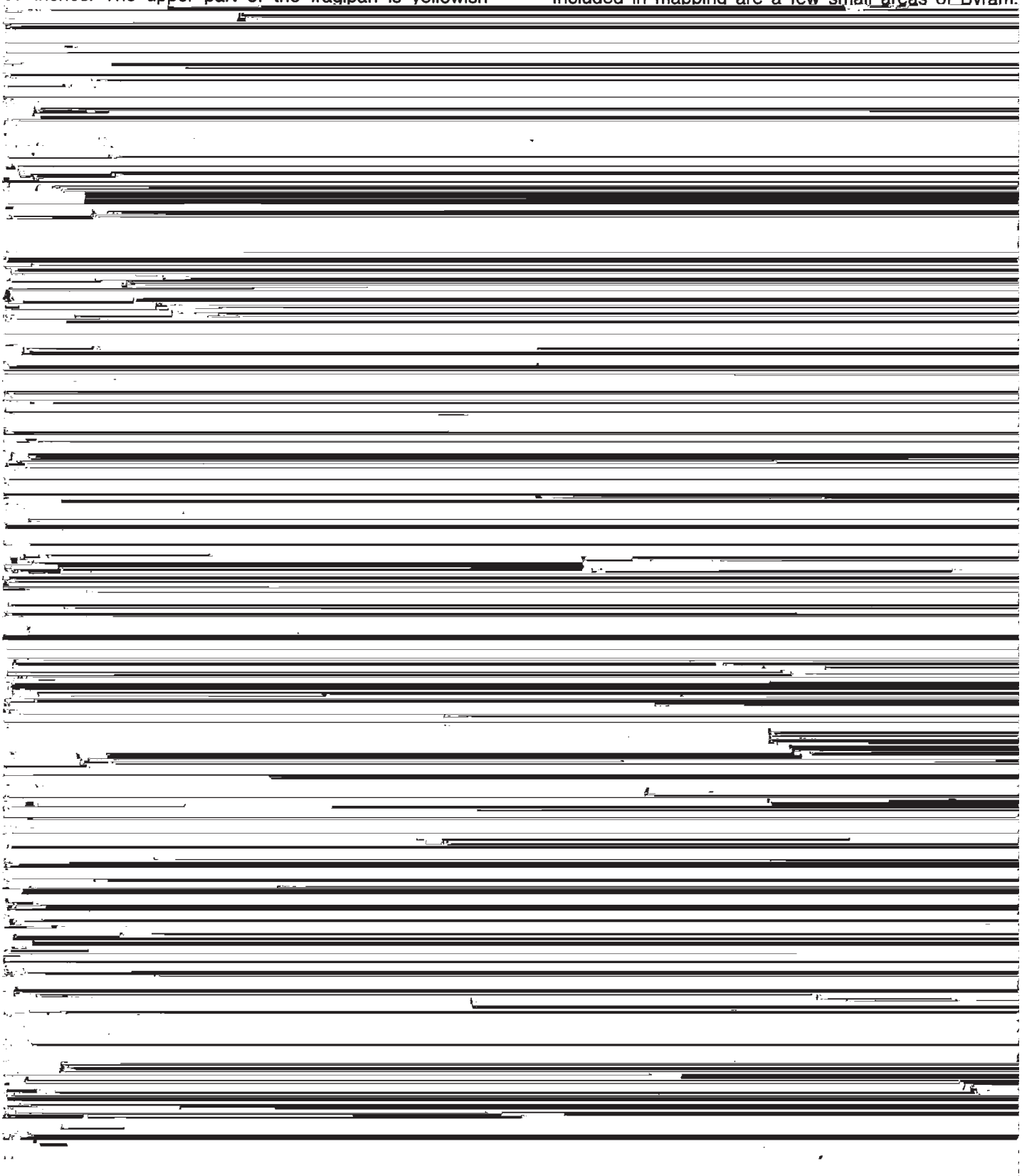
good potential for cotton, soybeans, and small grain. Good management practices, such as returning crop residue to the soil, row arrangement, and using surface field

Reaction is strongly acid or very strongly acid. The available water capacity is very high, and permeability is moderately slow. Runoff is slow, and the hazard of ero-



57 inches. The upper part of the fragipan is yellowish

Included in mapping are a few small areas of Byram.



tends to crust and pack if left bare, and it becomes hard when dry. The fragipan restricts the rooting depth and limits the amount of water available to plants.

Most areas of this map unit are in pasture, and some areas are in row crops and trees. This soil has poor potential for row crops and small grains. The potential is limited because of erosion. Further loss by erosion is probable if cultivated crops are grown. The return of crop residue to the soil helps improve tilth. Minimum tillage, stripcropping, rotation with grasses, terracing, and grassed waterways help reduce the amount of erosion when the soil is in crops.

This soil has good potential for pasture grasses, including improved bermudagrass and bahiagrass. Management concerns include proper stocking, controlling grazing, and controlling weeds and brush.

This soil has good potential for loblolly pine. There are no significant limitations to woodland use and management.

This soil has fair potential for most urban uses. Low strength is a limitation, but it can be overcome by good design and careful installation procedures. The fragipan severely limits the use of this soil as a septic tank absorption field. Increasing the size of the absorption field should be considered. Capability unit IVe-2; woodland suitability group 2o7.

PoD2—Providence silt loam, 8 to 15 percent slopes, eroded. This is a moderately well drained soil that has a fragipan. It is on uplands. Areas of this soil range from 5 to 75 acres in size.

Typically, the surface layer is dark brown silt loam about 4 inches thick. The subsoil, to a depth of 24 inches, is strong brown silty clay loam or silt loam. This is underlain, to a depth of 57 inches, by a compact and brittle fragipan that is yellowish brown silt loam in the upper part and brown loam with mottles in the lower part. The underlying material is light yellowish brown loam mottled in shades of red and brown. In places the surface layer has been thinned by erosion and is mixed with subsoil material, and a few rills and shallow gullies have formed.

Included in mapping are a few small areas of Kisatchie, Loring, and Smithdale soils and small areas where the slope exceeds 15 percent.

This soil is medium acid to very strongly acid. Permeability is moderate in the upper part and moderately slow in the fragipan. The available water capacity is medium. Runoff is rapid, and the hazard of erosion is severe. The soil is fairly easy to keep in good tilth and can be cultivated throughout a fairly wide range of moisture content. It tends to crust if left bare. The fragipan restricts the rooting depth and limits the amount of water available to plants.

Most areas of this map unit are in pasture. A few areas are in crops, and some are used as woodland.

This soil has poor potential for crops because of steep slopes and the hazard of erosion. It has fair potential for pasture grasses, including improved bermudagrass and bahiagrass. Management concerns include proper stocking, controlling weeds and brush, and proper grazing.

This soil has good potential for cherrybark oak, loblolly pine (fig. 10), shortleaf pine, sweetgum, and water oak. There are no significant limitations to woodland use and management.

This soil has fair potential for urban use. Low strength and slope are the main limitations, but they can be overcome by good design and careful installation procedures. The fragipan severely limits the use of this soil as a septic tank absorption field. Increasing the size of the absorption field should be considered. Capability unit VIe-4; woodland suitability group 2o7.

PrE—Providence-Smithdale complex, 8 to 20 percent slopes. This complex consists of small areas of Providence and Smithdale soils that are so intermingled that they could not be separated at the scale of mapping. It ranges from 20 to 160 acres in size. The topography is hilly, characterized by narrow ridgetops and steep side slopes that are dissected by numerous short drainageways. Providence soils are on the ridgetops and upper part of side slopes. Smithdale soils are on the side slopes. In places there are a few eroded spots, shallow gullies, and, occasionally, deep gullies.

The moderately well drained Providence soils make up about 41 percent of this complex, and the well drained Smithdale soils, about 35 percent. The rest is Loring and Kisatchie soils and moderately well drained soils on flood plains. The two dominant soils and one or more minor soils are in each mapped area.

Typically, the surface layer of a Providence soil is dark brown silt loam about 4 inches thick. The subsoil, to a depth of 24 inches, is strong brown silty clay loam or silt loam. This is underlain by a compact and brittle fragipan, to a depth of 57 inches, that is yellowish brown silt loam in the upper part and brown loam that has mottles in the lower part. The underlying material is light yellowish brown loam that has red and brown mottles.

These soils are medium acid to very strongly acid. Permeability is moderate in the upper part but moderately slow in the fragipan. The available water capacity is medium. Runoff is rapid, and the hazard of erosion is severe. The fragipan restricts the rooting depth and limits the amount of water available to plants.

Typically, the surface layer of a Smithdale soil is dark grayish brown sandy loam about 3 inches thick. This is underlain by yellowish brown to brown sandy loam to a depth of about 11 inches. The next layer, to a depth of 41 inches, is yellowish red sandy clay loam. Below this, to a depth of about 85 inches, is a layer of red to yellowish red sandy loam.

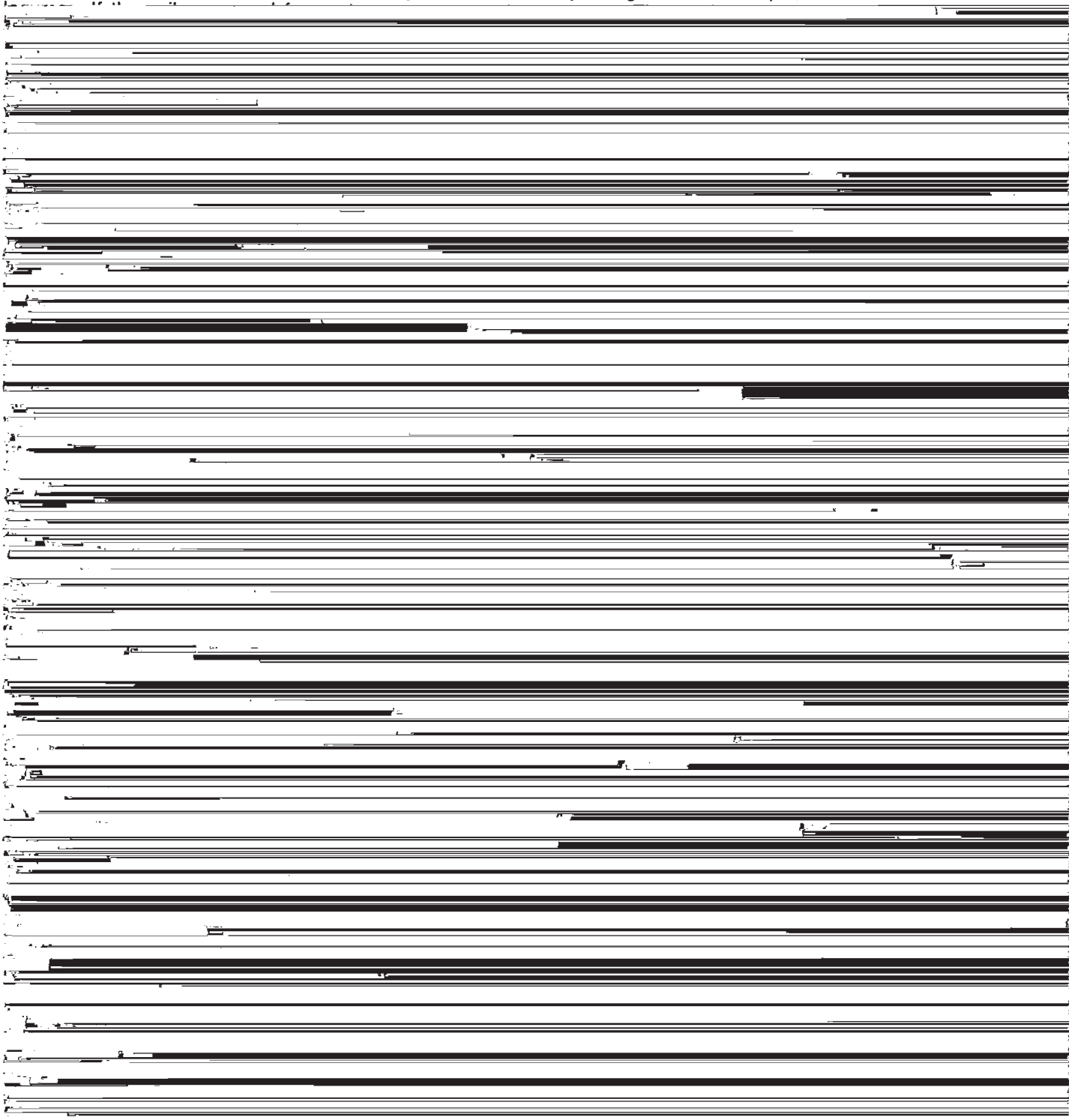
Smithdale soils are strongly acid or very strongly acid. Permeability is moderate, and the available water capacity is high. Runoff is rapid, and the erosion hazard is severe. The rooting zone is deep and easily penetrated by plant roots.

Most areas of this complex are used as woodland. A few acres are in pasture.

This complex is not recommended for row crops because of the steepness of slope and the severe hazard of erosion. It should be kept under permanent vegetation. The soils have poor to fair potential for grasses and

41 inches, is yellowish red sandy clay loam. Below this, to a depth of about 85 inches, is a layer of red to yellowish red sandy loam.

These soils are strongly acid or very strongly acid. Permeability is moderate, and the available water capacity is high. Runoff is rapid, and the hazard of erosion is



Good management practices, such as returning crop residue to the soil, row arrangement, and the use of field ditches to remove excess surface water are needed if this soil is in row crops. This soil has good potential for pasture grasses, including improved bermudagrass. Management concerns include proper stocking, controlling grazing, and controlling weeds and brush.

tations, but they can be partly overcome by good design and careful installation procedures. The clay in the lower part of the subsoil is a severe limitation for septic tank absorption fields. Community sanitary facilities should be used. Capability unit IIe-2; woodland suitability group 3o7.

SoC2. Sivell silt loam, 5 to 8 percent slopes

used. Capability unit IVe-2; woodland suitability group 3o7.

SuC—Siwell-Urban land complex, 2 to 8 percent slopes. This is a gently sloping and sloping, moderately well drained complex on uplands in the metropolitan

structures and streets and other public facilities. Most of the original soil profile has been so extensively altered that soil series are no longer identifiable.

This complex is 40 percent Siwell silt loam and 35 percent Urban land. The rest is made up of small areas

24 percent; and the well drained Memphis soil, about 15 percent. The rest is made up of Kisatchie, Natchez, and Providence soils on uplands and moderately well drained and somewhat poorly drained soils in narrow drainageways.

Typically, the Smithdale soil has a surface layer of dark grayish brown sandy loam about 3 inches thick. It is underlain to a depth of about 11 inches by yellowish brown to brown sandy loam. The next layer, to a depth of 41 inches, is yellowish red sandy clay loam. Below this, to a depth of about 85 inches, the soil material is red to yellowish red sandy loam.

The Smithdale soil is strongly acid or very strongly acid. Permeability is moderate, and the available water capacity is high. Runoff is rapid, and the erosion hazard is severe. The root zone is deep and easily penetrated

potential. Low strength and steep slopes are the main limitations, but they can be overcome by good design and careful installation procedures. Grading, filling, shaping, and smoothing modify the landscape for urban use. Capability unit VIe-2; Lexington part in woodland suitability group 2o8, Memphis part in woodland suitability group 1o8, and Smithdale part in woodland suitability group 2o2.

Ur—Urban land. The city of Jackson covers most of this map unit. About 75 to 95 percent of the area is made up of industrial, commercial, and residential developments including buildings, streets, and parking lots. About 10 to 15 percent of the area is used for single-unit dwellings.

Installation of works and structures has so altered and obscured soil features that the soils do not resemble

crops with the smallest possible loss; and timeliness of all fieldwork.

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

Crops other than those shown in table 6 are grown in

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

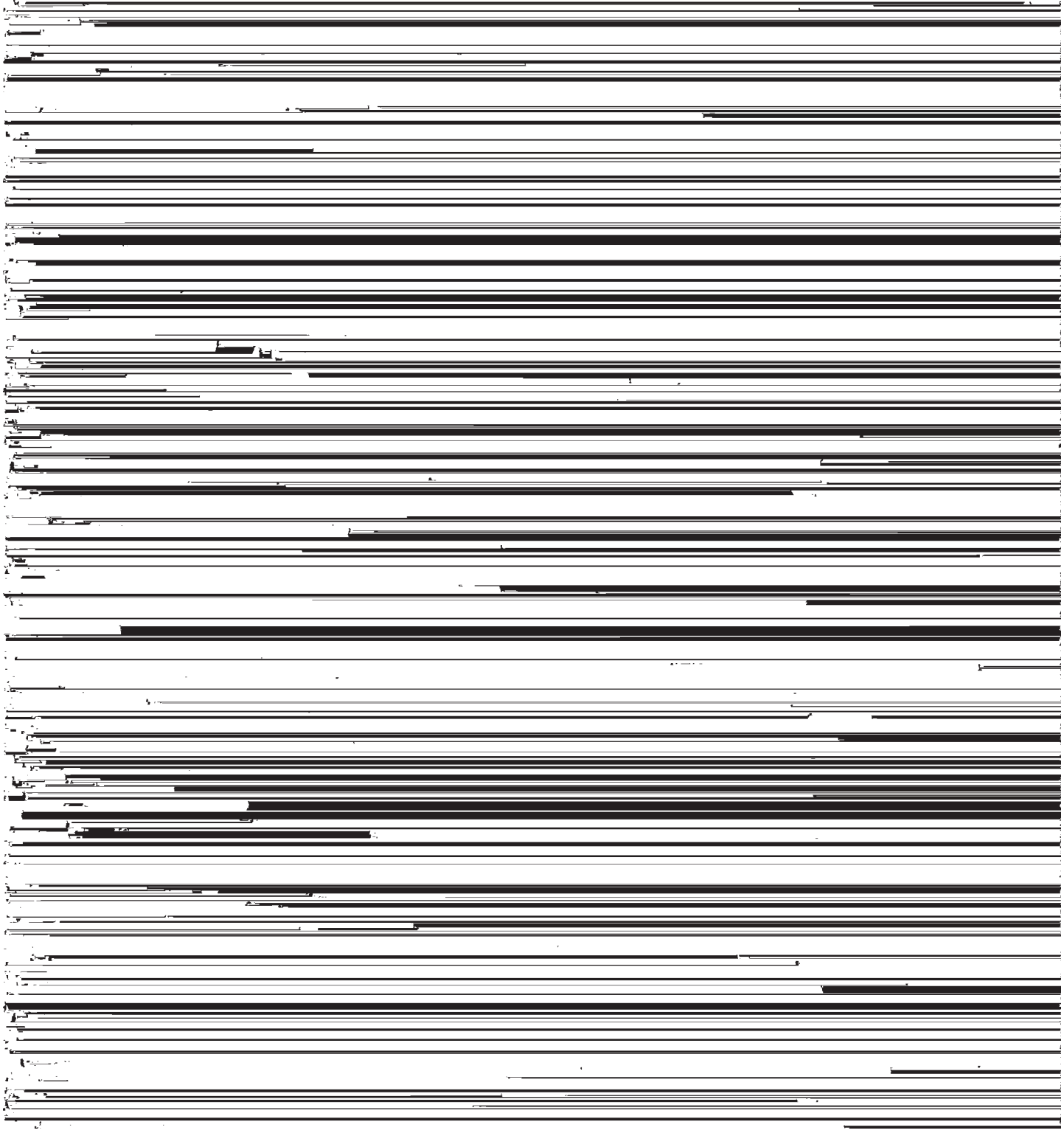
Capability subclasses are soil groups within one class; they are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or

Forest types

Forest types is a descriptive term used to group stands of trees that have similar characteristics and development because of certain ecological factors. In

tion, 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. Seed-



likelihood of flooding, natural soil structure or aggregation, in-place soil density, and geologic origin of the soil material. If pertinent, data about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of absorbed cations were also considered.

On the basis of information assembled about soil properties, ranges of values can be estimated for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, shear strength, compressibility, slope stability, and other factors of expected soil behavior in engineering uses. As appropriate, these values can be applied to each major horizon of each soil or to the entire profile.

These factors of soil behavior affect construction and maintenance of roads, airport runways, pipelines, foundations, and to construct interpretive maps for specific uses of land.

Some of the terms used in this soil survey have a special meaning in soil science. Many of these terms are defined in the Glossary.

Building site development

The degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, and local roads and streets are indicated in table 9. A *slight* limitation indicates that soil properties generally are favorable for the specified use; any limitation is minor and easily overcome. A *moderate* limitation indicates that soil properties and site features are unfavorable for the specified use, but the limi-

Local roads and streets referred to in table 9 have an all-weather surface that can carry light to medium traffic all year. They consist of a subgrade of the underlying soil material; a base of gravel, crushed rock fragments, or soil material stabilized with lime or cement; and a flexible or rigid surface, commonly asphalt or concrete. The roads are graded with soil material at hand, and most cuts and fills are less than 6 feet deep.

The load supporting capacity and the stability of the soil as well as the quantity and workability of fill material available are important in design and construction of roads and streets. The classifications of the soil and the soil texture, density, shrink-swell potential, and potential frost action are indicators of the traffic supporting capacity used in making the ratings. Soil wetness, flooding, slope, depth to hard rock or very compact layers, and content of large stones affect stability and ease of excavation.

Sanitary facilities

Favorable soil properties and site features are needed for proper functioning of septic tank absorption fields, sewage lagoons, and sanitary landfills. The nature of the soil is important in selecting sites for these facilities and in identifying limiting soil properties and site features to be considered in design and installation. Also, those soil 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 if the seasonal high water table is above the level of the lagoon floor. If 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

Daily cover for landfill should be soil that is easy to excavate and spread over the compacted fill in wet and dry periods. Soils that are loamy or silty and free of stones or boulders are better than other soils. Clayey soils may be sticky and difficult to spread; sandy soils may be subject to soil blowing.

The soils selected for final cover of landfills should be suitable for growing plants. Of all the horizons, the A horizon in most soils has the best workability, more organic matter, and the best potential for growing plants. Thus, for either the area- or trench-type landfill, stockpiling material from the A horizon for use as the surface layer of the final cover is desirable.

If it is necessary to bring in soil material for daily or final cover, thickness of suitable soil material available and depth to a seasonal high water table in soils surrounding the site should be evaluated. Other factors to be evaluated are those that affect reclamation of the borrow areas. These factors include slope, erodibility, and potential for plant growth.

Construction materials

The suitability of each soil as a source of roadfill, sand, gravel, and topsoil is indicated in table 11 by ratings of good, fair, or poor. The texture, thickness, and organic-matter content of each soil horizon are important factors in rating soils for use as construction material. Each soil is evaluated to the depth observed, generally about 6 feet.

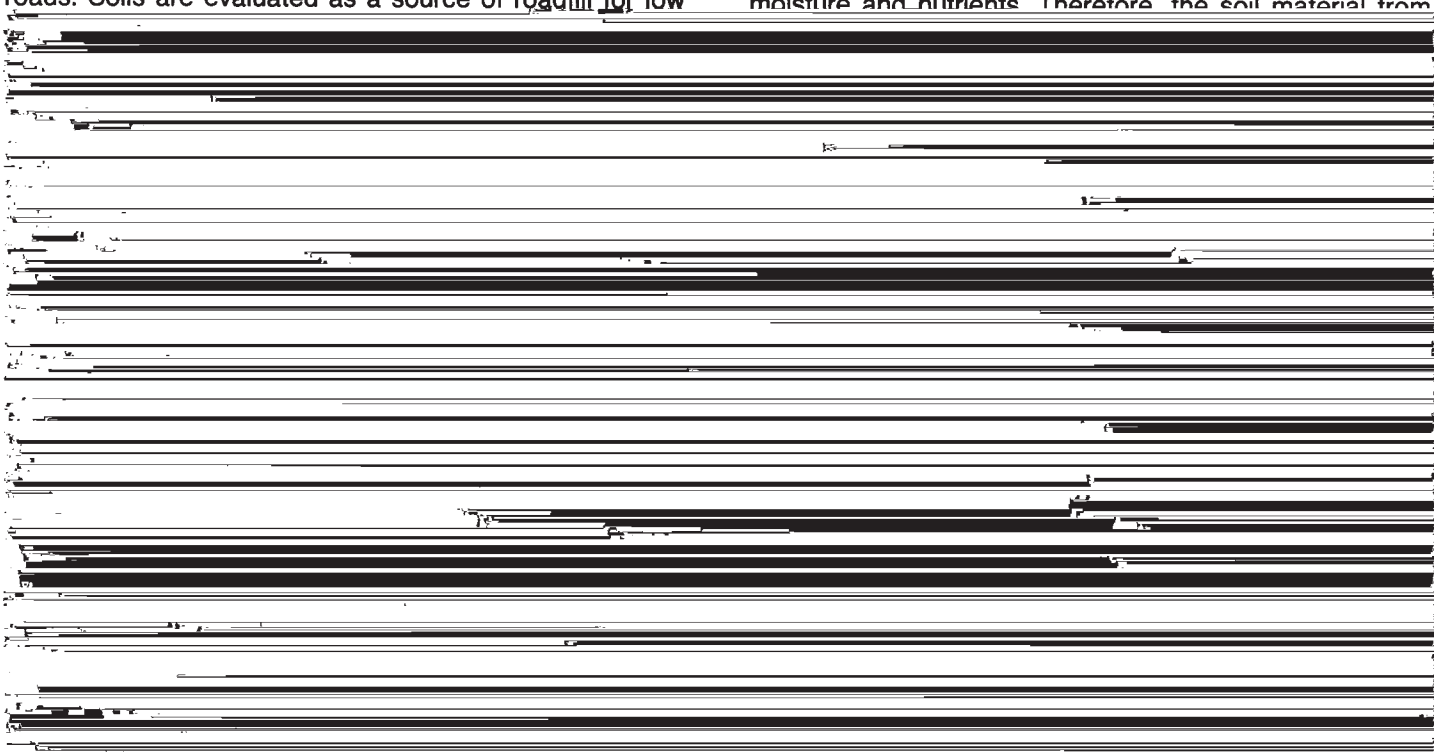
Roadfill is soil material used in embankments for roads. Soils are evaluated as a source of roadfill for low many stones. If the thickness of suitable material is less than 3 feet, the entire soil is rated *poor*.

Sand and *gravel* are used in great quantities in many kinds of construction. The ratings in table 11 provide guidance as to where to look for probable sources and are based on the probability that soils in a given area contain sizable quantities of sand or gravel. A soil rated *good* or *fair* has a layer of suitable material at least 3 feet thick, the top of which is within a depth of 6 feet. Coarse fragments of soft bedrock material, such as shale and siltstone, are not considered to be sand and gravel. Fine-grained soils are not suitable sources of sand and gravel.

The ratings do not take into account depth to the water table or other factors that affect excavation of the material. Descriptions of grain size, kinds of minerals, reaction, and stratification are given in the soil series descriptions and in table 15.

Topsoil is used in areas where vegetation is to be established and maintained. Suitability is affected mainly by the ease of working and spreading the soil material in preparing a seedbed and by the ability of the soil material to support plantlife. Also considered is the damage that can result at the area from which the topsoil is taken.

The ease of excavation is influenced by the thickness of suitable material, wetness, slope, and amount of stones. The ability of the soil to support plantlife is determined by texture, structure, and the amount of soluble salts or toxic substances. Organic matter in the A1 or Ap horizon greatly increases the absorption and retention of moisture and nutrients. Therefore, the soil material from



Water management

Many soil properties and site features that affect water management practices have been identified in this soil survey. In table 12 the degree of soil limitation and soil and site features that affect use are indicated for each kind of soil. This information is significant in planning, installing, and maintaining water control structures.

Soil and site limitations are expressed as slight, moderate, and severe. *Slight* means that the soil properties and site features are generally favorable for the specified use and that any limitation is minor and easily overcome. *Moderate* means that some soil properties or site features are unfavorable for the specified use but can be overcome or modified by special planning and design. *Severe* means that the soil properties and site features are so unfavorable and so difficult to correct or overcome that major soil reclamation, special design, or intensive maintenance is required.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have a low seepage potential, which is determined by permeability and the depth to fractured or permeable bedrock or other permeable material.

Embankments, dikes, and levees require soil material that is resistant to seepage, erosion, and piping and has favorable stability, shrink-swell potential, shear strength, and compaction characteristics. Large stones and organic matter in a soil downgrade the suitability of the soil for use in embankments, dikes, and levees.

Aquifer-fed excavated ponds are bodies of water made by excavating a pit or dugout into a ground-water aquifer. Excluded are ponds that are fed by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Ratings in table 12 are for ponds that are properly designed, located, and con-

erodibility, wetness, and suitability for permanent vegetation.

Recreation

The soils of the survey area are rated in table 13 according to limitations that affect their suitability for recreation uses. The ratings are based on such restrictive soil features as flooding, wetness, slope, and texture of the surface layer. Not considered in these ratings, but important in evaluating a site, are location and accessibility of the area, size and shape of the area and its scenic quality, the ability of the soil to support vegetation, access to water, potential water impoundment sites available, and either access to public sewerlines or capacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degree, for recreation use by the duration and intensity of flooding and the season when flooding occurs. Onsite assessment of height, duration, intensity, and frequency of flooding is essential in planning recreation facilities.

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

The information in table 13 can be supplemented by information in other parts of this survey. Especially helpful are interpretations for septic tank absorption fields, given in table 10, and interpretations for dwellings with

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones or boulders, is firm after rains, and is not dusty when dry. If shaping is required to obtain a uniform grade, the depth of the soil over bedrock or hardpan should be enough to allow necessary grading.

Paths and trails for walking, horseback riding, bicycling, and other uses should require little or no cutting and filling. The best soils for this use are those that are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once during the annual period of use. They have moderate slopes and have few or no stones or boulders on the surface.

Wildlife habitat

Edward G. Sullivan, biologist, Soil Conservation Service, helped prepare this section.

The way land is used is the most important factor that affects the wildlife population. The kinds and numbers of wild animals in Hinds County have varied over the years.

Before Hinds County was settled, the area was predominantly forest. Upland hardwoods and mixed pine-hardwood stands are dominant in the hills, and bottom land hardwood forests are dominant in the flood plains along the streams. Under these conditions, forest animals affect the construction of water impoundments. The kind and abundance of wildlife that populate an area depend largely on the amount and distribution of food, cover, and water. If any one of these elements is missing, is inadequate, or is inaccessible, wildlife either are scarce or do not inhabit the area.

If the soils have the potential, wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by helping the natural establishment of desirable plants.

In table 14, the soils in the survey area are rated according to their potential to support the main kinds of wildlife habitat in the area. This information can be used in planning for parks, wildlife refuges, nature study areas, and other developments for wildlife; selecting areas that are suitable for wildlife; selecting soils that are suitable for creating, improving, or maintaining specific elements of wildlife habitat; and determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* means that the element of wildlife habitat or the kind of habitat is easily created, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected if the soil is used for the designated purpose. A rating of *fair* means that the element of wildlife habitat or kind of habitat can be created, improved, or maintained in most places. Moderately intensive management is required for

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Major soil properties that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and the associated woody understory provide cover for wildlife and produce nuts or other fruit, buds, catkins, twigs, bark, or foliage that wildlife eat. Major soil properties that affect growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of hardwood plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are commercially available and suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

Coniferous plants are cone-bearing trees, shrubs, or ground cover plants that furnish habitat or supply food in the form of browse, seeds, or fruitlike cones. Soil properties that have a major effect on the growth of coniferous plants are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, or foliage used by wildlife or that

shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The kinds of wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail rabbit, and red fox.

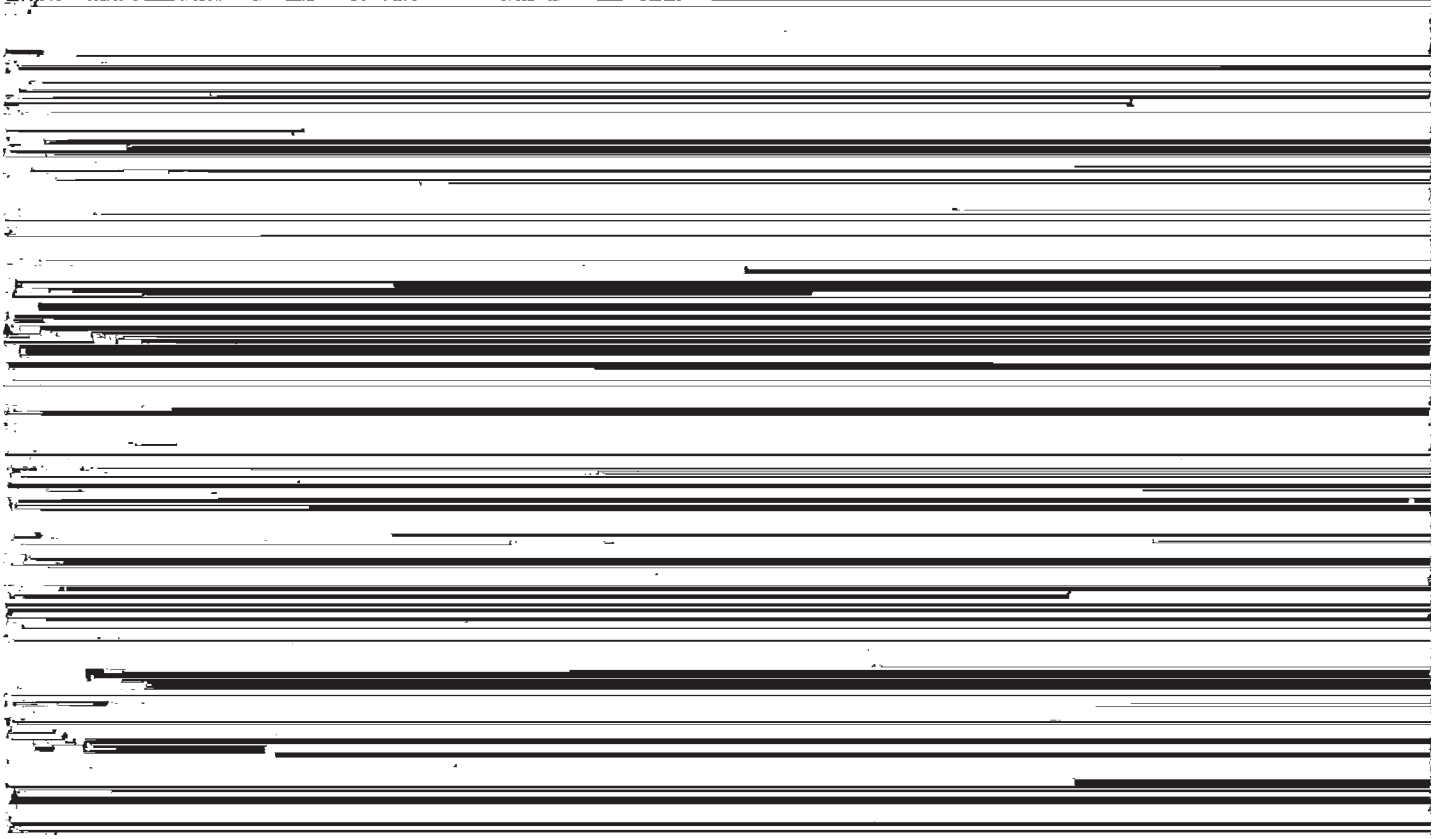
Woodland habitat consists of areas of hardwoods or conifers, or a mixture of both, and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Wetland habitat consists of open, marshy or swampy, shallow water areas where water-tolerant plants grow. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Soil properties

Extensive data about soil properties are summarized on the following pages. The two main sources of these data are the many thousands of soil borings made during the course of the survey and the laboratory analyses of selected soil samples from typical profiles.

In making soil borings during field mapping, soil scientists can identify several important soil properties. They note the seasonal soil moisture condition or the presence of free water and its depth. For each horizon in the profile, they note the thickness and color of the soil



Most soils have, within the upper 5 or 6 feet, horizons of contrasting properties. Table 15 gives information for each of these contrasting horizons in a typical profile. Depth to the upper and lower boundary of each horizon

in the field and then converting that, by formula, to weight percentage.

Percentage of the soil material less than 3 inches in

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

water after the soils have been wetted and have received precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of deep, well drained to excessively drained sands or gravels. These soils have a high rate of water transmission. (No soils of this group are in Hinds County.)

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

of the soil survey. Indicated in table 17 are the depth to the seasonal high water table; the kind of water table, that is, perched, artesian, or apparent; and the months of 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

a 325 mesh sieve, dried, and weighed. The results are expressed on the basis of oven-dry weight at 110 degrees Celsius.

The physical properties of soils, such as water infiltration and conduction, shrink-swell potential, crusting, ease of tillage, consistence, and available water capacity, are closely related to soil texture (the percentage of sand, silt, and clay).

The Siwell soil is high in expansive montmorillonite clay in the lower part of the subsoil. This clay content

cent. The Byram soil, an Alfisol, has base saturation of more than 60 percent. The degree of weathering is inversely related to base saturation, because base saturation is a measure of the extent of the replacement of bases by hydrogen in the leaching process.

Engineering test data

The results of analyses of soil properties significant in engineering of several typical soils in the survey area are given in table 19.

The data presented are for soil samples that were collected from carefully selected sites. The pedons sampled are typical of the soil series in the survey area, which are described in the section "Soil series and morphology." The soil samples were analyzed by the Mississippi State Highway Department.

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

The methods and codes are AASHTO classification (M-145-66); Unified classification (D-2487-66T); mechanical analysis (T88-57); liquid limit (T89-60); plasticity index (T90-56); moisture-density, method A (T99-57).

Classification of the soils

The system of soil classification used by the National Cooperative Soil Survey (*5*) has six categories. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. In this system the classification is based on the different soil properties that can be observed in the field or those that can be inferred either from other properties that are observable in the field or from the combined data of soil science and other disciplines. The properties selected for the higher categories are the result of soil genesis or of factors that affect soil genesis. In table 20, the soils of the survey area are classified according to the system. Categories of the system are discussed in the following paragraphs.

ORDER. Ten soil orders are recognized as classes in the system. The properties used to differentiate among orders are those that reflect the kind and degree of dominant soil-forming processes that have taken place. Each order is identified by a word ending in *sol*. An example is Entisol.

ment, and degree of expression of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and a prefix that suggests something about the properties of the soil. An example is Fluvaquents (*Fluv*, meaning flood plain, plus *aquents*, the suborder of Entisols that has an aquic moisture regime).

SUBGROUP. Each great group may be divided into three subgroups: the central (typic) concept of the great groups, which is not necessarily the most extensive subgroup; the intergrades, or transitional forms to other orders, suborders, or great groups; and the extragrades, which have some properties that are representative of the great groups but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Aeric* identifies better aeration than is typical for the Great Group. An example is Aeric Fluvaquents.

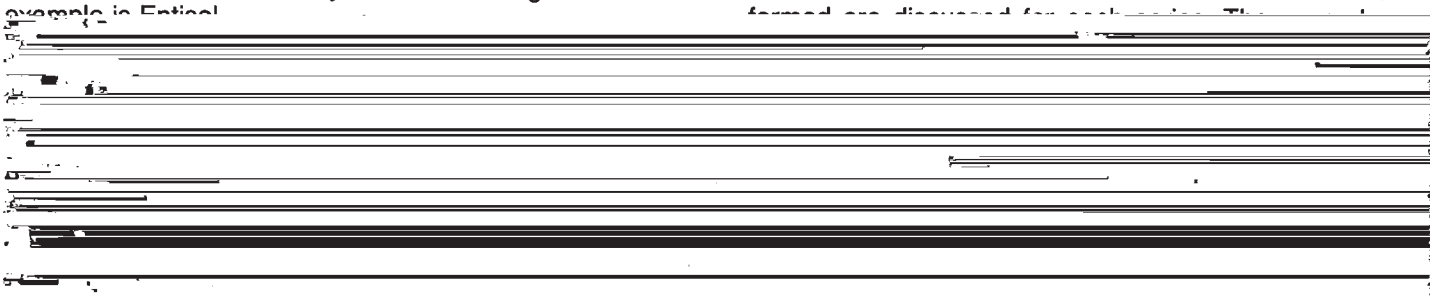
FAMILY. Families are established within a subgroup on the basis of similar physical and chemical properties that affect management. Among the properties considered in horizons of major biological activity below plow depth are particle-size distribution, mineral content, temperature regime, thickness of the soil penetrable by roots, consistence, moisture equivalent, soil slope, and permanent cracks. A family name consists of the name of a subgroup and a series of adjectives. The adjectives are the class names for the soil properties used as family differentiae. An example is coarse-silty, mixed, nonacid, thermic Aeric Fluvaquents.

SERIES. The series consists of soils that formed in a particular kind of material and have horizons that, except for texture of the surface soil or of the underlying substratum, are similar in differentiating characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineral and chemical composition. The McRaven series is in the coarse-silty, mixed, nonacid, thermic family of Aeric Fluvaquents.

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.

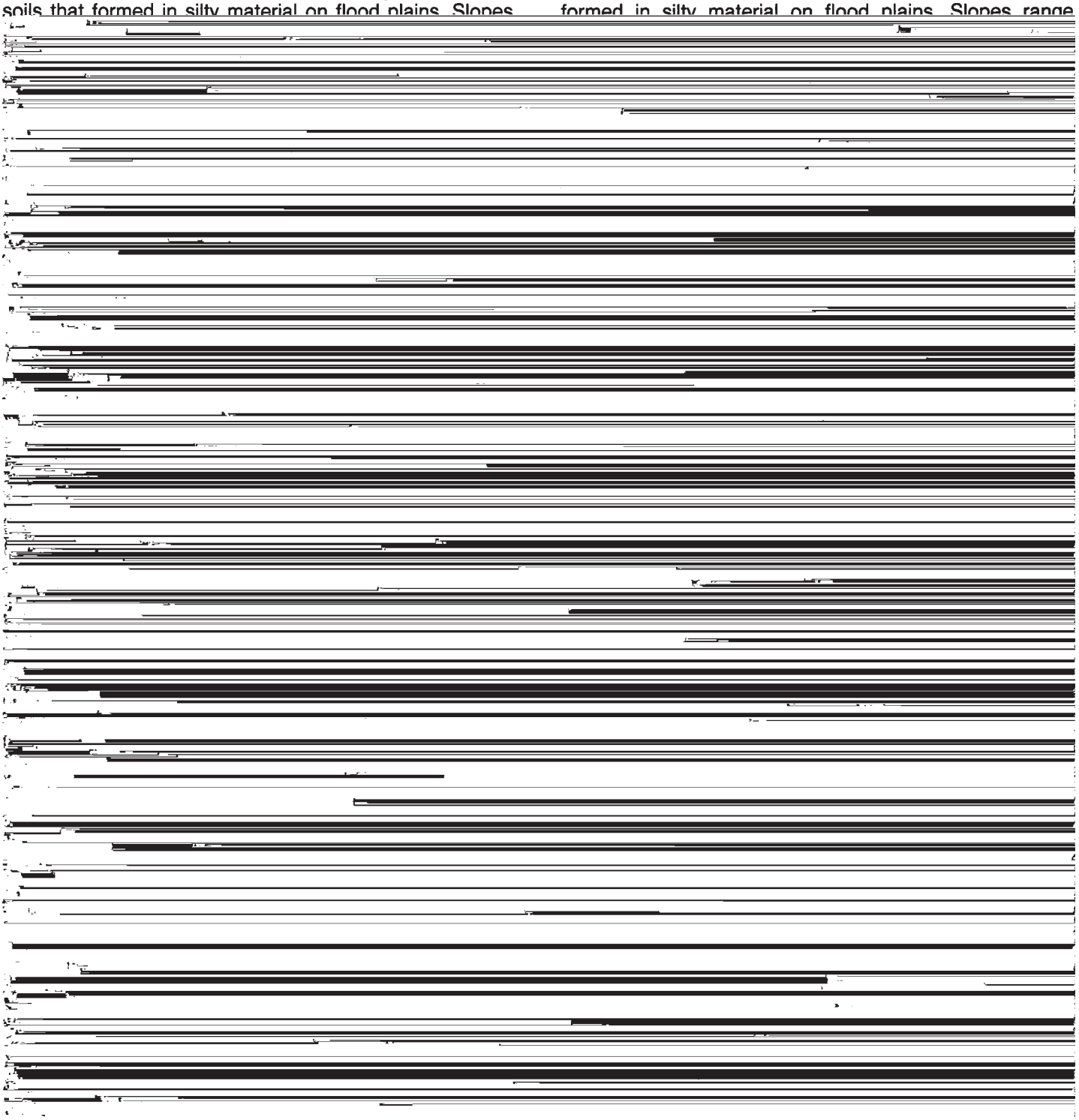
Characteristics of the soil and the material in which it formed are discussed for each series. The



Phases, or map units, of each soil series are described in the section "Soil maps for detailed planning."

Adler series

The Adler series consists of moderately well drained soils that formed in silty material on flood plains. Slopes



reaction to Riedtown soils, but they do not have a B horizon.

Ariel series

The Ariel series consists of well drained soils that formed in silty material on flood plains. Slopes range

The A horizon is dark grayish brown, grayish brown, dark brown, dark yellowish brown, or brown.

The B21 and B22 horizons are dark brown, dark yellowish brown, brown, or yellowish brown.

The A2b horizon is pale brown, grayish brown, or light brownish gray, or it is mottled gray and brown.

The B2b horizon is brown, yellowish brown, or grayish brown and has few to many gray or brown mottles; or it is mottled brown and gray. At a depth of 10 to 40 inches, the clay content is 12 to 18 percent, and the sand content is 5 to 15 percent.

Ariel soils are associated with Adler, Oaklimeter, and Riedtown soils. They are better drained and more acid than Adler and Riedtown soils and are better drained than Oaklimeter soils.

B21tg—22 to 42 inches; light brownish gray (2.5Y 6/2) silty clay loam; many medium distinct light olive brown (2.5Y 5/6) mottles; weak coarse prismatic structure parting to weak medium subangular blocky; firm; few fine pores; clay films on horizontal and vertical faces of peds; gray (10YR 6/1) silt loam coatings on faces of prisms; gray (10YR 6/1) tongues 1 to 2 inches wide and about 5 inches apart are throughout the horizon; few fine black concretions; few fine to coarse calcite concretions; neutral; gradual irregular boundary.

B22tg—42 to 66 inches; light brownish gray (10YR 6/2) silt loam; many medium distinct yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few fine pores; gray clay films in pores and patchy

Byram series

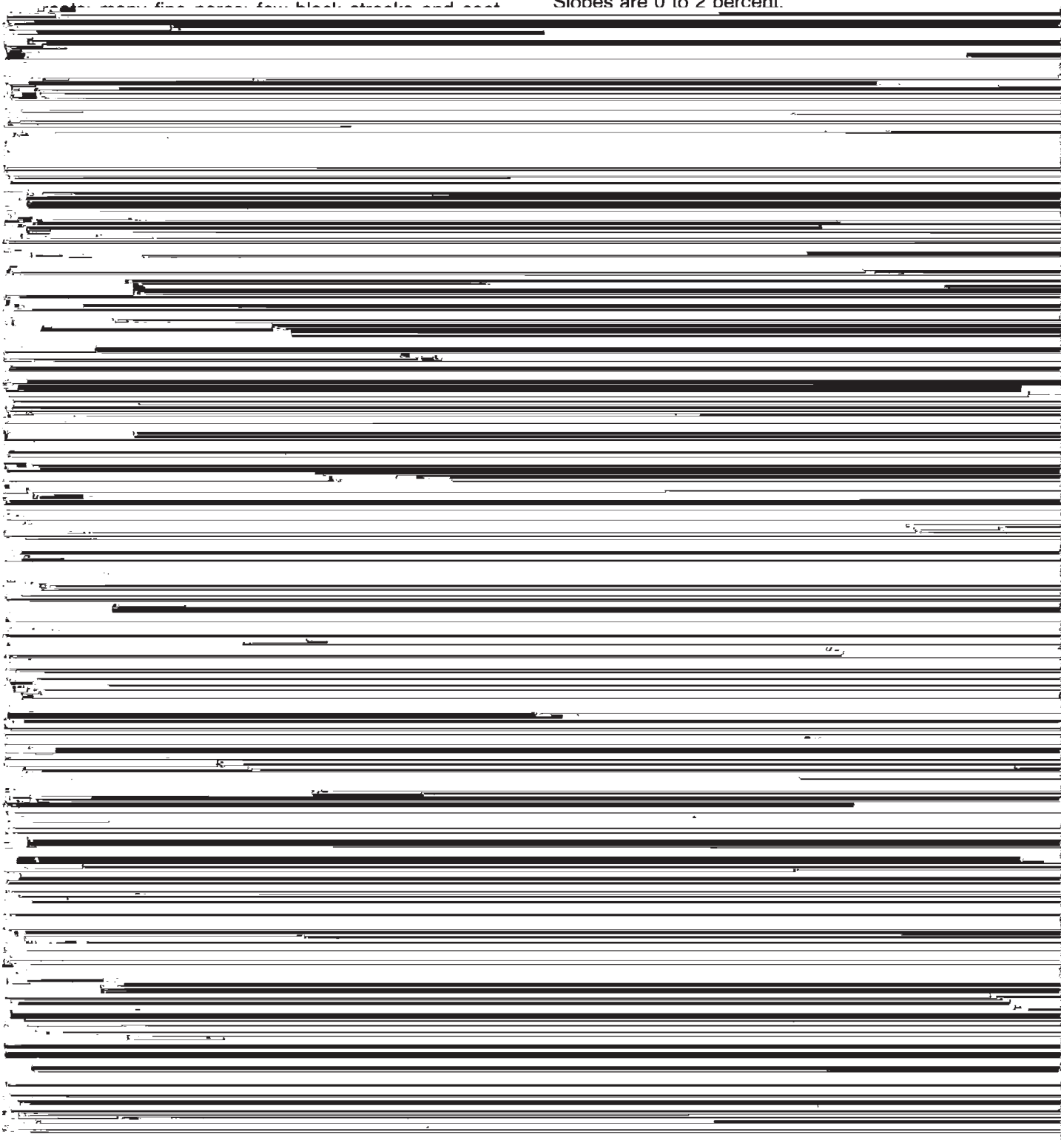
Depth to the fragipan ranges from 18 to 30 inches. Depth to the clayey IIC horizon ranges from 48 to 72

4/4) stains around old root channels; strongly acid; gradual wavy boundary.

A23g—12 to 17 inches; gray (10YR 5/1) silt loam; weak fine subangular blocky structure; friable; few fine

Calloway series

The Calloway series consists of somewhat poorly drained soils that formed in silty materiai on broad flats. Slopes are 0 to 2 percent.



olive brown and has few to many gray mottles within 16 inches of the surface. Some soils do not have matrix color and are mottled gray and brown.

The A'2&B'x1 horizon is grayish brown, light brownish gray, or light gray.

The B'x horizon is yellowish brown or is light olive brown and has few to many gray mottles; or it is mottled yellow, brown, or gray. Clay content from a depth of 10 inches to the fragipan ranges from 18 to 25 percent. Depth to the fragipan ranges from 15 to 33 inches.

Calloway soils are associated with Calhoun and Grenada soils. They have a fragipan and are better drained than Calhoun soils and are more poorly drained than Grenada soils.

Cascilla series

The Cascilla series consists of well drained soils that formed in silty material on natural levees of the flood plains. Slopes range from 0 to 2 percent.

Typical pedon of Cascilla silt loam, in a large wooded area in the Pearl River flood plain, 1 mile north of State Highway 25, and 750 feet west of Pearl River channel, SW1/4NW1/4 sec. 20, T. 6 N., R. 2 E.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; very friable; many fine and coarse roots; very strongly acid; clear smooth boundary.

B21—3 to 7 inches; dark brown (10YR 4/3) silt loam;

gray and brown mottles. Clay content ranges from 18 to 24 percent at a depth of 10 to 40 inches.

The C horizon is yellowish brown, light brownish gray, brown, or grayish brown. The texture is fine sandy loam, silt loam, or loam.

Cascilla soils are associated with Bonn, Chenneby, and Deerford soils. They are more acid and are better drained than the Bonn and Deerford soils. Unlike Bonn and Deerford soils, Cascilla soils do not have a high sodium content. Cascilla soils are better drained than Chenneby soils.

Chenneby series

The Chenneby series consists of somewhat poorly drained soils that formed in silty alluvial material. Slopes are 0 to 2 percent.

Typical pedon of Chenneby silt loam, in an area of Cascilla-Chenneby association, 1 mile east of railroad crossing at Rosemary, 4,500 feet west of Pearl River bridge, and 1,100 feet south of Rosemary Road, SE1/4NW1/4 sec. 19, T. 3 N., R. 1 E.

A11—0 to 5 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear smooth boundary.

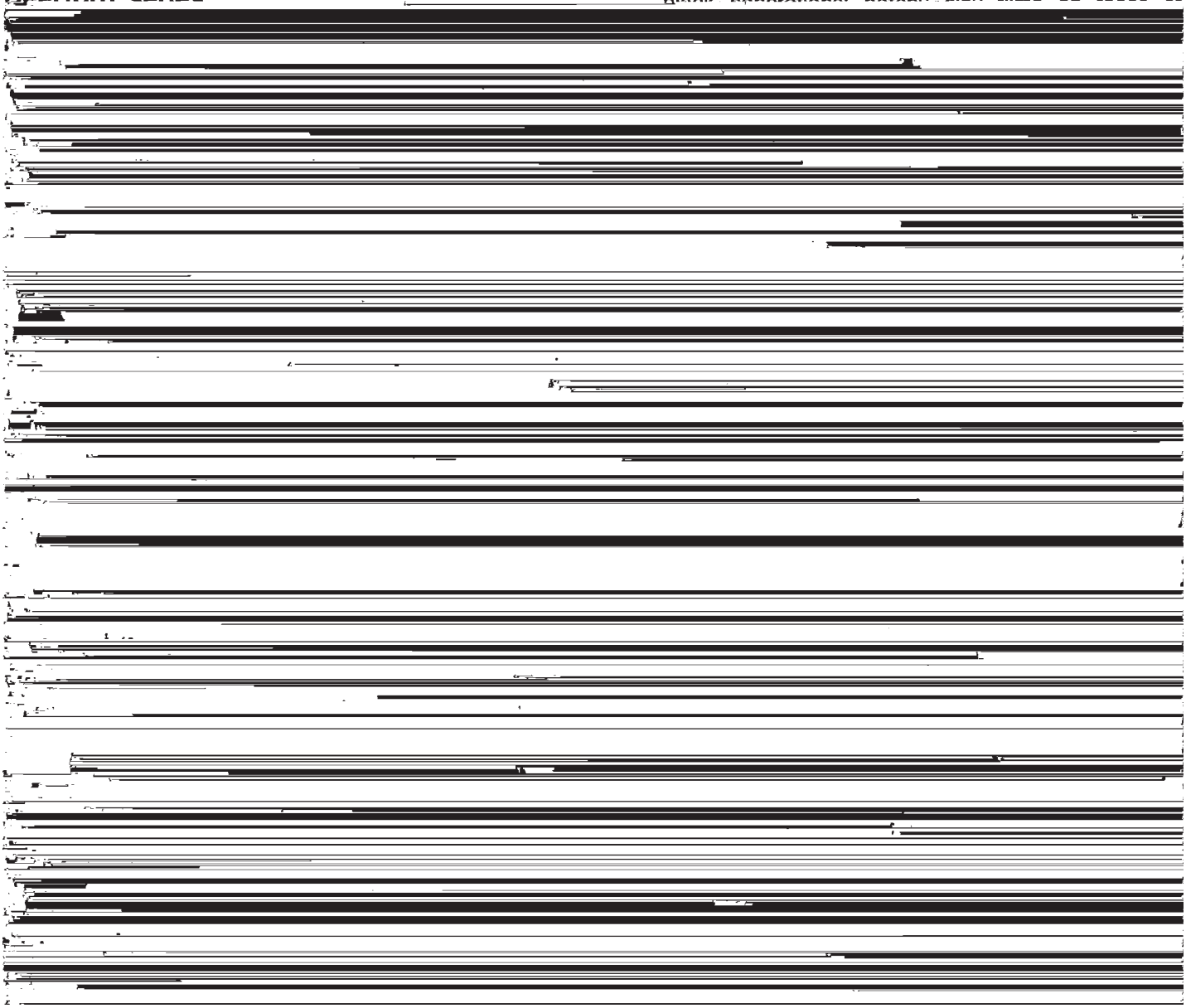
A12—5 to 13 inches; dark yellowish brown (10YR 4/4) silt loam; few fine faint yellowish brown mottles; weak medium granular structure; friable; few fine roots; strongly acid; clear smooth boundary.

The upper part of the B horizon is brown, dark brown, or dark yellowish brown and has common to many light brownish gray or gray mottles and few to many brown mottles. The lower part of the B horizon is dark grayish brown and grayish brown, or it is mottled gray and brown. The texture is silt loam or silty clay loam. Clay content at a depth of 10 to 40 inches is 20 to 35 percent.

The C horizon is gray, grayish brown, and light grayish brown and has gray and brown mottles. The texture is silt loam, silty clay loam, loam, or sandy loam.

Chenneby soils are associated with Cascilla soils. They are not so well drained as Cascilla soils.

Deerford series



throughout the horizon; common thin black coatings on peds; common fine black concretions; medium acid; clear irregular boundary.

B23tg—40 to 51 inches; light brownish gray (10YR 6/2) silt loam; many medium distinct yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; patchy clay films on faces of peds; many gray silt loam tongues 1 to 1 1/2 inches wide extend throughout the horizon; few black stains; neutral; clear irregular boundary.

B24tg—51 to 72 inches; light brownish gray (10YR 6/2) silt loam; many coarse distinct yellowish brown (10YR 5/4) mottles; weak coarse prismatic structure parting to moderate medium subangular blocky; few

son, 2 1/2 miles west of Highway 51, 220 feet south of road, NE1/4NE1/4 sec. 30, T. 4 N., R. 1 W.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) silt loam; weak medium granular structure; very friable; many fine medium and coarse roots; few fine black and brown concretions; very strongly acid; clear smooth boundary.

A2—2 to 4 inches; brown (10YR 5/3) silt loam; weak medium granular structure; very friable; many fine and few coarse roots; many fine pores; few fine black and brown concretions; very strongly acid; clear smooth boundary.

B21—4 to 18 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common fine pores; few fine black concretions; very strongly acid; gradual wavy boundary.

B22—18 to 23 inches; yellowish brown (10YR 5/4) silt loam; many medium faint pale brown (10YR 6/3) and few medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; many fine pores; common pockets of uncoated silt; many fine black

The B horizon is yellowish brown, dark yellowish brown, or light yellowish brown. Clay content of the B2 horizon ranges from 18 to 30 percent.

The A'2&B'x1 horizon is gray, light gray, light brownish gray, or grayish brown and has brownish mottles; or it is mottled brown and gray.

The Bx horizon is brown and has gray and brown mottles, or it is mottled yellow, brown, and gray. Depth to the fragipan ranges from 20 to 34 inches. The texture is silt loam or silty clay loam.

Grenada soils are associated with Calhoun and Calloway soils. Grenada soils are better drained than Calhoun soils, and they have a fragipan. Unlike Grenada soils, Calloway soils have grayish mottles in the upper 16 inches.

Kisatchie series

The Kisatchie series consists of well drained soils that formed in clayey material over sandstone. Slopes range from 5 to 30 percent.

Typical pedon of Kisatchie fine sandy loam, in an area of Loring-Kisatchie association, hilly, 3 miles south of

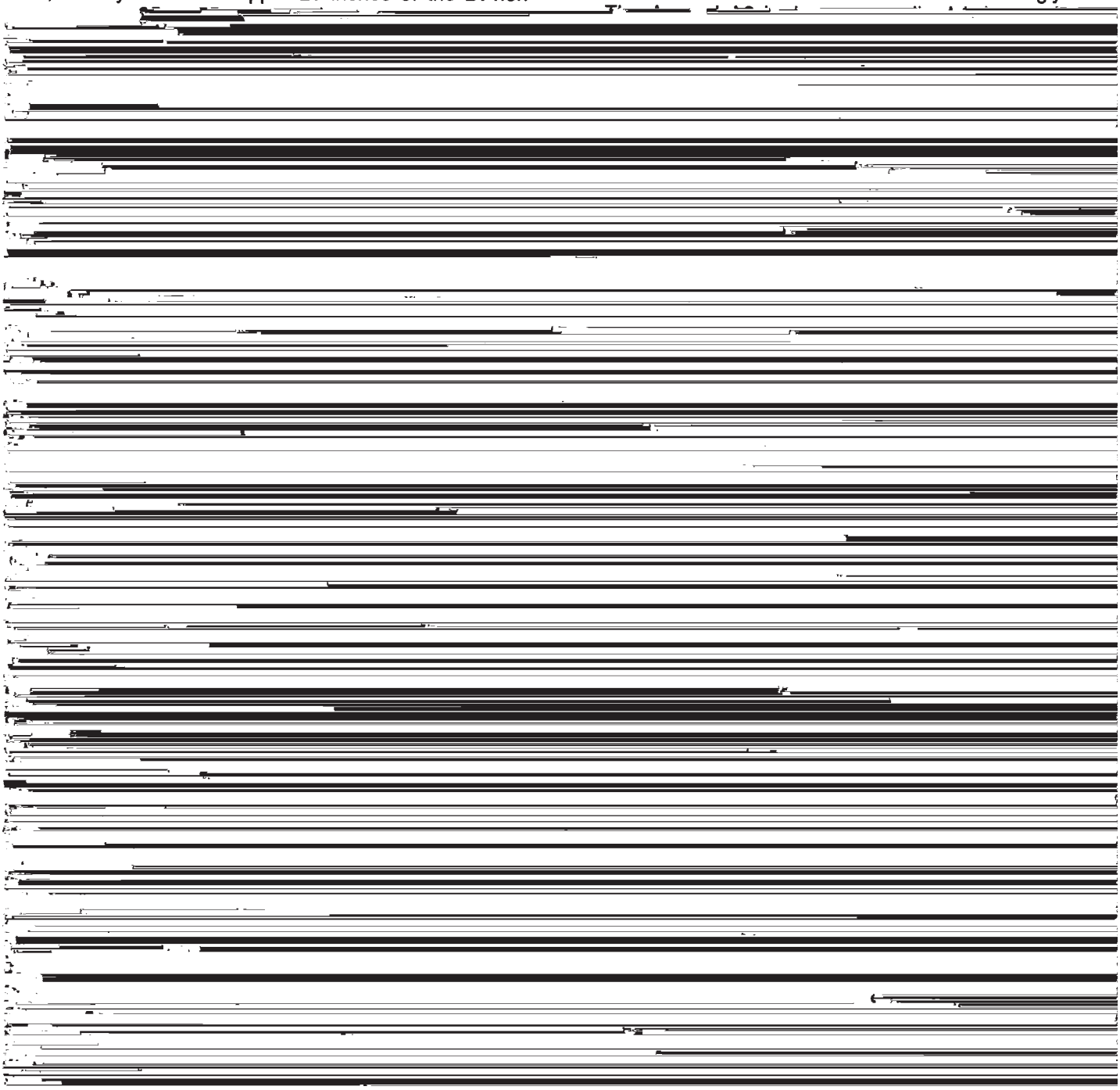
The solum is 20 to 40 inches thick over sandstone or siltstone. The A horizon is strongly acid to very strongly acid, and the Bt horizon is very strongly acid to extremely acid.

The A11 horizon is black, very dark gray, or very dark grayish brown. The A12 horizon is dark gray, grayish brown, or dark grayish brown.

The Bt horizon is pale olive, olive gray, grayish brown, or yellowish brown. The texture is silty clay, silty clay loam, or clay loam. The upper 20 inches of the Bt hori-

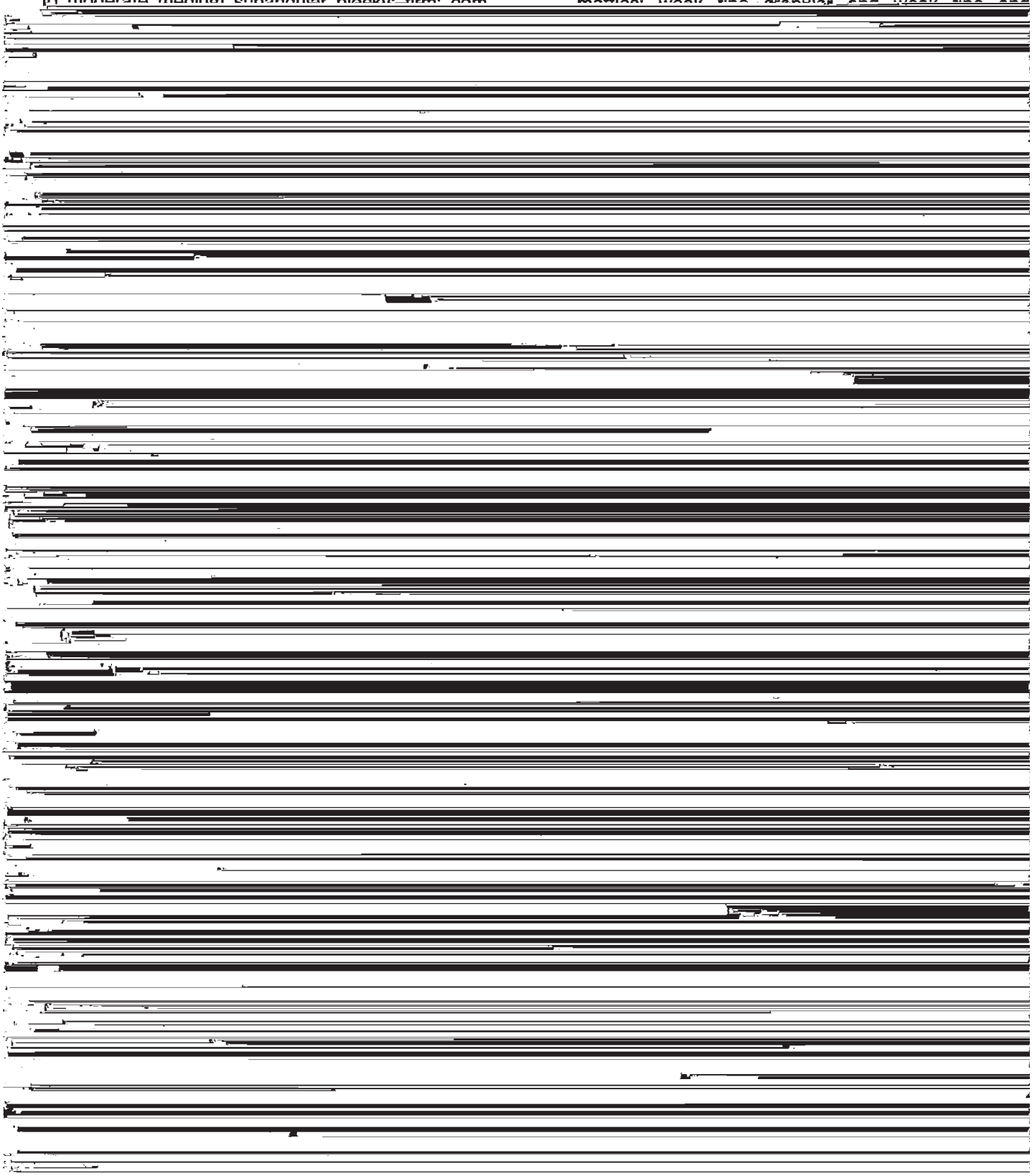
IIB24t—50 to 80 inches; red (2.5YR 4/8) sandy clay loam; moderate medium and fine subangular blocky structure; friable; few fine roots; thin patchy clay films on faces of peds; clay and oxide bridging and coating sand grains; common fine and medium pockets of uncoated sand grains; strongly acid.

The solum is more than 60 inches thick. Depth to the horizons that are more than 15 percent sand is 34 to 48 inches. All horizons are medium acid to strongly acid.



2) mottles; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; com-

and few medium distinct grayish brown (10YR 5/2)



brownish gray, gray, or light gray and has brown and gray mottles.

The Ab&B23b horizon is similar in color to the B22 horizon. The texture of the B21, B22, and Ab&B23b horizons is silt or silt loam. The Ab&B23b horizon is 6 to 18 percent clay in the 10- to 40-inch control section.

The B24b and B25b horizons are mottled brown and gray; are brown, dark yellowish brown, or dark brown; or are similar to the B22 horizon. The texture is silt loam or silty clay loam.

The Ap horizon is dark brown, brown, or dark yellowish brown.

The Bt horizon is dark brown, brown, strong brown, dark yellowish brown, or yellowish brown. The texture is silt loam or silty clay loam. Clay content ranges from 25 to 30 percent in the upper 20 inches.

The C horizon is dark brown, strong brown, brown, dark yellowish brown, or yellowish brown.

Memphis soils are associated with Lexington, Loring, Natchez, and Smithdale soils. Unlike Lexington soils,

The A1 horizon is dark grayish brown, dark brown, or very dark grayish brown. The A12 horizon is brown, yellowish brown, or grayish brown.

The B horizon is yellowish brown, dark yellowish brown, or brown. The texture is silt loam or silt. Clay content ranges from 8 to 18 percent in the upper 20 inches of the B horizon.

The color and texture of the C horizon are similar to the color and texture of the B horizon. Content of shell fragments in the C horizon ranges from few to many.

Natchez soils are associated with Memphis and Riedtown soils. Unlike Memphis soils, Natchez soils do not have clay accumulations in the B horizon. Natchez soils are better drained and are steeper than the Riedtown soils.

Oaklimeter series

The Oaklimeter series consists of moderately well drained soils that formed in silty alluvial material. Slopes are 0 to 2 percent.

Typical pedon of Oaklimeter silt loam, in a large soybean field 1 1/2 miles north of Raymond, 0.4 mile north of Natchez trace and 50 feet east of road, SE1/4NW1/4 sec. 8 T. 5 N., R. 8 W.

Ap—0 to 6 inches; brown (10YR 5/3) silt loam; weak medium granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.

B21—6 to 11 inches; dark yellowish brown (10YR 4/4) silt loam; many medium distinct brown (10YR 5/3) mottles; weak medium subangular blocky structure; friable; few fine roots; common fine pores; few black concretions; strongly acid; clear smooth boundary.

B22—11 to 18 inches; mottled dark brown (10YR 4/3) and grayish brown (10YR 5/2) silt loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few fine pores; silt coatings on faces of prisms; few pockets of gray silt; strongly acid.

The solum is 60 to more than 80 inches thick. Depth to the buried solum ranges from 20 to 40 inches. In unlimed areas, reaction is strongly acid to very strongly acid.

The Ap horizon is dark grayish brown, brown, dark brown, or dark yellowish brown. The texture is silt or silt loam.

The B21 horizon is brown, dark brown, or yellowish brown, or it has brown mottles. The B22 and B23 horizons have brown and gray mottles or are brown or yellowish brown and have few to many grayish mottles.

The A2b&B24b horizon is light brownish gray, gray, or light gray and has brown mottles, or it is mottled gray and brown.

The Bb horizon is grayish brown or light brownish gray, or it is mottled gray and brown. The texture is silt loam or silty clay loam.

Oaklimeter soils are associated with Ariel, McRaven, and Riedtown soils. They are more poorly drained than Ariel soils. Oaklimeter soils are better drained and are more acid than McRaven soils. They are more acid than Riedtown soils.

Providence series

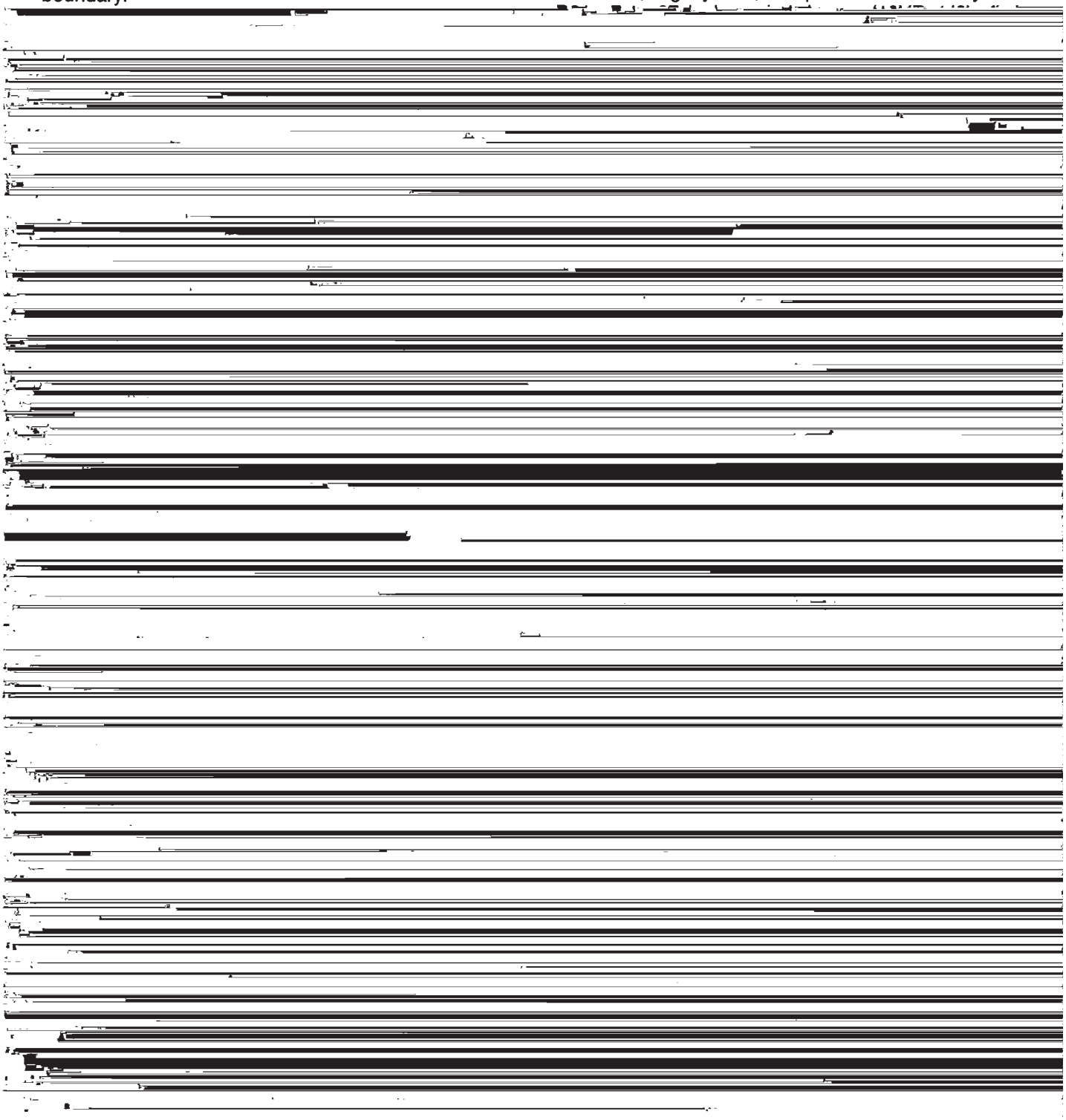
The Providence series consists of moderately well drained soils that formed in silty material on uplands. Slopes range from 2 to 15 percent.

Typical pedon of Providence silt loam, 2 to 5 percent slopes, eroded, in a pasture 2 1/2 miles south of Terry

moderate medium subangular blocky; firm; compact and brittle; few roots between prisms; many fine voids; thin patchy clay films on faces of peds; gray (10YR 6/1) silt loam coatings on prisms; few fine black concretions; very strongly acid; clear irregular boundary.

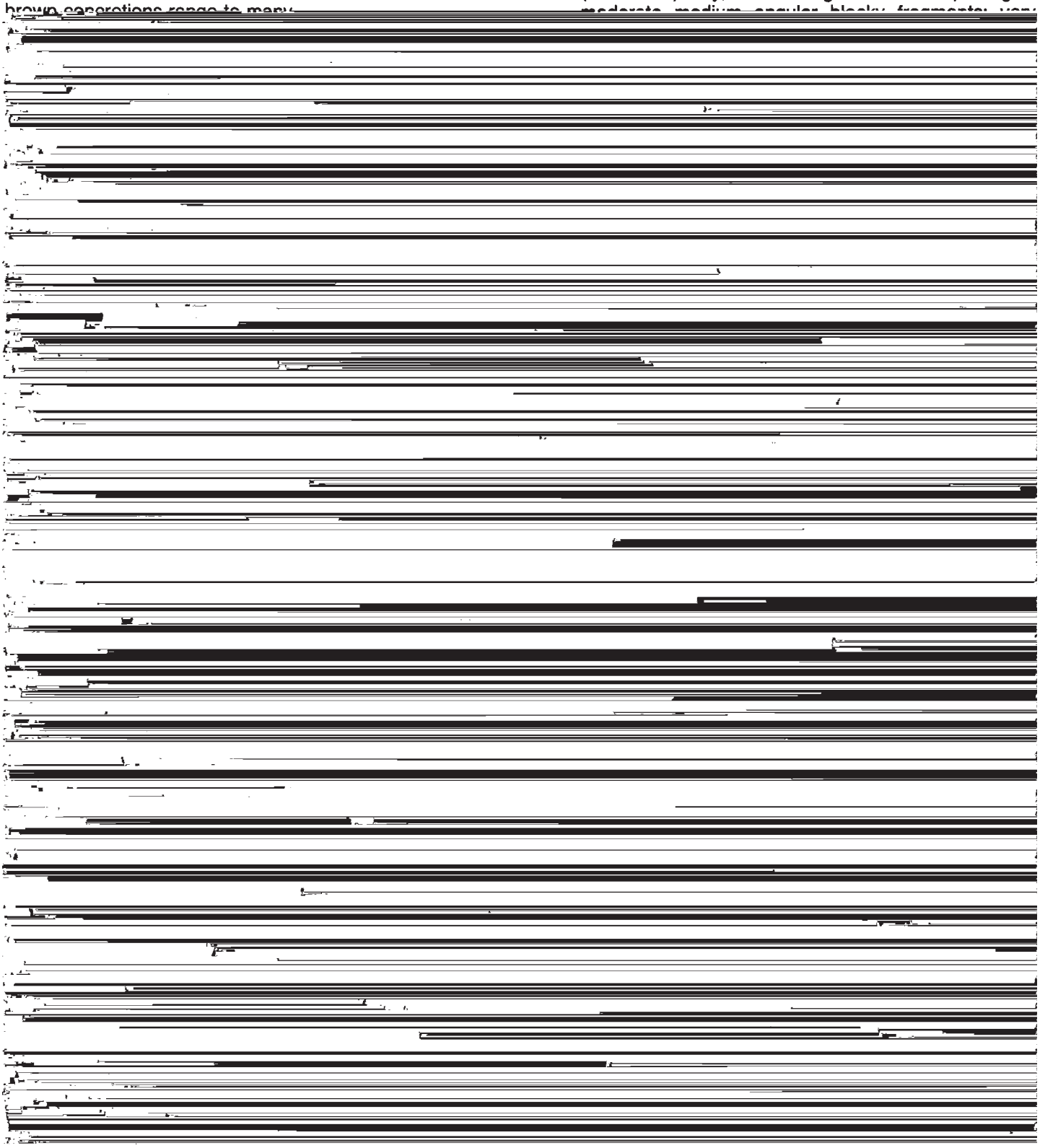
467, 1 1/4 miles west of Bakers Creek from Highway 467, NW1/4SE1/4 sec. 3, T. 15 N., R. 4 E.

Ap—0 to 7 inches; dark brown (10YR 4/3) silt loam; weak fine granular structure; very friable; many fine roots; slightly acid; abrupt smooth boundary.



Weighted average clay content in the 10- to 40-inch control section ranges from 10 to 18 percent. In some pedons there are no concretions; in others, black and brown concretions range to many

IIC—39 to 72 inches; mottled light olive brown (2.5Y 5/4), yellowish brown (10YR 5/4), and grayish brown (10YR 5/2) clay; intersecting slickensides parting to moderate, medium, angular, blocky fragments; very



B21t—11 to 41 inches; yellowish red (5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; common fine and medium pores; thin patchy clay films on faces of peds; sand grains bridged and coated with oxides and clay; very strongly acid; clear smooth boundary.

B22t—41 to 62 inches; red (2.5YR 4/8) sandy loam; weak medium subangular blocky structure; friable; few fine and medium roots; sand grains coated and bridged with clay; few pockets of uncoated sand grains; very strongly acid; clear smooth boundary.

B22t—62 to 85 inches; yellowish red (5YR 4/8) sandy loam; friable; few fine roots; sand grains bridged and coated with clay; common pockets of uncoated sand grains; few fine pebbles of quartz; very strongly acid.

The solum is 60 to more than 100 inches thick. It is strongly acid to very strongly acid.

The A1 horizon is dark grayish brown or dark brown. The A2 horizon is brown, yellowish brown, or pale brown.

The B1 horizon, when present, is strong brown or yellowish red. The texture is sandy loam or loam. The upper part of the Bt horizon is yellowish red or red. The

(6) United States Department of Agriculture. 1951. Soil survey manual. U. S. Dep. Agric. Handb. 18, 503 pp., illus. Supplements replacing pp. 173-188 issued May 1962

(7) United States Department of Agriculture. 1961. Land capability classification. U. S. Dep. Agric. Handb. 210, 21 pp.

(8) United States Department of Agriculture. 1969. Forest statistics for Mississippi counties. Forest Serv., South Forest Exp. Stn. Resour. Bull. SO-15, 24 pp., illus.

(9) Unites States Department of Commerce. 1971. 1970 census of population. Bur. Census, vol. 26.

Glossary

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single mapping unit.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

erately well drained soils are wet for only a short time during the growing season, but periodically for long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained

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

al 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.

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.

Landslide. The rapid downhill movement of a mass of soil and loose rock generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

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

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Morphology, soil. The physical makeup of the soil, in-

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

100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Soil. A natural, three-dimensional body at the earth's surface that is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in mature soil consists of the A

divided by specifying "coarse," "fine," or " very fine."

Water table. The upper limit of the soil or underlying rock material that is wholly saturated with water.

Water table, apparent. A thick zone of free water in the soil. An apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

Water table, artesian. A water table under hydrostatic head, generally beneath an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole.

Water table, perched. A water table standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

ILLUSTRATIONS

Figure 1.—A golf green on Byram silt loam, 2 to 5 percent slopes, eroded.

Figure 2.—Soybeans on Grenada silt loam, 2 to 5 percent slopes. Parallel terraces on this field control surface runoff and help reduce erosion.

Figure 3.—Loring silt loam, 2 to 5 percent slopes, eroded, is suited to corn.

Figure 4.—Oats planted for winter grazing on Loring silt loam, 5 to 8 percent slopes, eroded. The pond in the foreground furnishes water for livestock and for fish production.

Figure 5.—Oats and crimson clover on Loring silt loam, 8 to 17 percent slopes, eroded, provide good grazing for dairy cattle.

Figure 6.—A roadcut showing the sandstone that underlies Kisatchie soils.

Figure 7.—McRaven silt loam near the Big Black River generally is flooded in winter and spring.

Figure 8.—An area of Memphis-Udorthents complex, gullied. The Memphis soil between the gullies can be smoothed and planted to pasture grass if the gullies are not too deep.

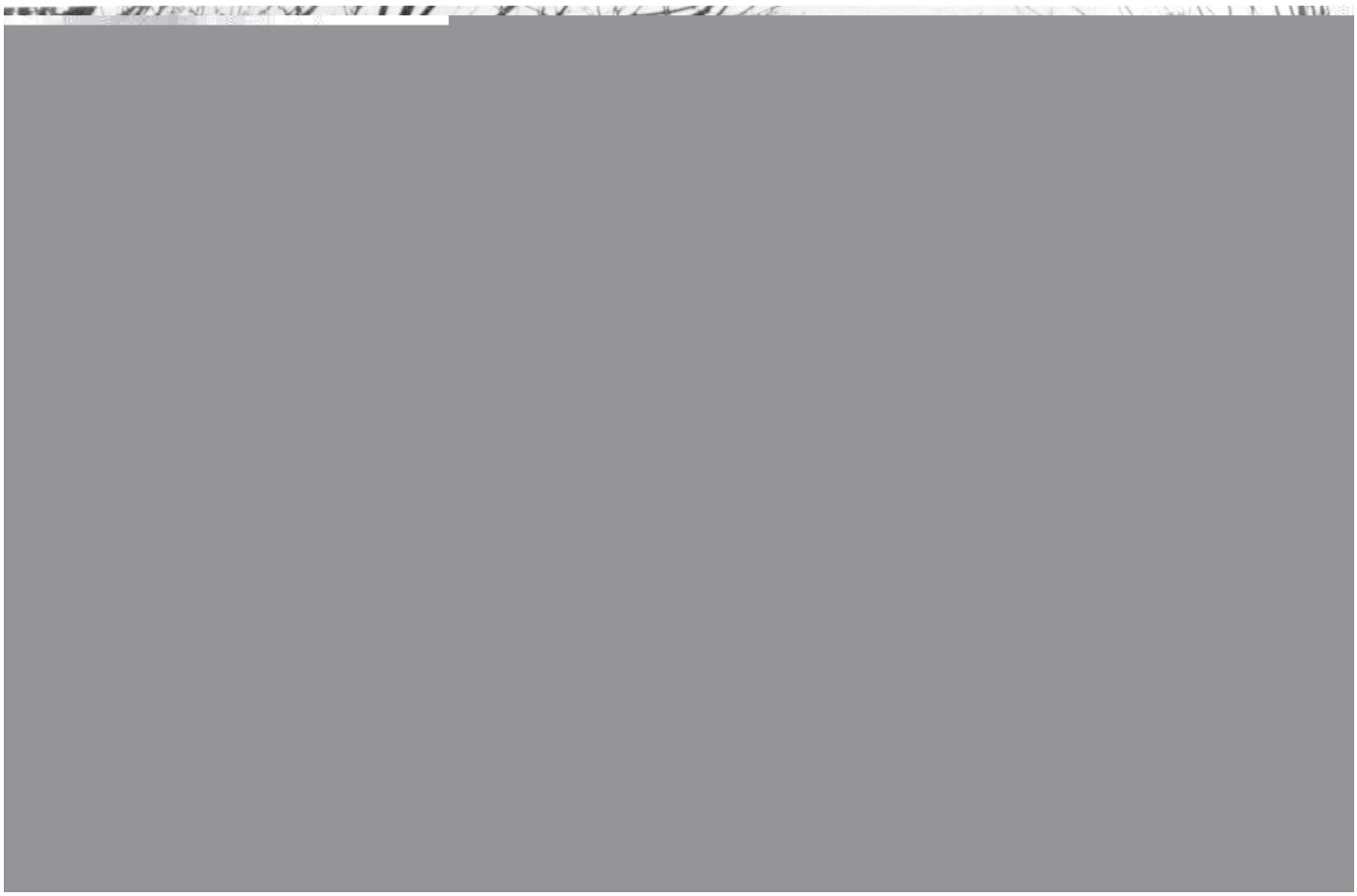


Figure 9.—This pecan orchard on Providence silt loam, 2 to 5 percent slopes, eroded, is also used for wheat.

Figure 10.—A thinned stand of loblolly pine on Providence silt loam, 8 to 15 percent slopes, eroded.

Figure 11.—Profile of Calloway silt loam. The A'2 horizon is at a depth of about 20 inches, and below that horizon there is a fragipan.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

Month	Temperature[1]						Precipitation[1]				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days[2]	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	57.7	36.4	47.1	80	9	102	4.57	2.20	6.49	7	.1
February---	59.2	35.1	47.2	81	14	62	4.64	2.93	6.18	7	.3
March------	68.3	43.5	56.0	86	21	250	5.23	3.18	7.07	7	.4
April------	77.6	53.4	65.6	90	33	468	5.64	2.74	8.00	6	.0
May--------	83.8	60.2	72.0	94	42	682	5.16	2.44	7.36	7	.0
June-------	90.1	67.5	78.8	98	53	864	2.63	1.15	3.83	5	.0
July-------	91.7	70.6	81.2	100	58	967	3.94	2.12	5.42	7	.0
August-----	90.8	69.8	80.3	98	58	939	4.23	2.74	5.57	7	.0
September--	86.3	64.9	75.6	96	44	768	4.08	1.76	5.96	5	.0
October----	78.8	52.2	65.5	90	34	481	3.05	.45	5.04	3	.0
November---	68.1	43.1	55.6	85	22	201	3.70	2.13	4.98	6	.0
December---	59.8	37.9	48.9	91	16	129	6.40	4.66	8.01	9	.3
Year-----	76.0	52.9	64.5	101	9	5,913	53.27	45.58	62.26	76	1.1

[1]Recorded in the period 1963-75 at Jackson, Miss.

[2]A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

Probability	Temperature[1]		
	24° F or lower	28° F or lower	32° F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	March 23	March 23	April 8
2 years in 10 later than--	March 14	March 18	April 3
5 years in 10 later than--	February 26	March 8	March 26
First freezing temperature in fall:			
1 year in 10 earlier than--	November 12	November 2	October 23
2 years in 10 earlier than--	November 20	November 8	October 29
5 years in 10 earlier than--	December 4	November 19	November 9

[1]Recorded in the period 1963-75 at Jackson, Miss.

TABLE 3.--GROWING SEASON LENGTH

Probability	Daily minimum temperature during growing season[1]		
	Higher than 24° F	Higher than 28° F	Higher than 32° F
	Days	Days	Days
9 years in 10	242	228	210
8 years in 10	255	237	216
5 years in 10	381	256	228
2 years in 10	306	274	239
1 year in 10	319	283	245

[1]Recorded in the period 1963-75 at Jackson, Miss.

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

Map unit	Extent of area	Cultivated farm crops	Specialty crops	Woodland	Urban uses	Intensive recreation areas	Extensive recreation areas
	Pct						
1. Cascilla-Bonn-Deerford---	2	Poor: floods.	Poor: floods.	Good----------	Poor: floods.	Poor: floods.	Fair: floods.
2. Oaklimeter-Ariel---------	1	Poor: floods.	Poor: floods.	Good----------	Poor: floods.	Poor: floods.	Fair: floods.
3. Riedtown-Oaklimeter McRaven.	10	Good----------	Good----------	Good----------	Poor: floods.	Poor: floods.	Fair: floods.
4. Loring-Siwell-Urban land-	10	Not rated*-----	Not rated*-----	Good----------	Fair: shrink-swell.	Poor: slope.	Fair: percolates slowly.
5. Loring-Kisatchie---------	1	Poor: slope.	Poor: slope.	Good----------	Poor: slope.	Poor: slope.	Fair: slope.
6. Loring-Memphis----------	6	Fair: slope.	Fair: slope.	Good----------	Fair: slope.	Fair: slope.	Good.
7. Loring-Providence-Grenada	24	Fair: slope.	Fair: slope.	Good----------	Fair: slope.	Fair: slope.	Good.
8. Memphis-Loring----------	22	Poor: slope.	Poor: slope.	Good----------	Fair: slope.	Fair: slope.	Good.
9. Memphis-Natchez----------	15	Poor: slope.	Poor: slope.	Good----------	Poor: slope.	Poor: slope.	Fair: slope.
10. Providence-Smithdale----	3	Poor: slope.	Poor: slope.	Good----------	Poor: slope.	Poor: slope.	Fair: slope.
11. Smithdale-Lexington-Memphis.	4	Poor: slope.	Poor: slope.	Good----------	Poor: slope.	Poor: slope.	Fair: slope.
12. Memphis-Riedtown--------	2	Good----------	Good----------	Good----------	Good: parts subject to flooding.	Good: parts subject to flooding.	Good.

*Because the present use of this map unit is mainly urban development, a rating for cultivated farm crops and for specialty crops is not appropriate.

TABLE 5.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
Ad	Adler silt loam	3,828	0.7
BD	Bonn-Deerford association	2,565	0.5
BrB2	Byram silt loam, 2 to 5 percent slopes, eroded	1,551	0.3
BrC2	Byram silt loam, 5 to 8 percent slopes, eroded	4,428	0.8
BuC	Byram-Urban land complex, 2 to 8 percent slopes	7,495	1.3
Ca	Calhoun silt loam	2,284	0.4
Co	Calloway silt loam	6,905	1.2
CuA	Calloway-Urban land complex	6,124	1.1
CY	Cascilla-Chenneby association	8,181	1.5
GrA	Grenada silt loam, 0 to 2 percent slopes	4,601	0.8
GrB	Grenada silt loam, 2 to 5 percent slopes	10,417	1.9
LoB2	Loring silt loam, 2 to 5 percent slopes, eroded	35,223	6.3
LoC2	Loring silt loam, 5 to 8 percent slopes, eroded	40,004	7.1
LoC3	Loring silt loam, 5 to 8 percent slopes, severely eroded	3,282	0.6
LoD2	Loring silt loam, 8 to 17 percent slopes, eroded	26,249	4.7
LoD3	Loring silt loam, 8 to 17 percent slopes, severely eroded	5,517	1.0
LuC	Loring-Urban land complex, 2 to 8 percent slopes	17,827	3.2
LuD	Loring-Urban land complex, 8 to 15 percent slopes	746	0.1
LW	Loring-Kisatchie association, hilly	5,331	0.9
Mc	McRaven silt loam	11,112	2.0
MeA	Memphis silt loam, 0 to 2 percent slopes	2,546	0.5
MeB2	Memphis silt loam, 2 to 5 percent slopes, eroded	20,001	3.6
MeC2	Memphis silt loam, 5 to 8 percent slopes, eroded	27,457	4.9
MeD2	Memphis silt loam, 8 to 17 percent slopes, eroded	46,662	8.3
MeD3	Memphis silt loam, 8 to 17 percent slopes, severely eroded	14,691	2.6

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

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop is generally not grown on the soil]

Soil name and map symbol	Cotton lint	Corn	Soybeans	Common bermudagrass	Improved bermudagrass	Bahiagrass	Tall fescue
	Lb	Bu	Bu	AUM[1]	AUM[1]	AUM[1]	AUM[1]
Ad---------- Adler	800	100	35	---	12.0	---	9.5
BD**.							

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

Soil name and map symbol	Cotton lint	Corn	Soybeans	Common bermudagrass	Improved bermudagrass	Pecans	Tall fescue

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

Soil name and map symbol	Cotton lint	Corn	Soybeans	Common bermudagrass	Improved bermudagrass	Bahiagrass	Tall fescue
	Lb	Bu	Bu	AUM*	AUM*	AUM*	AUM*
SuC---------- Siwell	---	---	---	---	---	---	---
SuD---------- Siwell	---	---	---	---	---	---	---
SW**:							
Smithdale----------	---	---	---	4.5	---	5.0	---
Lexington----------	---	---	---	5.0	---	---	---
Memphis----------	---	---	---	5.0	---	---	---
Ur**. Urban land							

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 7.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Absence of an entry indicates no acreage]

Class	Total acreage	Major management concerns (Subclass)			
		Erosion (e)	Wetness (w)	Soil problem (s)	Climate (c)
		Acres	Acres	Acres	Acres
I	2,546	---	---	---	---
II	208,910	70,039	138,871	---	---
III	101,051	98,767	2,284	---	---
IV	27,890	12,435	14,352	1,103	---
V	1,462	---	1,462	---	---
VI	182,223	182,223	---	---	---
VII	3,059	3,059	---	---	---
VIII	---	---	---	---	---

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available]

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	
Ad---------- Adler	1o4	Slight	Slight	Slight	Moderate	Green ash---------- Eastern cottonwood-- Water oak---------- Willow oak---------- Sweetgum---------- American sycamore---	95 120 100 100 100 115	Green ash, eastern cottonwood, sweetgum, American sycamore.
BD*: Penn	5to	Slight	Severe	Severe		Eastern redcedar		

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	Plant competition	Common trees	Site index	
LoB2, LoC2, LoC3, LoD2, LoD3--- Loring	2o7	Slight	Slight	Slight	Severe	Cherrybark oak--- Loblolly pine--- Shortleaf pine--- Sweetgum--- Water oak---	86 95 90 90 90	Loblolly pine, shortleaf pine, cherrybark oak, sweetgum, yellow-poplar.
LuC*, LuD*: Loring---	2o7	Slight	Slight	Slight	Severe	Cherrybark oak--- Loblolly pine--- Shortleaf pine--- Sweetgum--- Water oak---	86 95 90 90 90	Loblolly pine, shortleaf pine, cherrybark oak, sweetgum, yellow-poplar.
Urban land.								
LW*: Loring---	2o7	Slight	Slight	Slight	Severe	Cherrybark oak--- Loblolly pine--- Shortleaf pine--- Sweetgum--- Water oak---	86 95 90 90 90	Loblolly pine, shortleaf pine, cherrybark oak, sweetgum, yellow-poplar.
Kisatchie---	4d2	Moderate	Moderate	Moderate	---	Loblolly pine--- Slash pine--- Longleaf pine--- Shortleaf pine---	70 70 --- ---	Loblolly pine, slash pine, longleaf pine.
Mc--- McRaven	1w5	Slight	Moderate	Slight	Moderate	Cherrybark oak--- Eastern cottonwood-- Green ash--- Sweetgum--- American sycamore--- Water oak--- Willow oak---	120 110 90 100 110 95 95	Eastern cottonwood, green ash, sweetgum, American sycamore.
MeA, MeB2, MeC2, MeD2, MeD3--- Memphis	1o7	Slight	Slight	Slight	Moderate	Cherrybark oak--- Loblolly pine--- Sweetgum--- Water oak---	100 105 90 90	Cherrybark oak, loblolly pine, sweetgum, yellow-poplar.
Mg*: Memphis---	1o8	Moderate	Slight	Slight	Moderate	Cherrybark oak--- Loblolly pine--- Sweetgum--- Water oak---	100 105 90 90	Cherrybark oak, loblolly pine, sweetgum, yellow-poplar.
Udorthents.								
MN*: Memphis---	1o8	Moderate	Slight	Slight	Moderate	Cherrybark oak--- Loblolly pine--- Sweetgum--- Water oak---	100 105 90 90	Cherrybark oak, loblolly pine, sweetgum, yellow-poplar.
Natchez---	1r8	Moderate	Moderate	Slight	Slight	Cherrybark oak--- Eastern cottonwood-- Loblolly pine--- Sweetgum---	105 110 100 105	Eastern cottonwood, green ash, loblolly pine, sweetgum, American sycamore, yellow-poplar.
Riedtown---	1w5	Slight	Moderate	Moderate	Moderate	Eastern cottonwood-- Green ash--- Sweetgum--- American sycamore--- Water oak--- Willow oak--- Yellow-poplar---	115 90 105 110 100 100 110	Eastern cottonwood, green ash, sweetgum, American sycamore, yellow-poplar.

See footnote at end of table.

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	Plant competition	Common trees	Site index	
Oa Oaklimeter	1o7	Slight	Slight	Slight	Moderate	Cherrybark oak Eastern cottonwood Green ash Loblolly pine Nuttall oak Willow oak Sweetgum	100 100 90 90 100 100 100	Cherrybark oak, eastern cottonwood, loblolly pine, Nuttall oak, sweetgum, water oak, yellow-poplar.
OK*: Oaklimeter	1w8	Slight	Moderate	Moderate	Moderate	Cherrybark oak Eastern cottonwood Green ash Loblolly pine Nuttall oak Willow oak Sweetgum	100 100 90 90 100 100 100	Cherrybark oak, eastern cottonwood, loblolly pine, Nuttall oak, sweetgum, water oak, yellow-poplar.
Ariel	1w8	Slight	Moderate	Moderate	Moderate	Cherrybark oak Eastern cottonwood Loblolly pine Sweetgum Water oak Yellow-poplar	110 115 95 100 105 110	Cherrybark oak, eastern cottonwood, loblolly pine, sweetgum, water oak, yellow-poplar.
PoB2, PoC2, PoC3, PoD2 Providence	2o7	Slight	Slight	Slight	Slight	Loblolly pine Longleaf pine Sweetgum	87 73 90	Loblolly pine, Shumard oak, sweetgum, yellow-poplar.
PrE*, PS*: Providence	2o7	Slight	Slight	Slight	Slight	Loblolly pine Longleaf pine Sweetgum	87 73 90	Loblolly pine, Shumard oak, sweetgum, yellow-poplar.
Smithdale	2o2	Moderate	Slight	Slight	Moderate	Loblolly pine Longleaf pine Slash pine	86 69 85	Loblolly pine, longleaf pine, slash pine.
Re Riedtown	1o4	Slight	Slight	Slight	Moderate	Eastern cottonwood Green ash Sweetgum American sycamore	115 90 105 110	Eastern cottonwood, green ash, 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	Plant competition	Common trees	Site index	
SW*:								
Smithdale	2o2	Moderate	Slight	Slight	Moderate	Loblolly pine Longleaf pine Slash pine	86 69 85	Loblolly pine, longleaf pine, slash pine.
Lexington	2o8	Moderate	Slight	Slight	Moderate	Cherrybark oak Southern red oak Loblolly pine Shortleaf pine Sweetgum	86 80 95 90 90	Cherrybark oak, Shumard oak, loblolly pine, shortleaf pine, sweetgum, yellow-poplar.
Memphis	1o8	Moderate	Slight	Slight	Moderate	Cherrybark oak Loblolly pine Sweetgum Water oak	100 105 90 90	Cherrybark oak, loblolly pine, sweetgum, yellow-poplar.

* See description of the map unit for the composition and behavior characteristics of the map unit.

TABLE 9.--BUILDING SITE DEVELOPMENT

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

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
Ad---------- Adler	Severe: floods, wetness.	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods, wetness, low strength.
BD*: Bonn----------	Severe: floods, wetness, cutbanks cave.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
Deerford---------	Severe: floods, wetness, cutbanks cave.	Severe: floods.	Severe: floods, wetness.	Severe: floods.	Severe: floods.
BrB2, BrC2-------- Byram	Severe: too clayey, wetness.	Moderate: shrink-swell, low strength.	Moderate: shrink-swell, low strength.	Moderate: shrink-swell, low strength.	Moderate: shrink-swell, low strength.
BuC*: Byram----------	Severe: too clayey, wetness.	Moderate: shrink-swell, low strength.	Moderate: shrink-swell, low strength.	Moderate: shrink-swell, low strength.	Moderate: shrink-swell, low strength.
Urban land.					
Ca---------- Calhoun	Severe: wetness, cutbanks cave.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Co---------- Calloway	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, corrosive.	Moderate: wetness, low strength.
CuA*: Calloway---------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, corrosive.	Moderate: wetness, low strength.
Urban land.					
CY*: Cascilla---------	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.
Chenneby---------	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, low strength.
GrA, GrB---------- Grenada	Moderate: wetness.	Moderate: wetness, low strength.	Moderate: wetness, low strength.	Moderate: corrosive, wetness, low strength.	Moderate: low strength, wetness.
LoB2---------- Loring	Moderate: low strength, wetness.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.
LoC2, LoC3-------- Loring	Moderate: low strength, wetness.	Moderate: low strength.	Moderate: low strength.	Moderate: slope, low strength.	Moderate: low strength.

See footnote at end of table.

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
LoD2, LoD3: Loring	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
LuC*:					
Loring	Moderate: low strength, wetness.	Moderate: low strength.	Moderate: low strength.	Moderate: slope, low strength.	Moderate: low strength.
Urban land.					
LuD*:					
Loring	Moderate: slope, wetness, low strength.	Moderate: slope, low strength.	Moderate: slope, low strength.	Severe: slope.	Moderate: slope, low strength.
Urban land.					
LW*:					
Loring	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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
OK*: Ariel	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.
Pa*. Pits					
PoB2 Providence	Moderate: wetness.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.
PoC2, PoC3 Providence	Moderate: wetness.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength, slope.	Moderate: low strength.
PoD2 Providence	Moderate: wetness, slope.	Moderate: low strength, slope.	Moderate: low strength, slope.	Severe: slope.	Moderate: low strength, slope.
PrE*: Providence	Moderate: wetness, slope.	Moderate: low strength, slope.	Moderate: low strength, slope.	Severe: slope.	Moderate: low strength, slope.
Smithdale	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.
PS*: Providence	Moderate: wetness, slope.	Moderate: low strength, slope.	Moderate: low strength, slope.	Severe: slope.	Moderate: low strength, slope.
Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Re Riedtown	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
SeB2, SeC2 Siwell	Severe: too clayey, wetness.	Severe: shrink-swell, low strength.	Severe: shrink-swell, low strength.	Severe: shrink-swell.	Severe: shrink-swell.
SuC*, SuD*: Siwell	Severe:	Severe:	Severe:	Severe:	Severe:

TABLE 10.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate, "good," and "fair." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Ad Adler	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods.	Severe: floods.	Good.
BD*: Bonn	Severe: percs slowly, floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
Deerford	Severe: percs slowly, floods, wetness.	Severe: floods.	Severe: floods, wetness.	Severe: floods, wetness.	Fair: too clayey.
BrB2, BrC2 Byram	Severe: percs slowly, wetness.	Moderate: slope.	Severe: too clayey, wetness.	Slight	Fair: too clayey.
BuC*: Byram	Severe: percs slowly, wetness.	Moderate: slope.	Severe: too clayey, wetness.	Slight	Fair: too clayey.
Urban land.					
Ca Calhoun	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Co Calloway	Severe: percs slowly, wetness.	Slight	Moderate: wetness, percs slowly.	Moderate: wetness.	Good.
CuA*: Calloway	Severe: percs slowly, wetness	Slight	Moderate: wetness, percs slowly	Moderate: wetness.	Good.

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
LuC*:					
Loring	Severe: percs slowly.	Moderate: slope.	Slight	Slight	Good.
Urban land.					
LuD*:					
Loring	Severe: percs slowly.	Severe: slope.	Slight	Moderate: slope.	Fair: slope.
Urban land.					
LW*:					
Loring	Severe: percs slowly.	Severe: slope.	Moderate: slope.	Severe: slope.	Poor: slope.
Kisatchie	Severe: slope, percs slowly, depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock, too clayey.	Severe: slope.	Poor: too clayey, thin layer.
Mc	Severe: floods, wetness.	Slight	Severe: floods, wetness.	Severe: floods, wetness.	Good.
McRaven					
MeA	Slight	Moderate: seepage.	Slight	Slight	Fair: too clayey.
Memphis					
MeB2, MeC2	Slight	Moderate: seepage, slope.	Slight	Slight	Fair: too clayey.
Memphis					
MeD2, MeD3	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.	Fair: too clayey, slope.
Memphis					
Mg*:					
Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Udorthents.					
MN*:					
Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Natchez	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.	Poor: slope.
Riedtown	Severe: floods, wetness.	Moderate: seepage.	Severe: floods, wetness.	Severe: floods, wetness.	Good.
Oa	Severe: floods, wetness.	Moderate: seepage.	Severe: floods, wetness.	Severe: floods, wetness.	Good.
Oaklimeter					

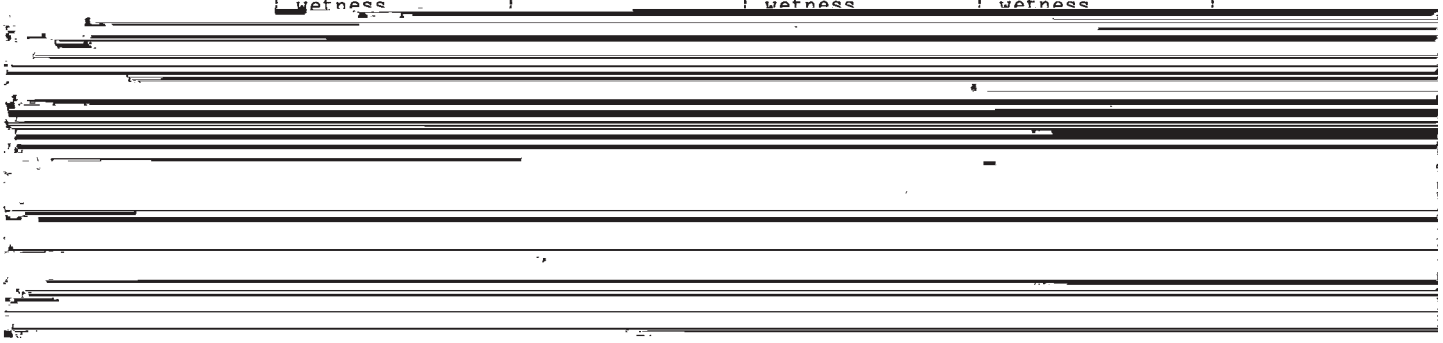


TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
PoB2, PoC2, PoC3---- Providence	Severe: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
PoD2---------- Providence	Severe: percs slowly.	Severe: slope.	Moderate: too clayey.	Moderate: slope.	Fair: too clayey.
PrE*: Providence---------	Severe: percs slowly.	Severe: slope.	Moderate: too clayey.	Moderate: slope.	Fair: too clayey.
Smithdale----------	Moderate: slope.	Severe: seepage, slope.	Slight----------	Moderate: slope.	Fair: slope.
PS*: Providence---------	Severe: percs slowly.	Severe: slope.	Moderate: too clayey.	Moderate: slope.	Fair: too clayey.
Smithdale----------	Severe: slope.	Severe: seepage, slope.	Severe: slope.	Severe: slope.	Poor: slope.
Re---------- Riedtown	Severe: floods, wetness.	Moderate: seepage.	Severe: floods, wetness.	Severe: floods, wetness.	Good.
SeB2, SeC2---------- Siwell	Severe: percs slowly, wetness.	Moderate: slope, wetness.	Severe: too clayey.	Severe: wetness.	Fair: too clayey.
SuC*: Siwell----------	Severe: percs slowly, wetness.	Moderate: slope, wetness.	Severe: too clayey.	Severe: wetness.	Fair: too clayey.
Urban land.					
SuD*: Siwell----------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey.	Severe: wetness, slope.	Fair: too clayey, slope.
Urban land.					
SW*: Smithdale----------	Severe: slope.	Severe: seepage, slope.	Severe: slope.	Severe: slope.	Poor: slope.
Lexington----------	Severe: slope.	Severe: slope, seepage.	Severe: seepage.	Severe: slope, seepage.	Poor: slope.
Memphis----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Ur*. Urban land					

* See description of the map unit for the composition and behavior characteristics of the map unit

TABLE 11.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and "poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Ad--- Adler	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Good.
BD*: Bonn---	Poor: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness, excess sodium.
Deerford---	Fair: low strength, shrink-swell.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: thin layer.
BrB2, BrC2--- Byram	Poor: shrink-swell, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
BuC*: Byram---	Poor: shrink-swell, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
Urban land.				
Ca--- Calhoun	Poor: wetness.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness.
Co--- Calloway	Fair: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Good.
CuA*: Calloway---	Fair: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Good.
Urban land.				
CY*: Cascilla---	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Good.
Chenneby---	Fair: wetness, low strength.	Poor: excess fines.	Poor: excess fines.	Good.
GrA, GrB--- Grenada	Fair: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
LoB2, LoC2, LoC3, LoD2, LoD3--- Loring	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
LuC*, LuD*: Loring---	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
Urban land.				
LW*: Loring---	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.

See footnote at end of table.

TABLE 11.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
LW*: Kisatchie	Poor: low strength, shrink-swell, thin layer.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: thin layer.
Mc McRaven	Fair: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Good.
MeA, MeB2, MeC2 Memphis	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
MeD2, MeD3 Memphis	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey, slope.
Mg*: Memphis	Poor: slope.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: slope.
Udorthents.				
MN*: Memphis	Poor: slope.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: slope.
Natchez	Fair: slope, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: slope.
Riedtown	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Good.
Oa Oaklimeter	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Good.
OK*: Oaklimeter	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Good.
Ariel	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Good.
Pa*. Pits				
PoB2, PoC2, PoC3, PoD2 Providence	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
PrE*:	Fair:	Unsuited:	Unsuited:	Fair:

TABLE 11.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
SeB2, SeC2---------- Siwell	Poor: shrink-swell, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
SuC*: Siwell----------	Poor: shrink-swell, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
Urban land.				
SuD*: Siwell----------	Poor: shrink-swell, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey, slope.
Urban land.				
SW*: Smithdale----------	Poor: slope.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: slope.
Lexington----------	Fair: slope, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: slope.
Memphis----------	Poor: slope.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: slope.
Ur*. Urban land				

* See description of the map unit for the composition and behavior characteristics of the map unit.

TABLE 12.--WATER MANAGEMENT

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

TABLE 12.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
LuC*, LuD*: Loring	Moderate: seepage.	Moderate: piping, low strength.	Severe: no water.	Not needed	Erodes easily, slope.	Rooting depth, erodes easily, slope.
Urban land.						
LW*: Loring	Moderate: seepage.	Moderate: piping, low strength.	Severe: no water.	Not needed	Erodes easily, slope.	Rooting depth, erodes easily, slope.
Kisatchie	Severe: depth to rock.	Moderate: low strength, shrink-swell, compressible.	Severe: no water.	Not needed	Slope, erodes easily, depth to rock.	Slope.
Mc	Moderate:	Moderate:	Severe:	Floods	Wetness	Wetness

TABLE 12.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
PrE*, PS*: Providence	Slight	Moderate: piping, unstable fill.	Severe: no water.	Cutbanks cave, percs slowly, slope.	Erodes easily, percs slowly, piping.	Erodes easily, percs slowly, slope.
Smithdale	Severe: seepage.	Moderate: piping, unstable fill.	Severe: no water.	Not needed, slope.	Slope, erodes easily.	Slope, erodes easily.
Re Riedtown	Moderate: seepage.	Moderate: piping.	Severe: deep to water.	Floods, wetness.	Floods, wetness.	Floods, wetness.
SeB2, SeC2 Siwell	Slight	Moderate: hard to pack, wetness.	Severe: no water.	Percs slowly, slope.	Wetness, slope, erodes easily.	Percs slowly, slope, erodes easily.
SuC*, SuD*: Siwell	Slight	Moderate: hard to pack, wetness.	Severe: no water.	Percs slowly, slope.	Wetness, slope, erodes easily.	Percs slowly, slope, erodes easily.
Urban land.						
SW*: Smithdale	Severe: seepage.	Moderate: piping, unstable fill.	Severe: no water.	Not needed, slope.	Slope, erodes easily.	Slope, erodes easily.
Lexington	Severe: seepage.	Slight	Severe: no water.	Not needed	Slope	Slope.
Memphis	Moderate: seepage.	Moderate: piping, compressible, erodes easily.	Severe: deep to water.	Not needed	Erodes easily, slope, piping.	Erodes easily, slope.
Ur*. Urban land						

* See description of the map unit for the composition and behavior characteristics of the map unit.

[redacted]

TABLE 13.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
LuC*: Urban land.				
LuD*: Loring	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Urban land.				
LW*: Loring	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
Kisatchie	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
Mc McRaven	Severe: floods, wetness.	Moderate: floods, wetness.	Severe: floods, wetness.	Moderate: floods, wetness.
MeA Memphis	Slight	Slight	Slight	Slight.
MeB2 Memphis	Slight	Slight	Moderate: slope.	Slight.
MeC2 Memphis	Slight	Slight	Severe: slope.	Slight.
MeD2, MeD3 Memphis	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Mg*: Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Udorthents.				
MN*: Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Natchez	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
Riedtown	Severe: floods, wetness.	Moderate: floods, wetness.	Severe: floods.	Slight.
Oa Oaklimeter	Severe: floods, wetness.	Moderate: floods, wetness.	Severe: floods.	Slight.
OK*: Oaklimeter	Severe: floods, wetness.	Moderate: floods, wetness.	Severe: floods.	Slight.
Ariel	Severe: floods.	Moderate: floods.	Severe: floods.	Slight.
Pa*. Pits				
PoB2 Providence	Slight	Slight	Moderate: slope.	Slight.

See footnote at end of table.

TABLE 13.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
PoC2, PoC3---------- Providence	Slight----------	Slight----------	Severe: slope.	Slight.
PoD2---------- Providence	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
PrE*: Providence----------	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Smithdale----------	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
PS*: Providence----------	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Smithdale----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Re---------- Riedtown	Severe: floods, wetness.	Moderate: floods, wetness.	Severe: floods.	Slight.
SeB2----------	Severe:	Slight----------	Severe:	Slight

TABLE 14.--WILDLIFE HABITAT POTENTIALS

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
Ad--Adler	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor	---
BD*:												
Bonn	Poor	Poor	Poor	Poor	Poor	Fair	Poor	Good	Poor	Poor	Fair	---
Deerford	Fair	Good	Good	Good	Good	Fair	Fair	Fair	Good	Good	Fair	---
BrB2--Byram	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.	---
BrC2--Byram	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.	---
BuC*:												
Byram	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.	---
Urban land.												
Ca--Calhoun	Poor	Fair	Fair	Good	Fair	Good	Good	Good	Fair	Fair	Good	---
Co--Calloway	Fair	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair	---
CuA*:												
Calloway	Fair	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair	---
Urban land.												
CY*:												
Cascilla	Poor	Fair	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.	---
Chenneby	Poor	Fair	Fair	Good	Good	Good	Fair	Fair	Fair	Good	Fair	---
GrA, GrB--Grenada	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.	---
LoB2--Loring	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.	---
LoC2, LoC3--Loring	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.	---
LoD2, LoD3--Loring	Poor	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.	---
LuC*, LuD*:												
Loring	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.	---
Urban land.												
LW*:												
Loring	Poor	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.	---
Kisatchie	Poor	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	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	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
Mc---------- McRaven	Fair	Good	Good	Good	Fair	Good	Fair	Good	Good	Good	Fair	---
MeA, MeB2---------- Memphis	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.	---
MeC2, MeD2, MeD3--- Memphis	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.	---
Mg*: Memphis----------	Very poor.	Poor	Good	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Udorthents.												
MN*: Memphis----------	Very poor.	Poor	Good	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.	---
Natchez----------	Poor	Fair	Good	Good	Fair	Good	Very poor.	Very poor.	Fair	Good	Very poor.	---
Riedtown----------	Poor	Fair	Good	Good	Fair	Good	Poor	Poor	Fair	Good	Poor	---
Oa---------- Oaklimeter	Good	Good	Good	Good	Poor	Good	Poor	Poor	Good	Good	Poor	---
OK*: Oaklimeter---------	Poor	Fair	Good	Good	Poor	Good	Poor	Poor	Fair	Good	Poor	---
Ariel----------	Poor	Fair	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.	---
Pa*. Pits												
PoB2---------- Providence	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.	---
PoC2, PoC3, PoD2--- Providence	Fair	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.	---
PrE*: Providence---------	Fair	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.	---
Smithdale----------	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.	---
PS*: Providence---------	Fair	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.	---
Smithdale----------	Very poor.	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.	---
Re---------- Riedtown	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor	---
SeB2---------- Siwell	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor	---
SeC2----------	Fair	Good	Good	Good	Good	Good	Poor	Very	Good	Good	Very	

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	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
SuC*: Siwell	Fair	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.	---
Urban land.												
SuD*:												

TABLE 15.--ENGINEERING PROPERTIES AND CLASSIFICATIONS

[The symbol < means less than; > means more than. Absence of an entry indicates that the data were not estimated]

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	
Ad---------- Adler	0-6	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	<28	NP-7
	6-72	Silt loam, silt, very fine sandy loam.	ML, CL, CL-ML	A-4	0	100	100	95-100	60-95	<30	NP-10
BD*:											
Bonn----------	0-6	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	75-100	20-30	2-7
	6-42	Silt loam, silty clay loam.	CL	A-6	0	95-100	90-100	85-100	65-100	30-40	12-22
	42-80	Silt loam, silty clay loam.	CL	A-6, A-4	0	100	95-100	90-100	75-100	28-38	8-18
Deerford----------	0-17	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	<28	NP-7
	17-84	Silty clay loam, silt loam.	CL	A-6, A-7-6	0	100	100	100	95-100	32-49	11-21
BrB2, BrC2---------- Byram	0-4	Silt loam--------	ML, CL-ML, CL	A-4	0	100	100	95-100	90-100	<30	NP-10
	4-23	Silt loam, silty clay loam.	CL, CH	A-6, A-7	0	100	100	90-100	85-95	30-54	11-30
	23-51	Silt loam, silty clay loam.	CL, CH	A-6, A-7	0	100	100	90-100	85-95	30-54	11-34
	51-67	Silt loam, silty clay loam.	CL, CH	A-6, A-7	0	100	100	90-100	85-95	30-54	11-30
	67-90	Silty clay, clay	CH	A-7	0	100	100	90-100	80-95	55-135	40-100
BuC*:											
Byram----------	0-4	Silt loam--------	ML, CL-ML, CL	A-4	0	100	100	95-100	90-100	<30	NP-10
	4-23	Silt loam, silty clay loam.	CL, CH	A-6, A-7	0	100	100	90-100	85-95	30-54	11-30
	23-51	Silt loam, silty clay loam.	CL, CH	A-6, A-7	0	100	100	90-100	85-95	30-54	11-34
	51-67	Silt loam, silty clay loam.	CL, CH	A-6, A-7	0	100	100	90-100	85-95	30-54	11-30
	67-90	Silty clay, clay	CH	A-7	0	100	100	90-100	80-95	55-135	40-100
Urban land.											
Ca---------- Calhoun	0-17	Silt loam--------	CL-ML, ML, CL	A-4	0	100	100	100	95-100	<31	NP-10
	17-54	Silty clay loam, silt loam	CL	A-6	0	100	100	95-100	95-100	30-45	11-24

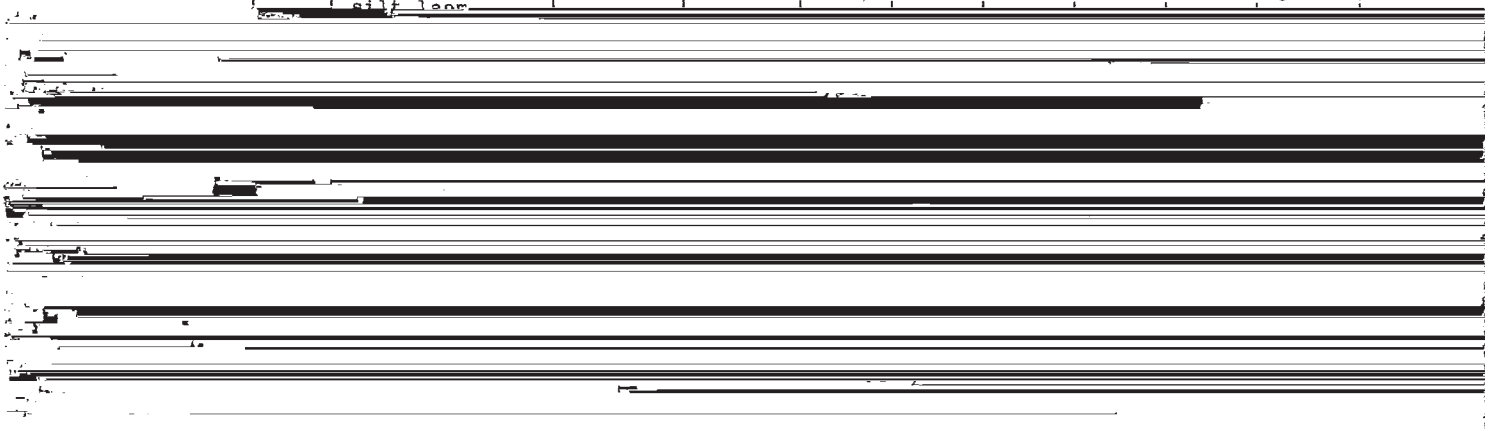


TABLE 15.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

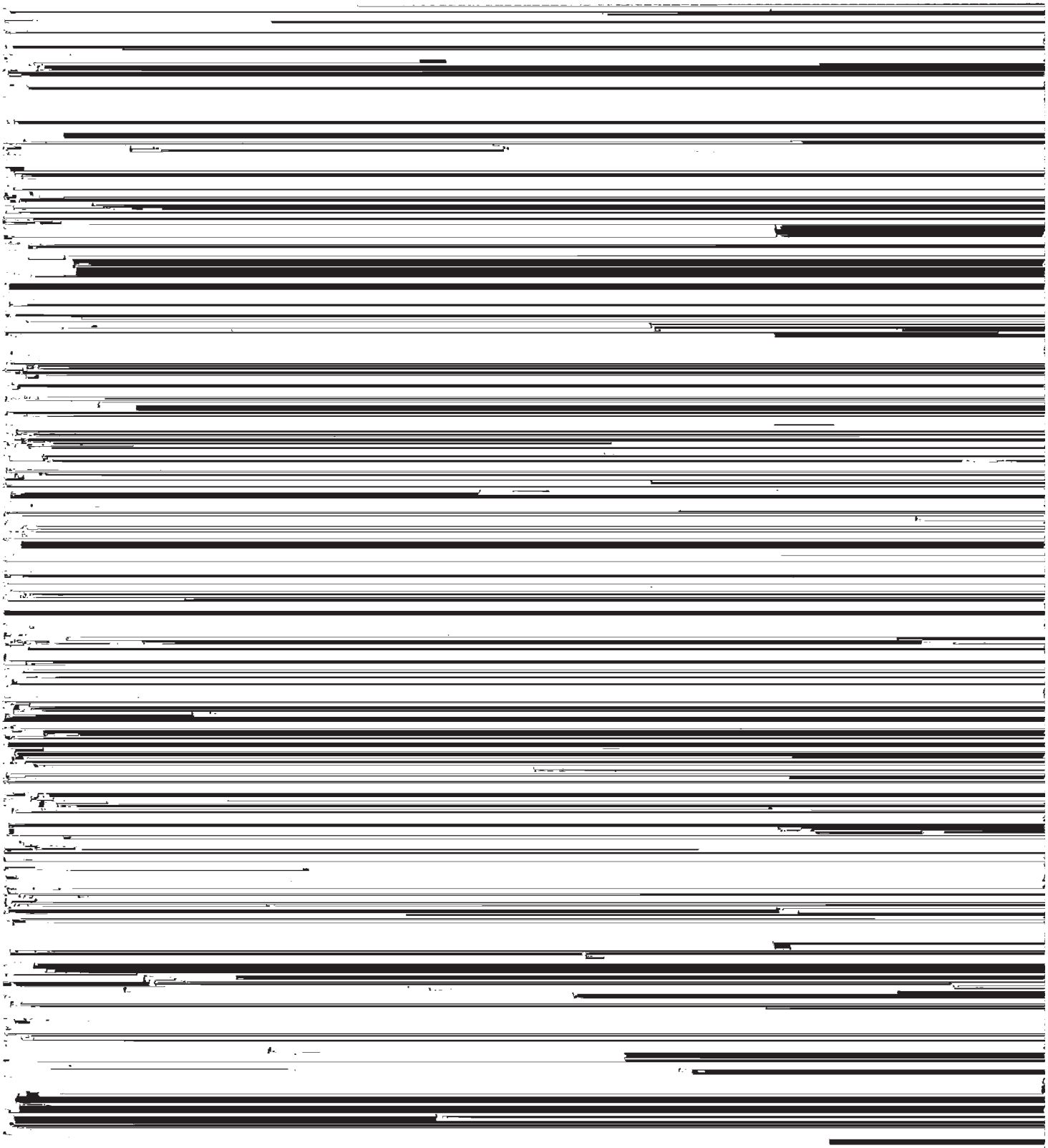


TABLE 15.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

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	
LW*:											
Loring	0-5	Silt loam	ML, CL-ML, CL	A-4, A-6	0	100	100	95-100	90-100	20-35	4-15
	5-27	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	95-100	90-100	35-45	15-25
	27-56	Silt loam	CL, ML	A-4, A-6, A-7	0	100	100	95-100	90-100	30-45	8-18
	56-80	Silt loam	CL, CL-ML, ML	A-4, A-6	0	100	100	95-100	90-100	25-40	6-15
Kisatchie	0-5	Fine sandy loam	SM, ML, CL-ML, SM-SC	A-4	0	100	100	85-100	40-65	<25	NP-4
	5-32	Silty clay, silty clay loam, clay loam.	CH, CL	A-7-6	0	100	100	90-100	85-95	45-65	22-36
	32-50	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Mc	0-5	Silt loam	ML, CL-ML	A-4	0	100	100	90-100	70-90	<30	NP-7
McRaven	5-21	Silt loam	ML, CL-ML	A-4	0	100	100	90-100	70-90	<30	NP-7
	21-80	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4	0	100	100	90-100	70-90	<30	NP-10
MeA, MeB2, MeC2, MeD2, MeD3	0-6	Silt loam	ML, CL-ML, CL	A-4	0	100	100	100	90-100	<30	NP-10
Memphis	6-22	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	100	90-100	35-48	15-25
	22-80	Silt loam	ML, CL	A-4, A-6	0	100	100	100	90-100	30-40	6-15
Mg*:											
Memphis	0-6	Silt loam	ML, CL-ML, CL	A-4	0	100	100	100	90-100	<30	NP-10
	6-22	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	100	90-100	35-48	15-25
	22-80	Silt loam	ML, CL	A-4, A-6	0	100	100	100	90-100	30-40	6-15
Udorthents.											
MN*:											
Memphis	0-6	Silt loam	ML, CL-ML, CL	A-4	0	100	100	100	90-100	<30	NP-10
	6-22	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	100	90-100	35-48	15-25
	22-80	Silt loam	ML, CL	A-4, A-6	0	100	100	100	90-100	30-40	6-15
Natchez	0-29	Silt loam	ML, CL-ML, CL	A-4	0	100	100	100	85-100	<35	NP-10
	29-72	Silt loam, silt	ML, CL-ML	A-4	0	100	100	100	85-100	<30	NP-7
Riedtown	0-7	Silt loam	ML, CL-ML	A-4	0	100	100	90-100	70-90	---	NP
	7-27	Silt loam	ML, CL, CL-ML	A-4	0	100	100	90-100	70-90	<30	NP-10
	27-80	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4	0	100	100	90-100	70-90	<30	NP-10

See footnote at end of table.

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

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Oa---------- Oaklimeter	0-6	Silt loam--------	ML, CL, CL-ML	A-4	0	100	100	90-100	70-90	<30	NP-8
	6-28	Very fine sandy loam, silt loam, loam.	ML, CL, CL-ML	A-4	0	100	100	85-95	60-85	<30	NP-8
	28-64	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4	0	100	100	90-100	90-100	<30	NP-10
OK*: Oaklimeter---------	0-6	Silt loam--------	ML, CL, CL-ML	A-4	0	100	100	90-100	70-90	<30	NP-8
	6-28	Very fine sandy loam, silt loam, loam.	ML, CL, CL-ML	A-4	0	100	100	85-95	60-85	<30	NP-8
	28-72	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4	0	100	100	90-100	90-100	<30	NP-10
Ariel----------	0-36	Silt loam--------	ML, CL-ML	A-4	0	100	100	90-100	85-95	<30	NP-7
	36-72	Silt loam, loam	ML, CL, CL-ML	A-4	0	100	100	85-100	70-90	<30	NP-10
Pa*. Pits											
PoB2, PoC2, PoC3,											

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	
SeB2, SeC2---------- Siwell	0-4	Silt loam--------	ML, CL, CL-ML	A-4	0	100	100	95-100	90-100	<30	NP-10
	4-21	Silt loam, silty clay loam.	CL, CH	A-6, A-7	0	100	100	95-100	90-100	25-55	15-32
	21-30	Silty clay loam.	CL	A-6, A-7	0	100	100	95-100	85-95	35-55	15-35

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

[The symbol < means less than. The erosion tolerance factor (T) is for the entire profile. Absence of an entry indicates that the data were not available or were not estimated.]

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Risk of corrosion		Erosion factors		Wind erodibility group
						Uncoated steel	Concrete	K	T	
	In	In/hr	In/in	pH						
Ad---------- Adler	0-6 6-72	0.6-2.0 ---	0.20-0.23 ---	5.6-7.8 ---	Low------- ---	Moderate ---	Low------- ---	0.43 ---	---	---
BD*: Bonn----------	0-6 6-42 42-80	0.2-0.6 <0.06 <0.2	0.15-0.23 0.08-0.14 0.08-0.14	4.5-7.3 5.6-9.0 6.6-9.0	Low------- Low------- Low-------	High------ High------ High------	Low------- Low------- Low-------	0.49 0.49 0.49	3	---

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Risk of corrosion		Erosion factors		Wind erodibility group
						Uncoated steel	Concrete	K	T	
	In	In/hr	In/in	pH						
Pa*.										
Pits										
PoB2, PoC2, PoC3,										
PoD2	0-4	0.6-2.0	0.20-0.22	4.5-6.0	Low	Moderate	Moderate	0.43	3	---
Providence	4-24	0.6-2.0	0.20-0.22	4.5-6.0	Low	Moderate	Moderate	0.43		
	24-37	0.2-0.6	0.08-0.10	4.5-6.0	Moderate	Moderate	Moderate	0.32		
	37-57	0.2-0.6	0.08-0.10	4.5-6.0	Low	Moderate	Moderate	0.32		
	57-64	0.6-2.0	0.10-0.15	4.5-6.0	Low	Moderate	Moderate	0.32		
PrE*, PS*:										
Providence	0-4	0.6-2.0	0.20-0.22	4.5-6.0	Low	Moderate	Moderate	0.43	3	---
	4-24	0.6-2.0	0.20-0.22	4.5-6.0	Low	Moderate	Moderate	0.43		
	24-37	0.2-0.6	0.08-0.10	4.5-6.0	Moderate	Moderate	Moderate	0.32		
	37-57	0.2-0.6	0.08-0.10	4.5-6.0	Low	Moderate	Moderate	0.32		
	57-64	0.6-2.0	0.10-0.15	4.5-6.0	Low	Moderate	Moderate	0.32		
Smithdale	0-11	2.0-6.0	0.14-0.16	4.5-5.5	Low	Low	Moderate	0.28	5	---
	11-41	0.6-2.0	0.15-0.17	4.5-5.5	Low	Low	Moderate	0.24		
	41-85	2.0-6.0	0.14-0.16	4.5-5.5	Low	Low	Moderate	0.28		
Re	0-7	0.6-2.0	0.20-0.22	5.1-7.3	Low	Moderate	Low	0.43	5	---
Riedtown	7-27	0.6-2.0	0.20-0.22	5.6-8.4	Low	Moderate	Low	---		
	27-80	0.6-2.0	0.20-0.22	5.6-8.4	Low	Moderate	Low	---		
SeB2, SeC2	0-4	0.6-2.0	0.20-0.22	4.5-6.0	Low	High	Moderate	0.43	4	---
Siwell	4-21	0.6-2.0	0.20-0.22	4.5-6.0	Moderate	High	Moderate	0.43		
	21-30	0.2-0.6	0.19-0.22	4.5-6.0	Moderate	High	Moderate	0.24		
	30-39	0.06-0.2	0.16-0.18	6.1-8.4	High	High	Moderate	0.24		
	39-72	<0.06	0.10-0.15	6.6-8.4	Very high	High	Moderate	0.24		
SuC*, SuD*:										
Siwell	0-4	0.6-2.0	0.20-0.22	4.5-6.0	Low	High	Moderate	0.43	4	---
	4-21	0.6-2.0	0.20-0.22	4.5-6.0	Moderate	High	Moderate	0.43		
	21-30	0.2-0.6	0.19-0.22	4.5-6.0	Moderate	High	Moderate	0.24		
	30-39	0.06-0.2	0.16-0.18	6.1-8.4	High	High	Moderate	0.24		
	39-72	<0.06	0.10-0.15	6.6-8.4	Very high	High	Moderate	0.24		
Urban land.										
SW*:										
Smithdale	0-11	2.0-6.0	0.14-0.16	4.5-5.5	Low	Low	Moderate	0.28	5	---
	11-41	0.6-2.0	0.15-0.17	4.5-5.5	Low	Low	Moderate	0.24		
	41-85	2.0-6.0	0.14-0.16	4.5-5.5	Low	Low	Moderate	0.28		
Lexington	0-6	0.6-2.0	0.17-0.22	4.5-6.0	Low	Low	Moderate	0.43	3	---
	6-35	0.6-2.0	0.16-0.21	4.5-6.0	Low	Moderate	Moderate	0.43		
	[illegible]									

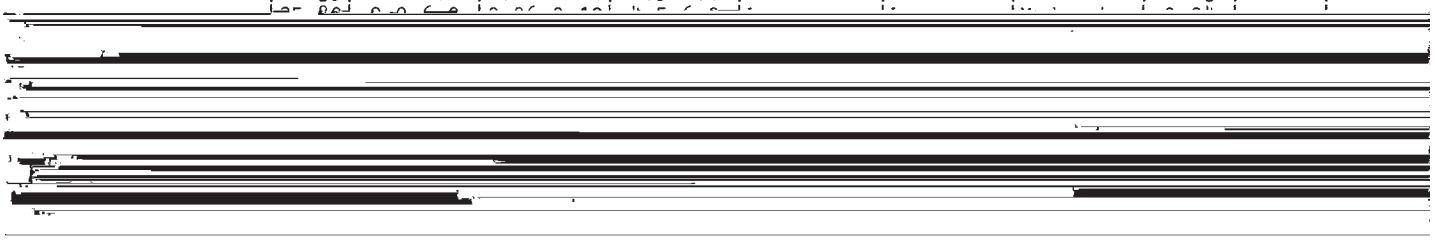


TABLE 17.--SOIL AND WATER FEATURES

[The definitions of "flooding" and "water table" in the Glossary explain terms such as "rare," "brief," "apparent," and "perched." The symbol > means more than. Absence of an entry indicates that the

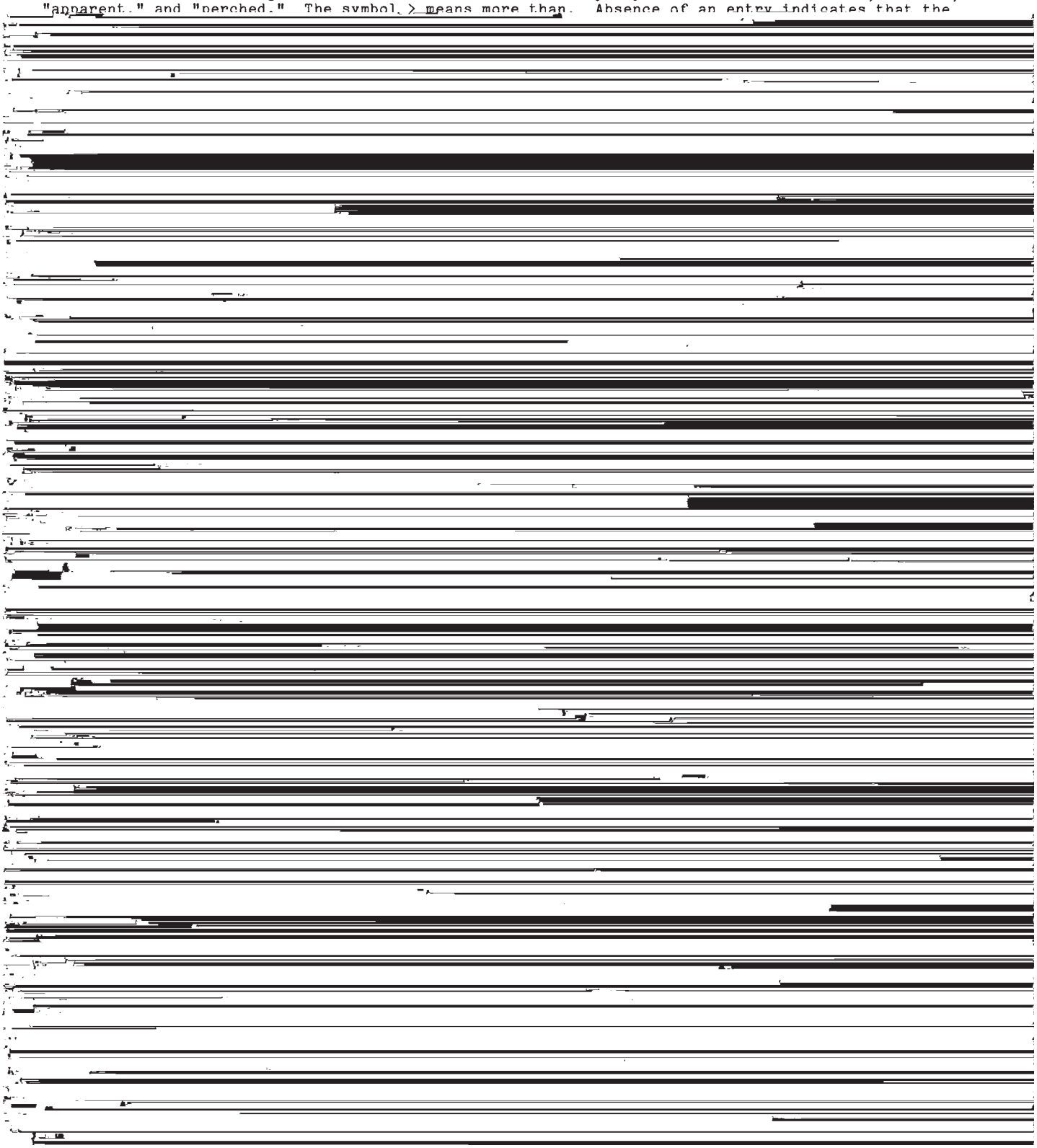


TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness
					Ft			In	
MN*:									
Memphis	B	None	---	---	>6.0	---	---	>60	---
Natchez	B	None	---	---	>6.0	---	---	>60	---

OILS	table bases eq/100 g)			Base saturation	Reaction (1:1 soil:water)
	Na	K		Pct	pH
5	0.1	0.1		7.0	5.0
6	0.8	0.1		21.0	5.3
4	1.1	0.1		25.4	5.2
4	4.1	0.1		84.0	6.2
8	6.5	0.1		95.5	6.8
3	3.0	0.1		95.5	7.8
1	1.5	0.1		95.2	7.8
9	0.1	0.3		58.2	5.6
6	0.2	0.2		44.1	5.3
9	0.3	0.1		38.9	5.4
9	0.6	0.2		60.6	5.1
3	0.8	0.2		68.0	5.2
5	1.4	0.3		91.4	5.9
1	3.0	0.6		98.0	7.3
1	0.1	0.3		26.1	4.8
7	0.2	0.1		29.3	5.0
6	0.2	0.1		36.8	5.4
0	0.8	0.1		46.5	5.6
6	7.2	0.1		84.9	5.8
7	9.9	0.2		99.3	6.6
0	7.4	0.1		100.0	7.7
7	5.3	0.1		96.9	7.8
4	---	0.1		47.0	5.4
6	---	---		57.0	5.4
0	---	---		60.0	5.7
0	0.1	---		64.0	5.7
5	0.1	---		77.0	6.0
8	0.1	---		93.0	7.1
7	---	0.1		74.0	6.2
9	---	---		69.0	5.8
7	---	---		75.0	6.2
7	---	---		75.0	6.2
5	---	---		92.0	6.5
2	---	---		88.0	6.4
5	0.1	0.6		62.7	5.3
1	0.1	0.5		48.2	5.1
3	0.1	0.3		43.0	5.2
9	0.6	0.3		60.8	5.0
5	0.8	0.2		68.6	4.9
8	1.4	0.3		85.7	5.0
4	2.4	0.5		94.7	7.0

TABLE 19.--ENGINEERING TEST DATA

[Tests performed by Mississippi State Highway Department in cooperation with the Federal Highway Administration, Department of Transportation, in accordance with standard procedures of the American Association of State Highway and Transportation Officials]

Soil name and location	Parent material	Mississippi State Highway Laboratory Number	Depth from surface	Moisture density		Mechanical analysis							Liquid limit	Plasticity index	Classification	
						Percentage passing sieve--			Percentage smaller than--							
				Maximum dry density	Optimum moisture	No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.074 mm)	0.05 mm	0.02 mm	0.005 mm	0.002 mm			AASHTO	Unified
			In	Pcf	Pct								Pct			
Byram silt loam:	Loess over	5	4-14	99.2	19.6	100	99	98	92	54	31	26	47	29	A-7	CL-ML
1 mile east of	calcareous	6	23-31	100.8	18.0	100	99	99	92	62	31	26	51	23	A-7	CH
Clinton, 1/4 mile	clay.	7	31-51	104.7	18.6	100	100	99	92	66	35	30	53	21	A-7	CH
north of U.S. Highway		8	51-67	105.2	17.4	100	100	99	92	63	30	24	44	21	A-7	CL
80, 500 feet east of		9	67-90	84.8	27.2	100	99	98	92	85	74	69	31	36	A-7	CH
gravel road,																
NW1/4NW1/4 sec. 34,																
T. 6 N., R. 1 W.																
Deerford silt loam:	Silty	11	4-12	100.2	17.4	100	99	96	88	52	17	12	27	25	A-4	ML
1 mile northeast of	alluvium.	12	27-40	108.0	17.0	100	99	96	88	58	29	24	35	20	A-6	CL
Byram in Pearl River		13	40-51	105.0	19.6	100	99	98	90	25	30	25	43	20	A-7	CL
flood plain, 1,300		14	51-72	103.2	17.8	100	100	99	92	70	32	26	50	20	A-7	CL
feet east of road,		15	72-84	103.4	19.2	100	100	99	93	70	29	24	43	22	A-7	CL
SE1/4NE1/4 sec. 18,																
T. 4 N., R. 1 E.																
Siwell silt loam:	Thin loess	1	8-13	97.8	21.3	100	99	97	92	63	32	27	55	24	A-7	CH
1,100 feet south of	over	2	21-30	101.7	21.0	100	100	99	92	71	27	33	54	22	A-7	CH
intersection of U.S.	calcareous	3	30-39	99.6	20.7	100	100	99	93	70	42	37	64	20	A-7	CH
Highway 80 and	clay.	4	39-72	89.0	28.0	100	100	99	95	86	75	70	113	33	A-7	CH
Robinson Road,																
NW1/4SW1/4 sec. 1,																
T. 5 N., R. 1 W.																

TABLE 20.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Adler	Coarse-silty, mixed, nonacid, thermic Aquic Udifluvents
Ariel	Coarse-silty, mixed, thermic Fluventic Dystrochrepts
Bonn	Fine-silty, mixed, thermic Glossic Natraqualfs
Byram	Fine-silty, mixed, thermic Typic Fragiudalfs
Calhoun	Fine-silty, mixed, thermic Typic Glossaqualfs
Calloway	Fine-silty, mixed, thermic Glossaquic Fragiudalfs
Cascilla	Fine-silty, mixed, thermic Fluventic Dystrochrepts
Chenneby	Fine-silty, mixed, thermic Fluvaquentic Dystrochrepts
Deerford	Fine-silty, mixed, thermic Albic Glossic Natraqualfs
Grenada	Fine-silty, mixed, thermic Glossic Fragiudalfs
Kisatchie	Fine, montmorillonitic, thermic Typic Hapludalfs
Lexington	Fine-silty, mixed, thermic Typic Paleudalfs
Loring	Fine-silty, mixed, thermic Typic Fragiudalfs
McRaven	Coarse-silty, mixed, nonacid, thermic Aeric Fluvaquents
Memphis	Fine-silty, mixed, thermic Typic Hapludalfs
Natchez	Coarse-silty, mixed, thermic Typic Eutrochrepts
Oaklimeter	Coarse-silty, mixed, thermic Fluvaquentic Dystrochrepts
Providence	Fine-silty, mixed, thermic Typic Fragiudalfs
Riedtown	Coarse-silty, mixed, thermic Fluvaquentic Eutrochrepts