United States
Department of
Agriculture

Soil
Conservation
Service

In cooperation with
Illinois Agricultural
Experiment Station

Soil Survey of Cass County, Illinois

How To Use This Soil Survey

General Soil Map

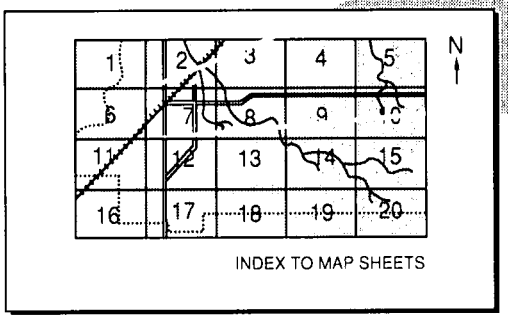
The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

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

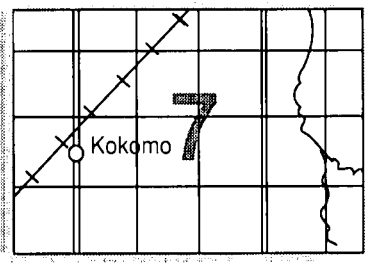
Detailed Soil Maps

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

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

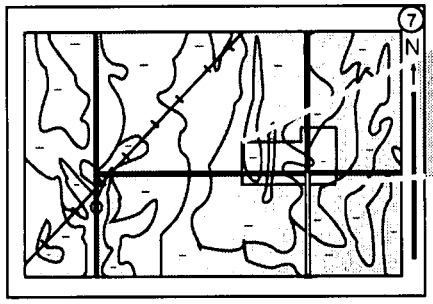


INDEX TO MAP SHEETS

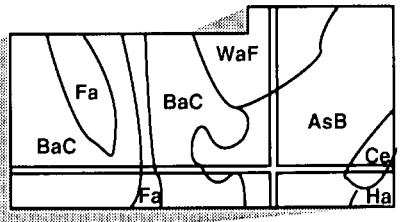


MAP SHEET

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



MAP SHEET



AREA OF INTEREST

NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

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

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1984. Soil names and descriptions were approved in February 1986. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1984. This survey was made cooperatively by the Soil Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the Cass County Soil and Water Conservation District. The cost was shared by the Cass County Board and the Illinois Department of Agriculture.

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

This survey updates a soil survey of Cass County published in 1947 *(7)*. It provides more recent information and larger maps, which show the soils in greater detail.

This soil survey is Illinois Agricultural Experiment Station Soil Report No. 129.

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

Cover: Farming is the major enterprise in Cass County. The cultivated area is Arenzville silt loam, rarely flooded, and the pastured and wooded areas are Hamburg silt loam, 35 to 60 percent slopes.

Contents

Issued September 1989

Index to Map Units

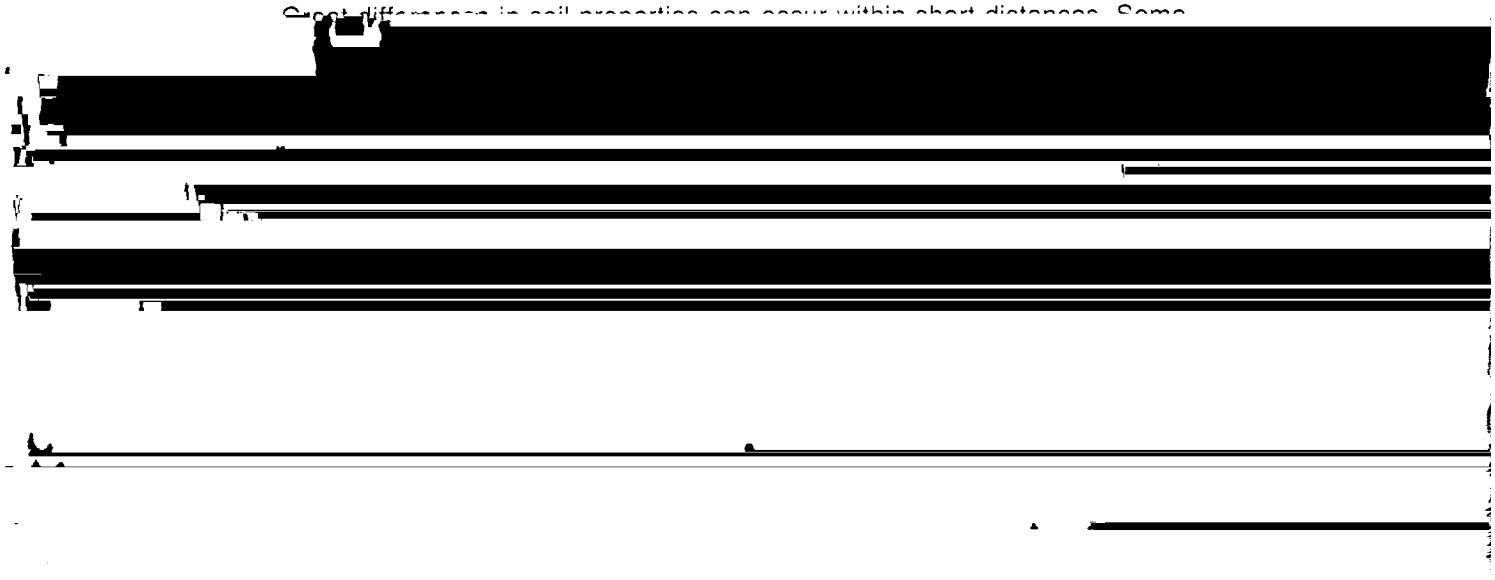
Summary of Tables

Foreword

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

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

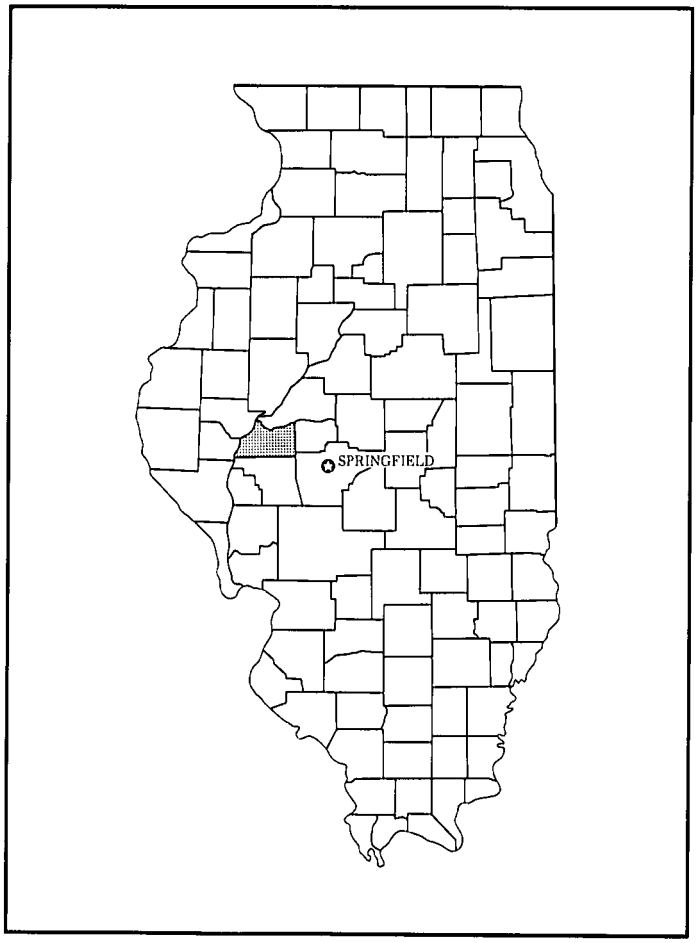
Great differences in soil properties can occur within short distances. Some



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

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

John E. Eakes



Location of Cass County in Illinois.

Soil Survey of
Cass County, Illinois

By Dale E. Calsyn, Soil Conservation Service; assisted by Kim P. Black and James K. Witt, Cass County

Fieldwork by Dale E. Calsyn, Soil Conservation Service, and Kim P. Black and James K. Witt, Cass County

United States Department of Agriculture, Soil Conservation Service,
in cooperation with
Illinois Agricultural Experiment Station

CASS COUNTY is in the west-central part of Illinois. It has an area of 243,200 acres, or about 380 square miles. It is bordered on the north by the Sangamon River and Mason County, on the east by Menard and Sangamon Counties, on the south by Morgan County, and on the west by the Illinois River. According to the 1980 census, the population of the county was 15,804. Virginia is the county seat.

General Nature of the County

The following paragraphs provide general information about the history and development; the relief, physiography, and drainage; and the climate of Cass County.

History and Development

The first settlers came to Cass County in about 1819 and located in the Indian village of Kickapoo, later named Beardstown *(6)*. Cass County was established on August 7, 1837, from part of Morgan County. In May 1845, a three mile wide strip was added to the southern [illegible]

onto barges are available at Beardstown.

Farming continues to be the major enterprise in the county. In 1982, the number of farms was 550 and the acreage of farmland was about 88 percent of the total land area *(11)*. Corn was grown on 80,858 acres and soybeans on 69,820 acres. About 9,336 acres was used for wheat and 11,446 acres for pasture. Specialty crops, such as melons and pumpkins, were also grown. In addition, about 82,155 hogs, 16,092 cattle, 1,585 hens, and 432 sheep were in the county.

Several light industries are in the county. These include a slaughter and meat processing plant and manufacturers of air conditioner components, metal tanks, and television satellite dishes.

Relief, Physiography, and Drainage

Elevation ranges from 670 feet above sea level at a point about 3 miles southwest of Chandlerville to 425 feet above sea level at a point between Meredosia Lake and the Illinois River.

The county is on the Springfield Plain of the Central Lowland Province *(12)*. The soils on the uplands formed mainly in loess, and the soils on terraces formed mainly [illegible]

and Prairie Creeks drain the southern and western parts of the county. These creeks flow into the Illinois River.

Climate

Peter Vinzani, weather observer, State Water Survey Division, Illinois Institute of Natural Resources, helped prepare this section.

Cass County is cold in the winter and hot in the summer with occasional cool spells. Precipitation, mainly snow in the winter and rain in the rest of the

Average windspeed is highest, 13.9 miles per hour, in March.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and

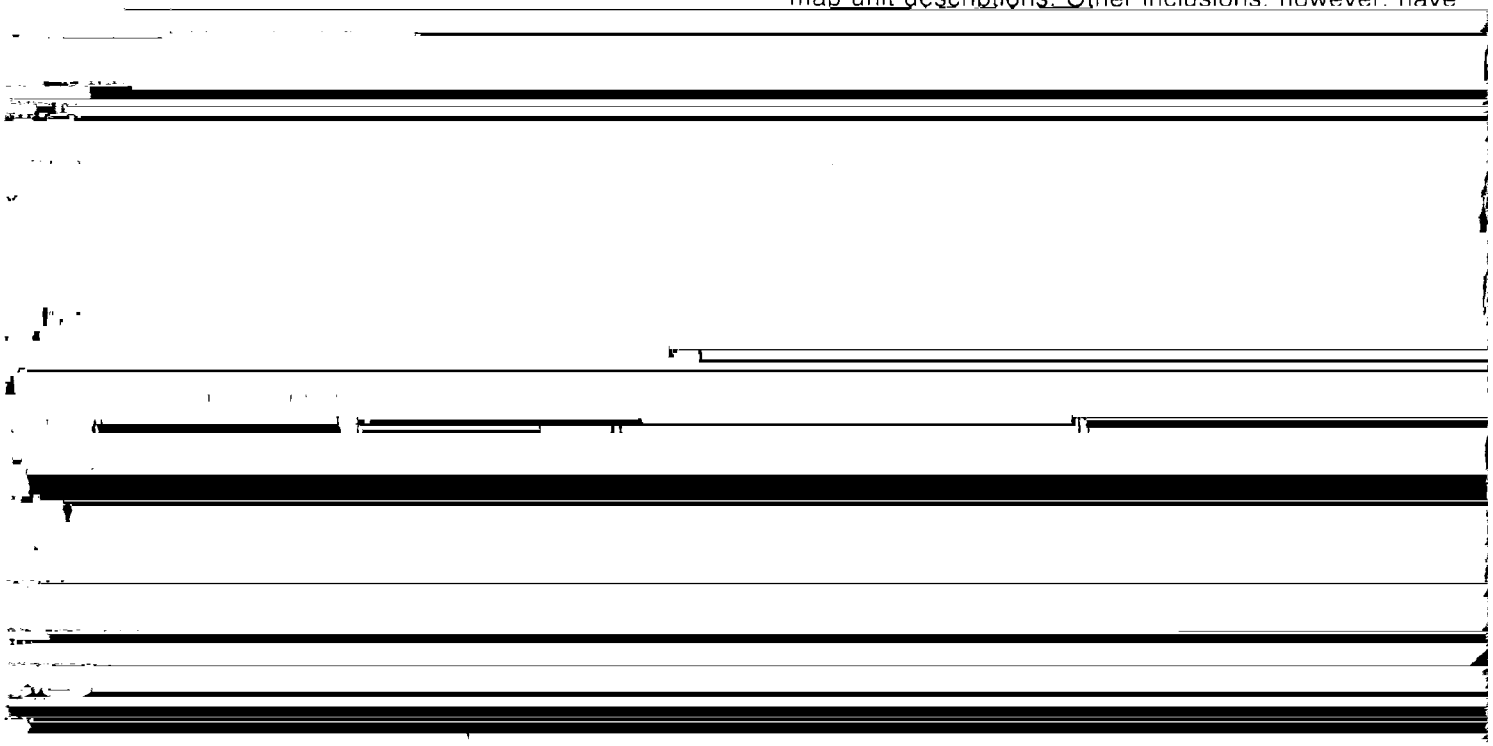
characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

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

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by several kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. These latter soils are called inclusions or included soils.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have



General Soil Map Units

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

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

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

The names of the soils identified on the general soil map of this county do not fully agree with those of the soils identified on the general soil map in the published soil surveys of the adjacent Morgan and Sangamon Counties. Differences result from variations in the extent of the major soils in the map unit. They do not necessarily affect broad land use planning because the soils having different names are similar in terms of use and behavior.

The map units in this county have been grouped for broad interpretive purposes. The 5 groups and 9 map units in Cass County are described in this section.

Soil Descriptions

Gently Sloping to Very Steep, Moderately Well Drained to Somewhat Excessively Drained Soils; on Uplands

The soils in this group formed in loess. In the less sloping areas, these soils are used primarily for cultivated crops. They are used as pastureland or woodland in the more sloping areas. The hazard of water erosion is the major concern in management.

1. Sylvan-Rozetta-Bold Association

Nearly level to steep, well drained and moderately well drained, silty soils that formed in loess

In this map unit, the landscape is mainly broad to narrow ridgetops and steep side slopes. Slopes generally range from 0 to 30 percent.

This map unit makes up about 22 percent of the county. It is about 36 percent Sylvan and similar soils, 32 percent Rozetta and similar soils, 18 percent Bold and similar soils, and 14 percent soils of minor extent (fig. 1).

The Sylvan soils are sloping to steep and are well drained. These soils are on convex side slopes. Typically, the surface layer is dark grayish brown, friable silt loam about 4 inches thick. The subsurface layer to a depth of 10 inches is dark brown, friable silt loam. The upper part is dark brown, and the lower part is dark brown and dark yellowish brown. The subsoil extends to a depth of about 27 inches. The upper part is dark yellowish brown, firm silty clay loam; the middle part is yellowish brown, firm silty clay loam; and the lower part is yellowish brown, friable silt loam. The substratum to a depth of 60 inches or more is mottled, friable, calcareous silt loam. The upper part is yellowish brown, and the lower part is light brownish gray.

The Rozetta soils are nearly level and gently sloping and are moderately well drained. These soils are on broad to narrow ridgetops. Typically, the surface layer is dark grayish brown, friable silt loam about 10 inches thick. The subsurface layer to a depth of about 15 inches is dark brown, friable silt loam. The subsoil extends to a depth of about 50 inches. The upper part is dark yellowish brown, firm silty clay loam; the middle part is yellowish brown, firm silty clay loam; and the lower part is yellowish brown, mottled, friable silt loam. The substratum to a depth of 60 inches or more is mottled brown, light brownish gray, and strong brown, friable silt loam.

The Bold soils are strongly sloping to steep, well drained, and calcareous. These soils are on convex

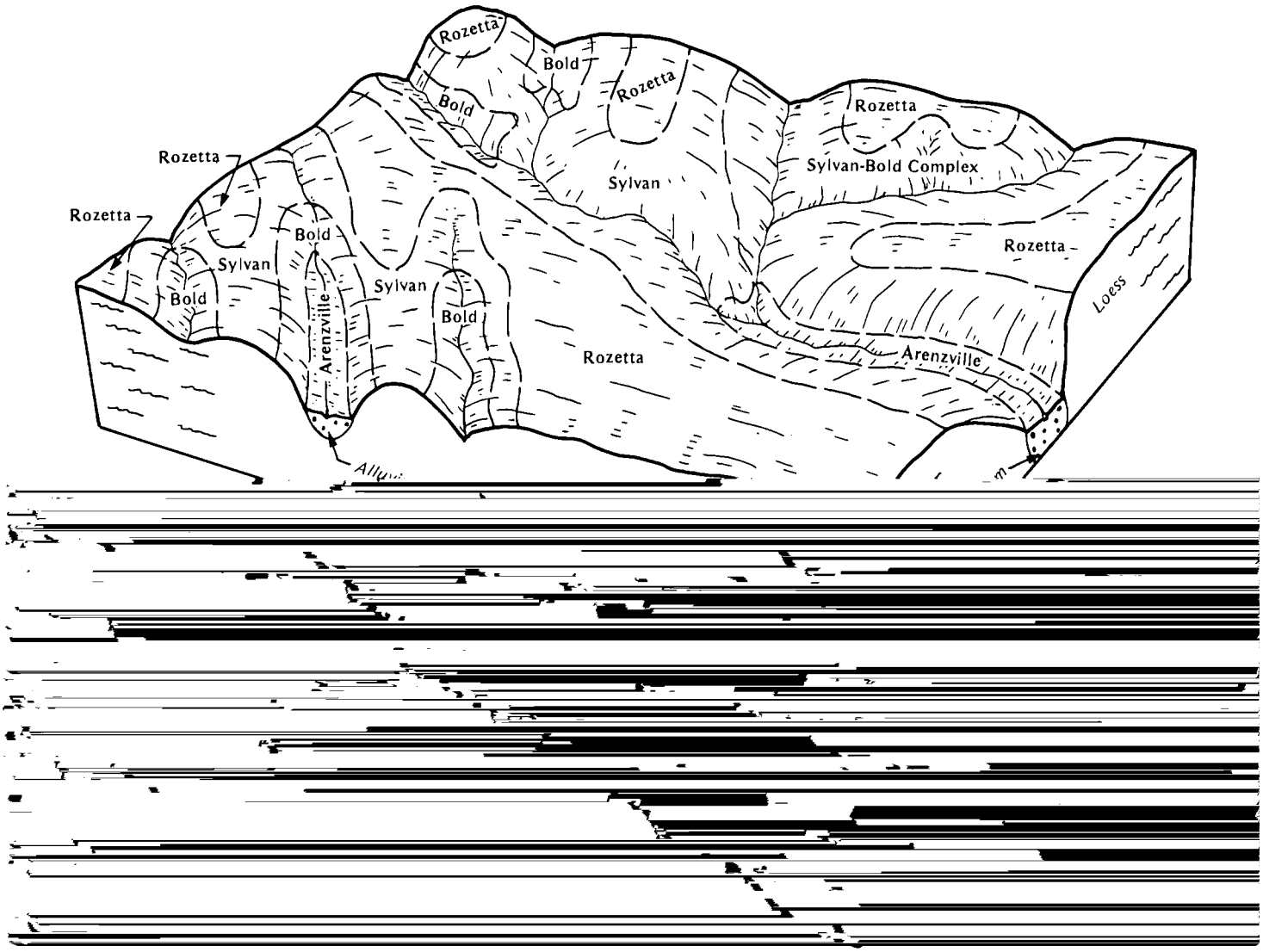


Figure 1.—Typical pattern of soils and parent material in the Sylvan-Rozetta-Bold general soil map unit.

side slopes. Typically, the surface layer is yellowish brown, friable silt loam. Water erosion has reduced the surface layer to a thickness of about 8 inches. The underlying material to a depth of 60 inches or more is light brownish gray, mottled, friable silt loam.

Of minor extent in this map unit are the Arenzville, Ipava, Radford, and Tama soils. The Arenzville and Radford soils are on flood plains below the major soils. The Arenzville soils are moderately well drained, and the Radford soils are somewhat poorly drained. Ipava and Tama soils are in less sloping areas that are farther well suited to cultivated crops and to pasture. The soils of this map unit are moderately well suited to woodland.

These soils generally are moderately suited to use as sites for dwellings and septic tank absorption fields. In some areas, they are not suited because of the steepness of slope. The main limitations are the seasonal high water table, permeability, shrink-swell potential, and steepness of slope.

2. Hamburg-Fayette-Seaton Association

Gently sloping to very steep, somewhat excessively

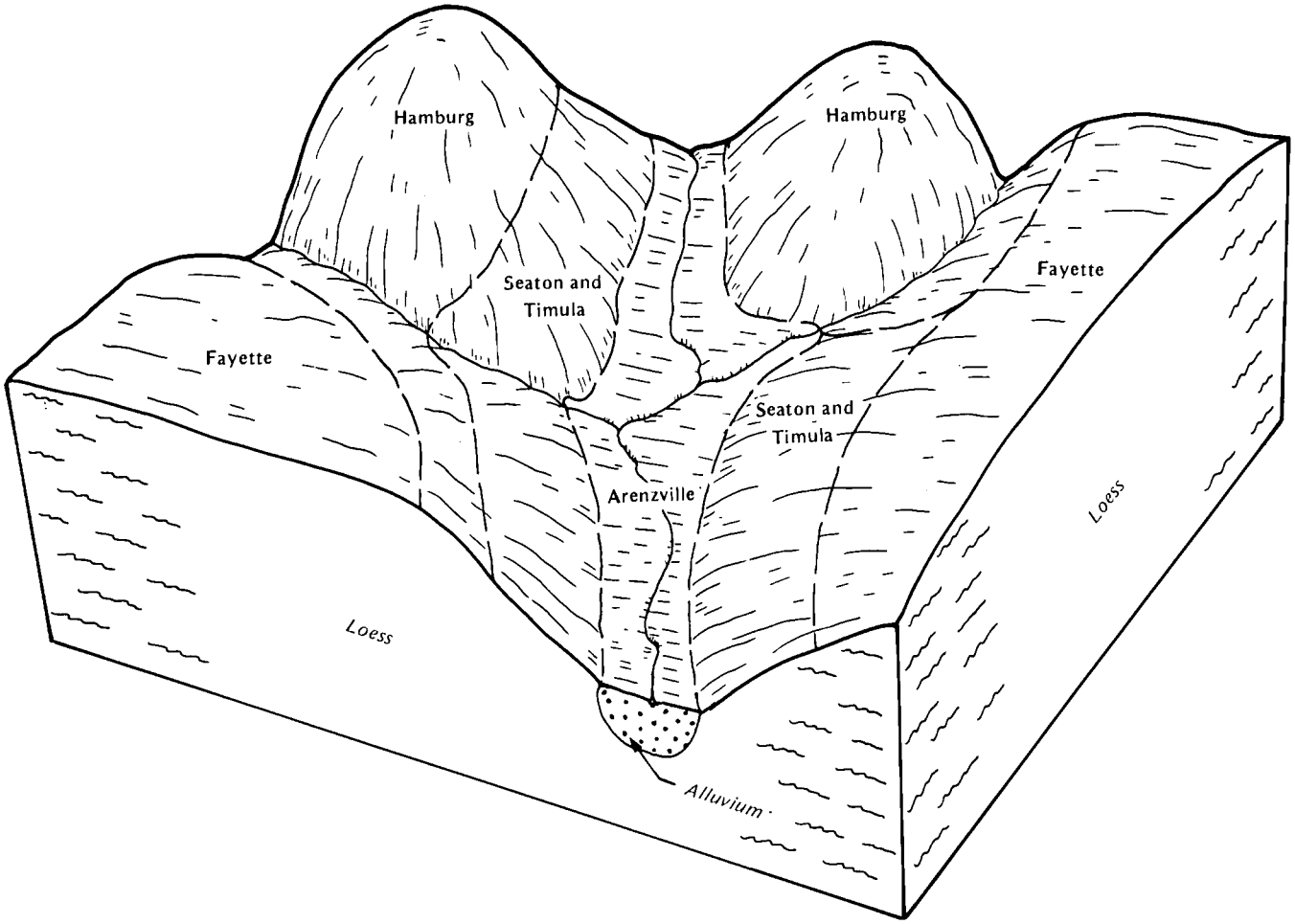


Figure 2.—Typical pattern of soils and parent material in the Hamburg-Fayette-Seaton general soil map unit.

The Hamburg soils are steep and very steep, somewhat excessively drained, and calcareous. These soils are on rounded mounds, narrow ridges, and side slopes. Typically, the surface layer is dark grayish brown, friable silt loam about 7 inches thick. The underlying material to a depth of 60 inches or more is friable. The upper part is brown silt loam, the middle part is yellowish brown silt, and the lower part is light loam; dark yellowish brown, firm silty clay loam; yellowish brown, firm silty clay loam; and yellowish brown, firm silt loam.

The Seaton soils are steep and very steep and are well drained. These soils are on convex side slopes. Typically, the surface layer is mixed very dark grayish brown and dark grayish brown, friable silt loam about 3 inches thick. The subsurface layer to a depth of about 6

Radford soils are somewhat poorly drained. Keomah soils are in less sloping areas at a higher elevation than the major soils and are somewhat poorly drained. Plainfield soils are on convex side slopes and are sandy and excessively drained. Raddle soils are on toe slopes at a lower elevation than the major soils and are well drained. Timula soils are on side slopes at a higher elevation than the Seaton soils.

The Hamburg, Fayette, and Seaton soils are used mainly as pastureland or woodland. In some areas they are used for cultivated crops.

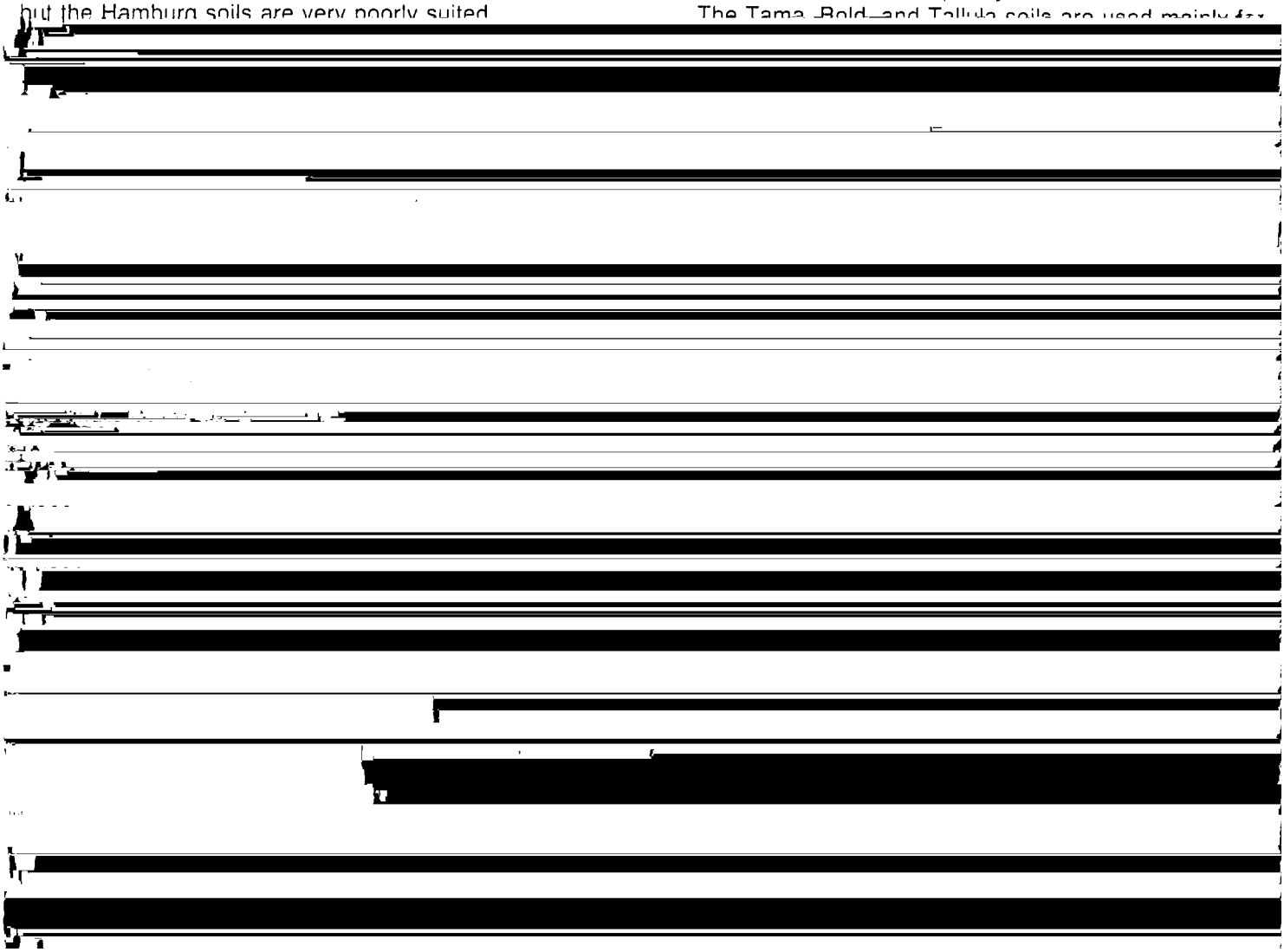
These soils generally are not suited to cultivated crops; however, the gently sloping areas of the Fayette soils are well suited. The main need in managing cropland is to control water erosion. The Hamburg and Seaton soils are moderately suited to pasture, and the Fayette soils generally are well suited. The Fayette and Seaton soils are moderately well suited to woodland, but the Hamburg soils are very poorly suited

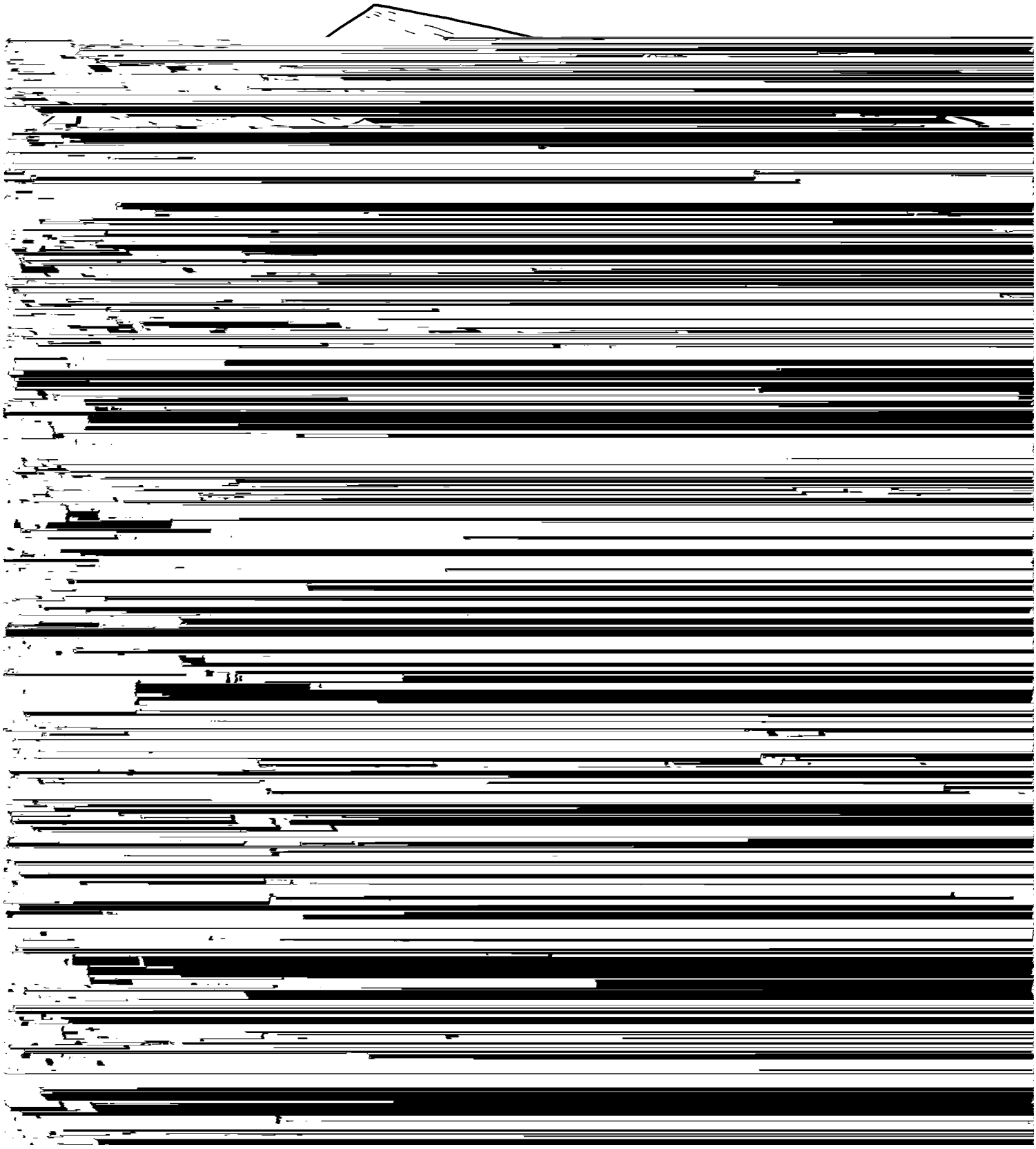
light brownish gray, mottled, friable silt loam.

The Tallula soils are on strongly sloping to steep side slopes at a higher elevation than the Bold soils. Typically, the surface layer is very dark grayish brown, friable silt loam about 10 inches thick. The subsoil to a depth of about 26 inches is friable silt loam. The upper part is brown, and the lower part is yellowish brown. The substratum to a depth of 60 inches or more is mottled, friable, and calcareous. The upper part is pale brown silt loam, and the lower part is light brownish gray silt.

Of minor extent in this map unit are the Hickory, Ipava, Radford, and Sylvan soils. Hickory and Sylvan soils have a light colored surface layer and are in positions similar to those of the major soils. Ipava soils are on broad ridges at a higher elevation and are somewhat poorly drained. Radford soils are on flood plains and are somewhat poorly drained.

The Tama, Bold, and Tallula soils are used mainly for





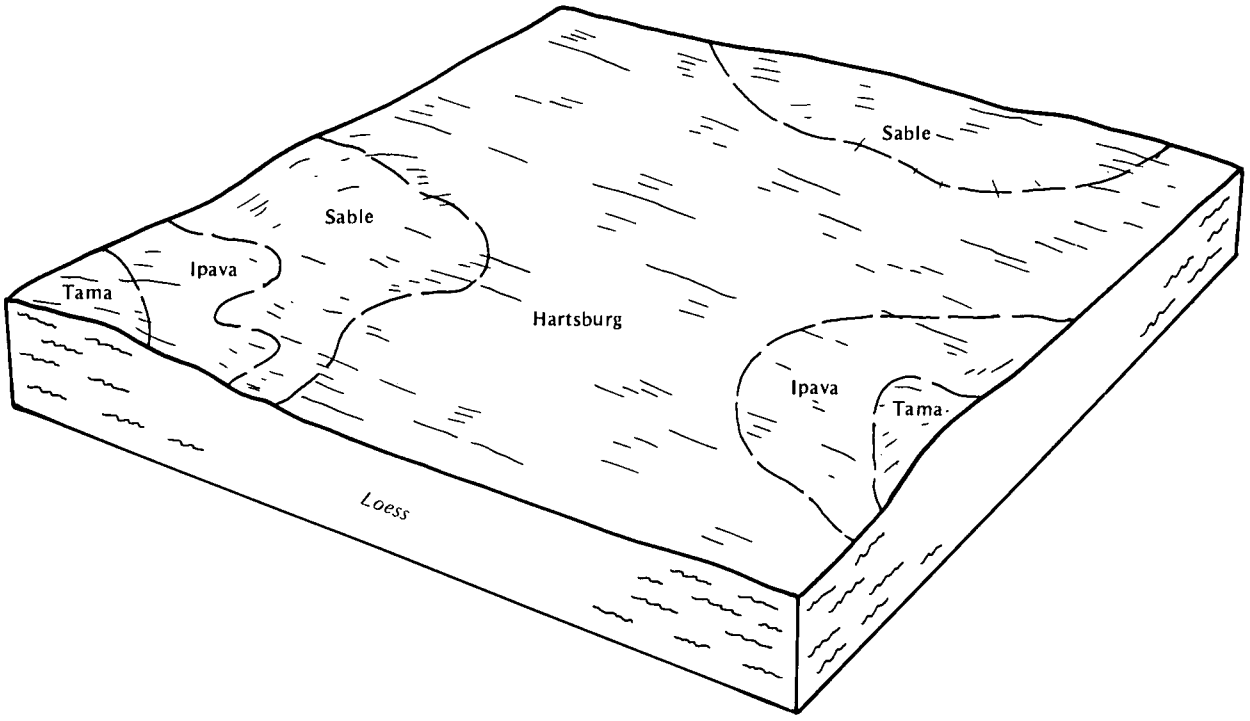


Figure 4.—Typical pattern of soils and parent material in the Hartsburg-Sable-Ipava general soil map unit.

5. Hartsburg-Sable-Ipava Association

Nearly level, poorly drained and somewhat poorly drained, silty soils that formed in loess

In this map unit, the landscape is mainly broad flats with some slight rises. Slopes generally range from 0 to 2 percent.

This map unit makes up about 5 percent of the county. It is about 63 percent Hartsburg soils, 20 percent Sable soils, 15 percent Ipava soils, and 2 percent soils of minor extent (fig. 4).

The Hartsburg soils are poorly drained. These soils are on broad flats generally on the lowest part of the landscape. Typically, the surface layer is black, friable silty clay loam about 6 inches thick. The subsurface layer to a depth of about 13 inches is black, friable silty clay loam. The subsoil to a depth of about 40 inches is mottled and friable. It is very dark gray silty clay loam; dark grayish brown, calcareous silty clay loam; dark

The Sable soils are poorly drained. These soils are on broad flats. Typically, the surface layer is black, firm silty clay loam about 6 inches thick. The subsurface layer to a depth of about 19 inches is black, firm silty clay loam. It is mottled in the lower part. The subsoil extends to a depth of about 50 inches and is mottled. The upper part is multicolored, firm silty clay loam; and the lower part is light brownish gray, friable silt loam. The substratum to a depth of 60 inches or more is mottled light brownish gray and light olive brown, friable silt loam.

The Ipava soils are somewhat poorly drained. These soils are on flats and slight rises at a higher elevation than the other major soils. Typically, the surface layer is black, friable silt loam about 10 inches thick. The subsurface layer to a depth of about 21 inches is very dark gray, firm silty clay loam. The subsoil extends to a depth of about 52 inches and is mottled and firm. The upper part is multicolored silty clay loam, and the lower

These soils are on ridges at a higher elevation than the major soils and are moderately well drained and well drained.

The Hartsburg, Sable, and Ipava soils are used for cultivated crops and are well suited to the crops commonly grown in the area. The seasonal high water table is a limitation, and ponding is a hazard. The main needs in managing cropland are to maintain or improve the drainage system and tilth.

These soils are poorly suited to use as sites for dwellings and septic tank absorption fields mainly because of the ponding hazard and the seasonal high water table.

Nearly Level to Sloping, Well Drained and Somewhat Poorly Drained Soils; on Stream Terraces, Alluvial Fans, and Foot Slopes

The soils in this group formed in alluvium and colluvium. They are used primarily for cultivated crops. Water erosion is a hazard in some areas of these soils.

6. Worthen-Littleton-Raddle Association

Nearly level to sloping, well drained and somewhat poorly drained, silty soils that formed in alluvium and colluvium

In this map unit, the landscape is nearly level, broad flats and gently sloping to sloping foot slopes and alluvial fans. Slopes generally are long and concave. They range from 0 to 10 percent.

This map unit makes up about 8 percent of the county. It is about 45 percent Worthen soils, 25 percent Littleton and similar soils, 11 percent Raddle soils, and 19 percent soils of minor extent.

The Worthen soils are well drained. These soils are on nearly level, broad flats. Typically, the surface layer is very dark grayish brown, friable silt loam about 9 inches thick. The subsoil to a depth of 60 inches or more is mottled dark grayish brown and dark brown, friable silt loam.

The Raddle soils are gently sloping and sloping and are well drained. These soils are on convex side slopes of stream terraces and on concave foot slopes. Typically, the surface layer is very dark grayish brown, friable silt loam about 11 inches thick. The subsurface layer to a depth of about 16 inches is dark brown, friable silt loam. The subsoil to a depth of 60 inches or more is friable silt loam. The upper part is dark brown, the middle part is dark yellowish brown, and the lower part is yellowish brown and dark yellowish brown.

Of minor extent in this map unit are the Arenzville, Dickinson, Sparta, and Thorp soils. Arenzville soils are on flood plains at a lower elevation than the major soils and are moderately well drained. Dickinson and Sparta soils are on convex ridges at a higher elevation than the major soils. Dickinson soils are loamy, and Sparta soils are sandy. Thorp soils are in shallow depressions and are poorly drained.

The Worthen, Littleton, and Raddle soils are used for cultivated crops and are well suited to the crops commonly grown in the area. The main concern in managing cropland is maintaining tilth and fertility. Also, measures that control water erosion are needed in areas of the Raddle soils.

The Worthen and Raddle soils are well suited to use as sites for dwellings and septic tank absorption fields. Littleton soils are not suited to these uses because of the hazard of flooding and the seasonal high water table.

Gently Sloping to Steep, Excessively Drained to Well Drained Soils; on Uplands and Terraces

The soils in this group formed in wind- and water-

soils, 14 percent Alvin soils, and 9 percent soils of minor extent.

The Bloomfield soils are sandy and somewhat excessively drained. These soils are on dune-like topography that has gently sloping to strongly sloping, convex slopes. Typically, the surface layer is dark brown, very friable fine sand about 9 inches thick. The subsurface layer to a depth of about 36 inches is yellowish brown, loose loamy fine sand. Between depths of 36 and 60 inches are alternate bands of yellowish brown and dark yellowish brown, very friable loamy fine sand and dark brown, friable fine sandy loam.

The Plainfield soils are sandy and somewhat excessively drained. These soils are on dune-like topography that has gently sloping to steep, convex slopes. Typically, the surface layer is dark brown, very friable sand about 8 inches thick. The subsoil is very friable sand to a depth of about 42 inches. The upper

soils are moderately well suited.

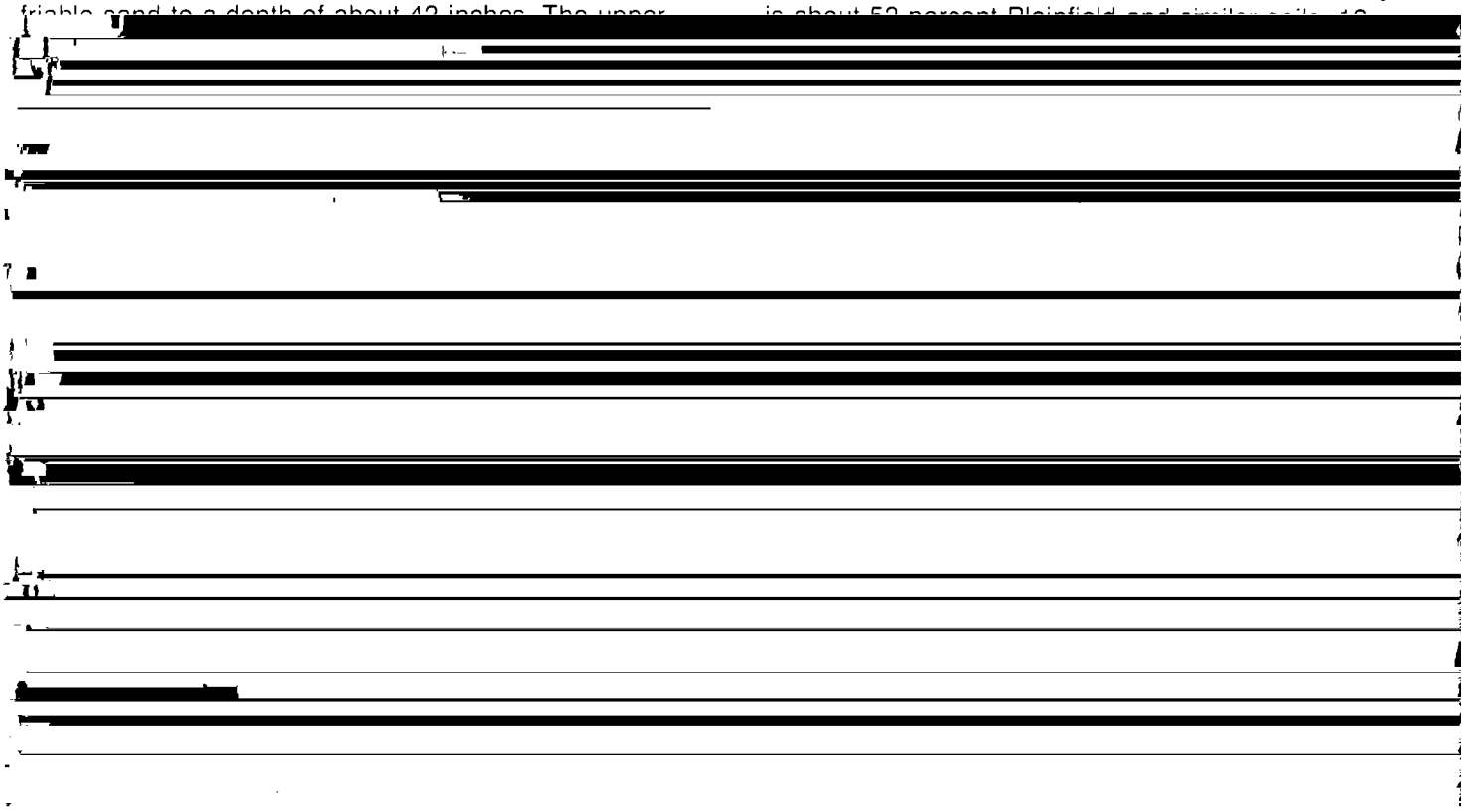
In gently sloping areas, the soils in this map unit are well suited to use as sites for dwellings. They are moderately suited in strongly sloping areas and are not suited in steep areas. The Bloomfield and Plainfield soils are poorly suited to use as sites for septic tank absorption fields because of the hazard of ground water contamination. Alvin soils, however, are well suited to this use.

8. Plainfield-Sparta Association

Gently sloping to strongly sloping, excessively drained, sandy soils that formed in wind- and water-deposited sands

In this map unit, the landscape is mainly ridges and dunes. Slopes range from 1 to 15 percent.

This map unit makes up 12 percent of the county. It is about 52 percent Plainfield and similar soils, 13

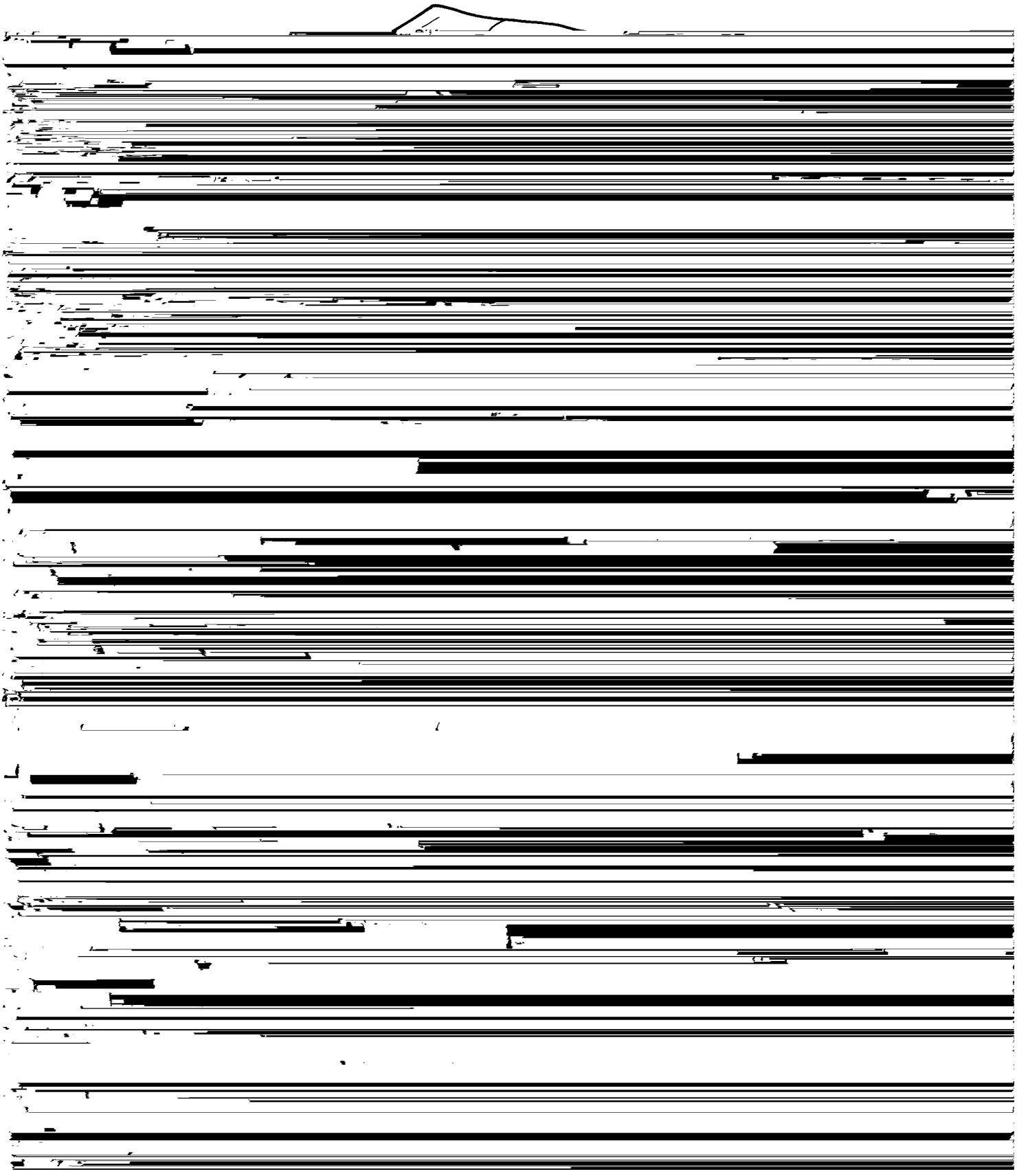


part is dark yellowish brown, and the lower part is dark yellowish brown and yellowish brown. The substratum to a depth of 60 inches or more is yellowish brown, loose sand.

The Alvin soils are loamy and well drained. These soils are on gently sloping ridges and sloping and strongly sloping side slopes. Typically, the surface layer is dark brown, friable fine sandy loam about 11 inches thick. The subsoil extends to a depth of about 52

percent Sparta soils, and 35 percent soils of minor extent (fig. 5).

The Plainfield soils are gently sloping to strongly sloping. These soils are on convex ridges and dunes. Typically, the surface layer is dark brown, very friable sand about 8 inches thick. The subsoil to a depth of about 32 inches is very friable sand. The upper part is dark yellowish brown, and the lower part is dark



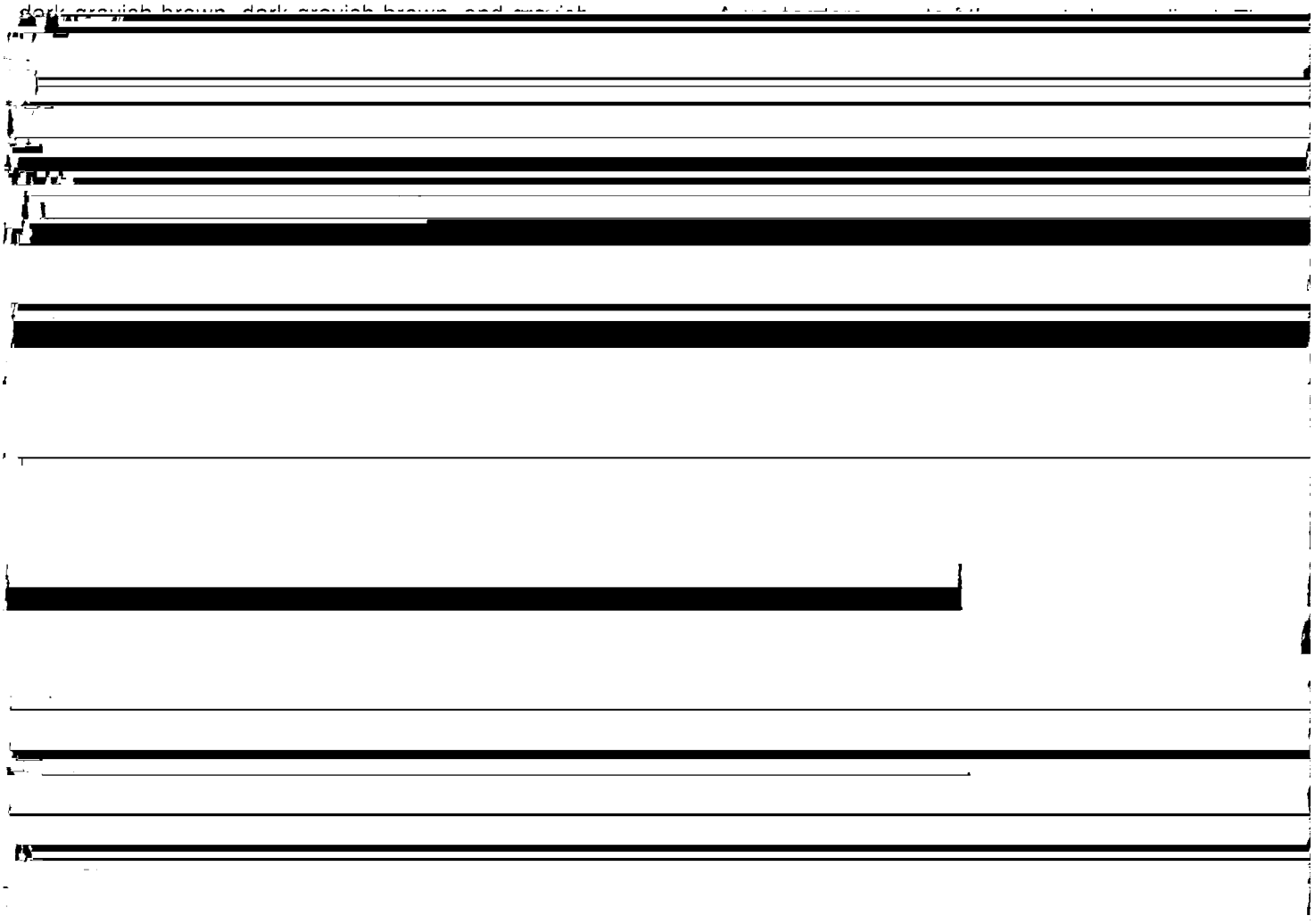
more is mottled light brownish gray and grayish brown, friable sandy clay loam.

The Ambraw soils are poorly drained and are on broad flats and in low-lying areas. Typically, the surface layer is very dark gray, firm clay loam about 9 inches thick. The next layer to a depth of 14 inches is very dark gray, mottled, firm clay loam. The subsoil is mottled, friable clay loam to a depth of about 48 inches. The upper part is dark gray, and the lower part is gray. The substratum to a depth of 60 inches or more is mottled gray, strong brown, and light gray, friable, stratified clay loam and loam.

The Dockery soils are somewhat poorly drained and are on flats or in sloughs. Typically, the surface layer is stratified dark grayish brown, very dark grayish brown, and brown, mottled, friable silt loam about 8 inches thick. The underlying material to a depth of 60 inches or more is stratified, mottled, and friable. The upper part is dark grayish brown, very dark grayish brown, and brown silt loam; the next part is very dark grayish brown and grayish brown silty clay loam; and the lower part is very dark grayish brown, dark grayish brown, and grayish

limitation in the Hartsburg-Sable-Ipava map unit. The Beaucoup, Ambraw, and Dockery soils in map unit 9 are subject to flooding, mainly in spring in some areas. The flood water can delay planting and cause slight to moderate crop damage. The seasonal high water table is the major limitation affecting the use of these soils for cultivated crops. Because of the hazard of water erosion, the soils in map unit 1 generally are poorly suited to cultivated crops, those in map unit 3 are moderately suited to poorly suited, and those in map unit 2 are not suited. The soils in map units 7 and 8 are poorly suited or not suited to cultivated crops mainly because of the low available water capacity and the hazard of soil blowing.

A small acreage of Cass County is pastureland. All of the soils in the county are suitable for grasses and legumes. A low available water capacity is the principal limitation to the use of the soils in map units 7 and 8. Pasture rotation, or other measures that prevent overgrazing, and drought-tolerant forage can help to overcome this limitation.



The suitability for wildlife habitat generally is good throughout the county. Soils in map units 1, 2, 3, 4, 5, 6, and 9 generally are well suited to use as habitat for openland and woodland wildlife. The soils in map units 5 and 9 are well suited to use as habitat for wetland wildlife.

Detailed Soil Map Units

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

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

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

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

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Tama silt loam, 5 to 10 percent slopes, eroded, is a phase of the Tama series.

Some map units are made up of two or more major soils. These map units are called soil complexes. A *soil complex* consists of two or more soils, or one or more

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

The names of the map units identified on the detailed soil maps of this county do not fully agree with those map units identified on the detailed soil maps in the published soil surveys of the adjacent Menard, Morgan, and Sangamon Counties. Differences result from variation in the extent of soils and soil phases. Because the soil series are similar or the same, these differences do not significantly affect the use of the maps for detailed planning of land uses.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

Soil Descriptions

8E—Hickory loam, 15 to 30 percent slopes. This soil is steep and is well drained. It is on side slopes of uplands. The areas of this soil are linear and range from 3 to 180 acres.

Typically, the surface layer is dark grayish brown, friable loam about 3 inches thick. The subsurface layer to a depth of about 9 inches is friable loam that is dark grayish brown in the upper part and yellowish brown in

Included with this soil in mapping are small areas of Arenzville and Radford soils. These soils are on flood plains. The Arenzville soils are moderately well drained, and the Radford soils are somewhat poorly drained. The included soils make up 5 to 10 percent of the map unit.

Water and air move through the Hickory soil at a moderate rate. Surface runoff is rapid. The available water capacity is high. Organic matter content is moderately low.

This Hickory soil is used mainly as pastureland or woodland. It is moderately suited to pasture and hay and well suited to woodland. Because of the steepness of slope, this soil generally is not suited to cultivated crops or to use as sites for dwellings and septic tank absorption fields.

This soil is suited to bromegrass, orchardgrass, tall fescue, and alfalfa, but water erosion control is needed when grasses and legumes are established. A no-till method of seeding or pasture renovation helps in establishing forage species and in controlling water erosion. The plants should not be grazed or clipped until they are sufficiently established. Machinery is difficult to operate on the steeper slopes. Proper stocking, rotation grazing, deferred grazing, and fertilizing help keep the pasture and the soil in good condition.

Because of the steepness of slope, the water erosion hazard and the equipment use limitation are concerns in managing this soil for timber production. Plant competition is also a concern. Laying out logging roads and skid trails on the contour helps to overcome the

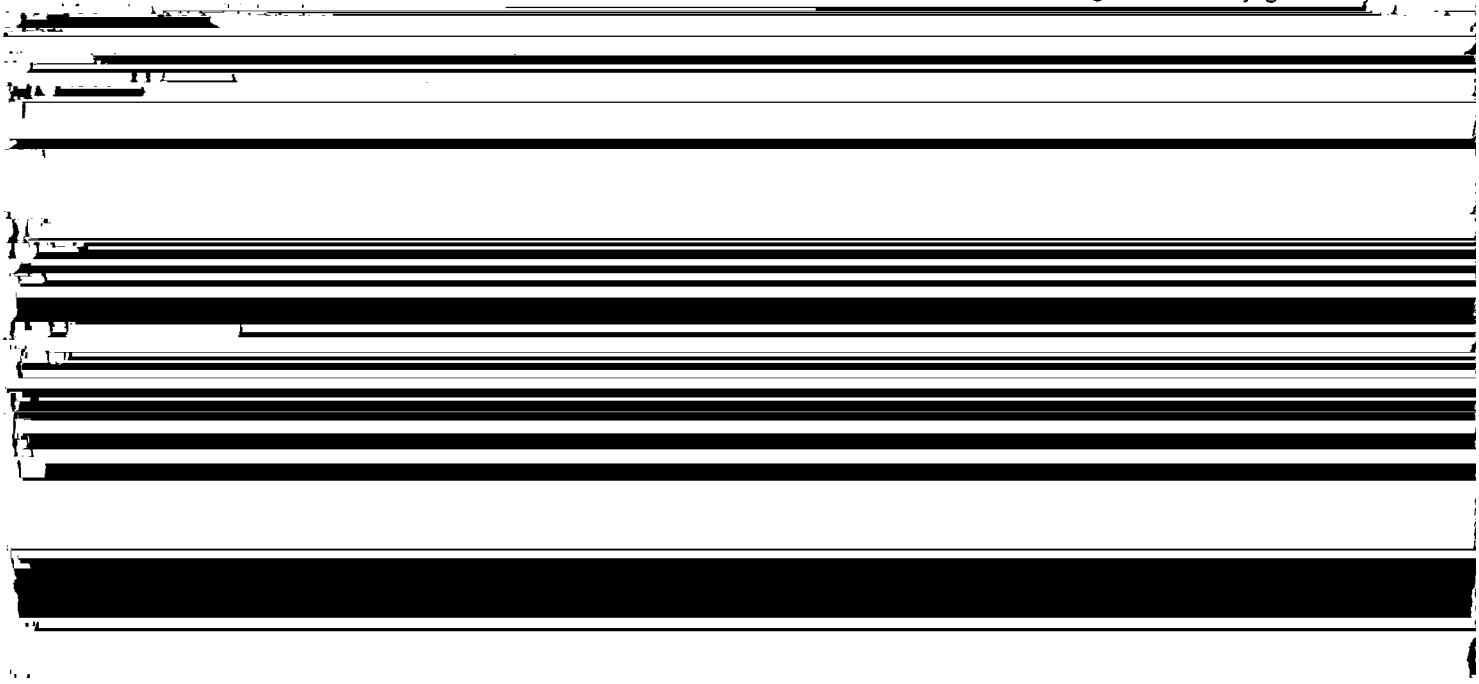
Typically, the surface layer is very dark grayish brown, dark grayish brown, and brown, friable loam about 4 inches thick. The subsurface layer to a depth of about 12 inches is friable loam that is brown and dark grayish brown in the upper part and yellowish brown in the lower part. The subsoil to a depth of 60 inches is firm. The upper part is yellowish brown clay loam, and the lower part is yellowish brown and brown loam. In some places, this soil has less sand, and in others, it has a thinner solum. In some areas, this soil has slope of less than 30 percent. In a few areas, a seasonal high water table is 4 to 6 feet below the surface.

Included with this soil in mapping are small areas of Arenzville, Bold, and Radford soils. Arenzville and Radford soils are on flood plains. Arenzville soils are moderately well drained, and Radford soils are somewhat poorly drained. Bold soils are on side slopes at a higher elevation than the Hickory soils and are calcareous. The included soils make up 5 to 10 percent of the map unit.

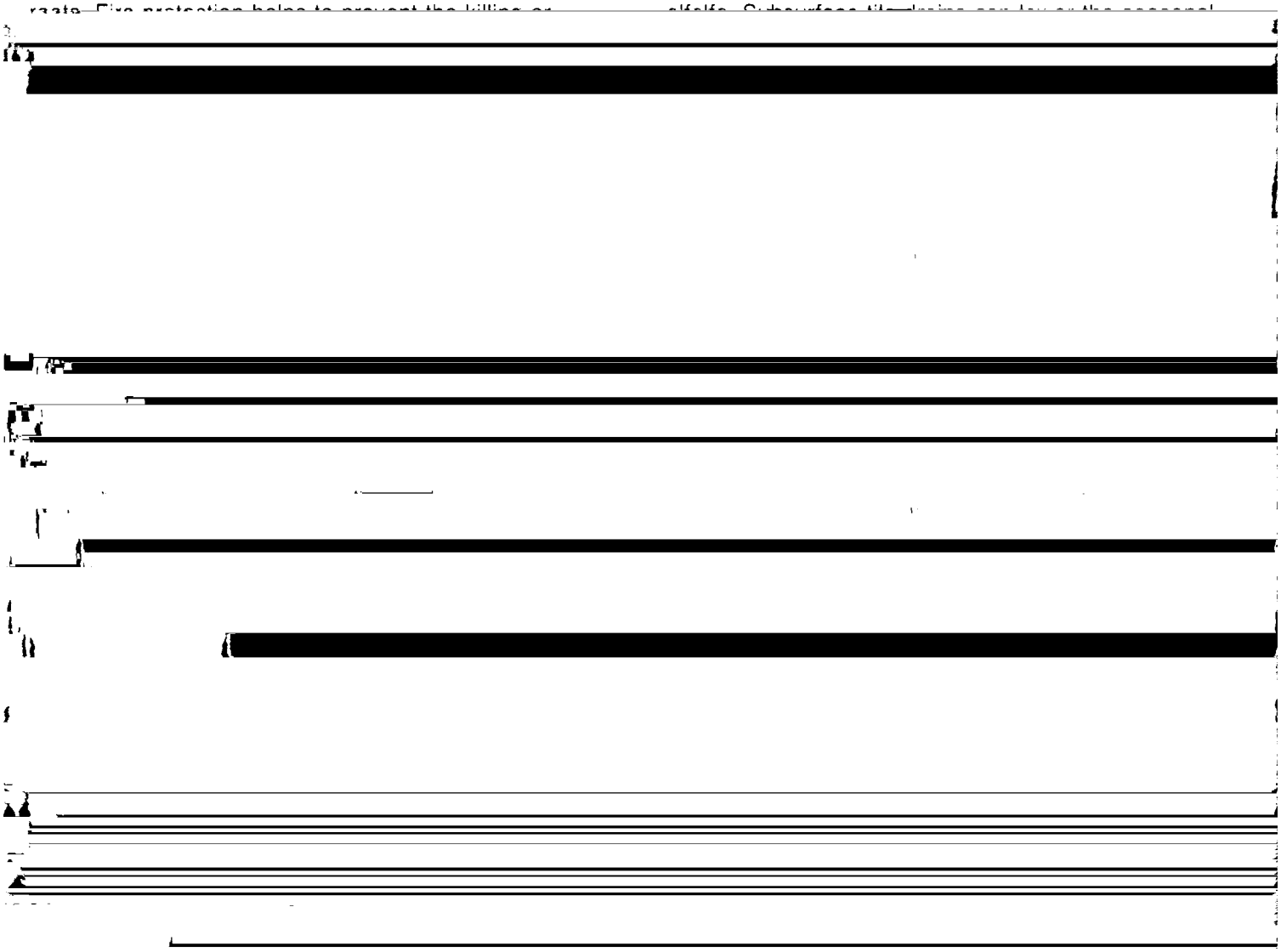
Water and air move through the Hickory soil at a moderate rate. Surface runoff is rapid. The available water capacity is high. Organic matter content is moderately low.

This Hickory soil is used mainly as woodland. In some areas, it is used for pasture. This soil is poorly suited to pasture and well suited to woodland. Because of the very steep slope, it generally is not suited to cultivated crops or to use as sites for dwellings and septic tank absorption fields.

If this soil is used for pasture, water erosion is a major hazard. Because large machinery generally



the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or



permanent injury to trees and the destruction of the leaf mulch.

This Hickory soil is in capability subclass VIIe.

17A—Keomah silt loam, 0 to 3 percent slopes. This soil is nearly level and is somewhat poorly drained. It is on broad upland flats. The areas of this soil are irregular in shape and range from 3 to 110 acres.

Typically, the surface layer is dark grayish brown, friable silt loam about 8 inches thick. The subsurface layer to a depth of about 14 inches is mottled, friable silt loam that is grayish brown in the upper part and brown in the lower part. The subsoil extends to a depth of more than 60 inches. It is mottled. The upper part is brown, firm silty clay loam. The next part is multicolored, firm silty clay loam. The lower part is

This soil is suited to adapted forage and hay plants, such as bromegrass, orchardgrass, tall fescue, and alfalfa. Subsurface tile drains can lower the seasonal high water table if suitable outlets are available. Overgrazing or grazing when the soil is too wet reduces forage yields, causes surface compaction and excessive runoff, and increases the susceptibility to erosion. Rotation grazing, deferred grazing, and fertilizing help to keep the pasture in good condition and to control erosion.

The seasonal high water table and the shrink-swell potential are limitations to the use of this soil as sites for dwellings. Installing subsurface tile drains near foundations helps to overcome the wetness. Extending the footings below the subsoil or reinforcing the foundations helps to prevent the structural damage caused by shrinking and swelling of the soil.

The moderately slow or slow permeability and the seasonal high water table limit the use of this soil as

medium. The available water capacity is very high. Organic matter content is low. The surface layer is compact and cloddy if plowed when the soil is too wet.

This Sylvan soil is used mainly for cultivated crops

Radford soils are in drainageways. Arenzville soils are moderately well drained, and Radford soils are somewhat poorly drained. Bold soils are on side slopes at a lower elevation than the Sylvan soil and are

[redacted]

In some areas, it is used for pasture and hay. This soil is poorly suited to cultivated crops. It is well suited to pasture and hay and to use as sites for dwellings and septic tank absorption fields.

In the areas of this soil that are used for corn, soybeans, or small grains, further water erosion is a severe hazard. Such practices as crop rotation, conservation tillage, contour farming, and terracing help to control water erosion and to maintain soil productivity. Crop rotations should include close-growing grasses and legumes for at least 1 year. Keeping tillage at a minimum and returning crop residue to the soil or regularly adding other organic material improve soil tilth and fertility and increase the rate of water intake.

This soil is suited to adapted forage and hay plants, such as orchardgrass, bromegrass, tall fescue, alfalfa, and ladino clover. Timely deferment of grazing helps to prevent overgrazing and thus also helps to prevent

[redacted]

calcareous. The included soils make up 5 to 10 percent of the map unit.

Water and air move through the Sylvan soil at a moderate rate. In cultivated areas, surface runoff is rapid. The available water capacity is very high. Organic matter content is moderately low. The surface layer tends to crust after hard rains.

This Sylvan soil is used mainly for cultivated crops or pasture. It is moderately suited to cultivated crops, pasture, and hay and is well suited to woodland. This soil is moderately suited to use as sites for dwellings and septic tank absorption fields.

Further water erosion is a hazard if this soil is used for corn, soybeans, or small grains. Also, tilth is a limitation. Soil loss can be kept within tolerable limits by a crop rotation dominated by forage crops and by a combination of contour farming and conservation tillage. Stripcropping also helps to control water erosion. Returning crop residue to the soil and regularly adding

[redacted]

19D3—Sylvan silty clay loam, 10 to 15 percent slopes, severely eroded. This soil is strongly sloping and is well drained. It is on side slopes of uplands. Over most of the area, the original surface layer has been removed by water erosion and tillage has mixed the rest with the upper part of the subsoil. The areas of this soil are linear and range from 3 to 40 acres.

Typically, the surface layer is mixed dark brown and dark yellowish brown, friable silty clay loam about 4 inches thick. The subsoil extends to a depth of about 27 inches. It is yellowish brown and friable. The upper part is silty clay loam, and the lower part is silt loam. The underlying material to a depth of 60 inches or more is pale brown, mottled, friable, calcareous silt loam. In some areas, the subsoil has less clay, and in others, this soil has slope of less than 10 percent.

Included with this soil in mapping are small areas of

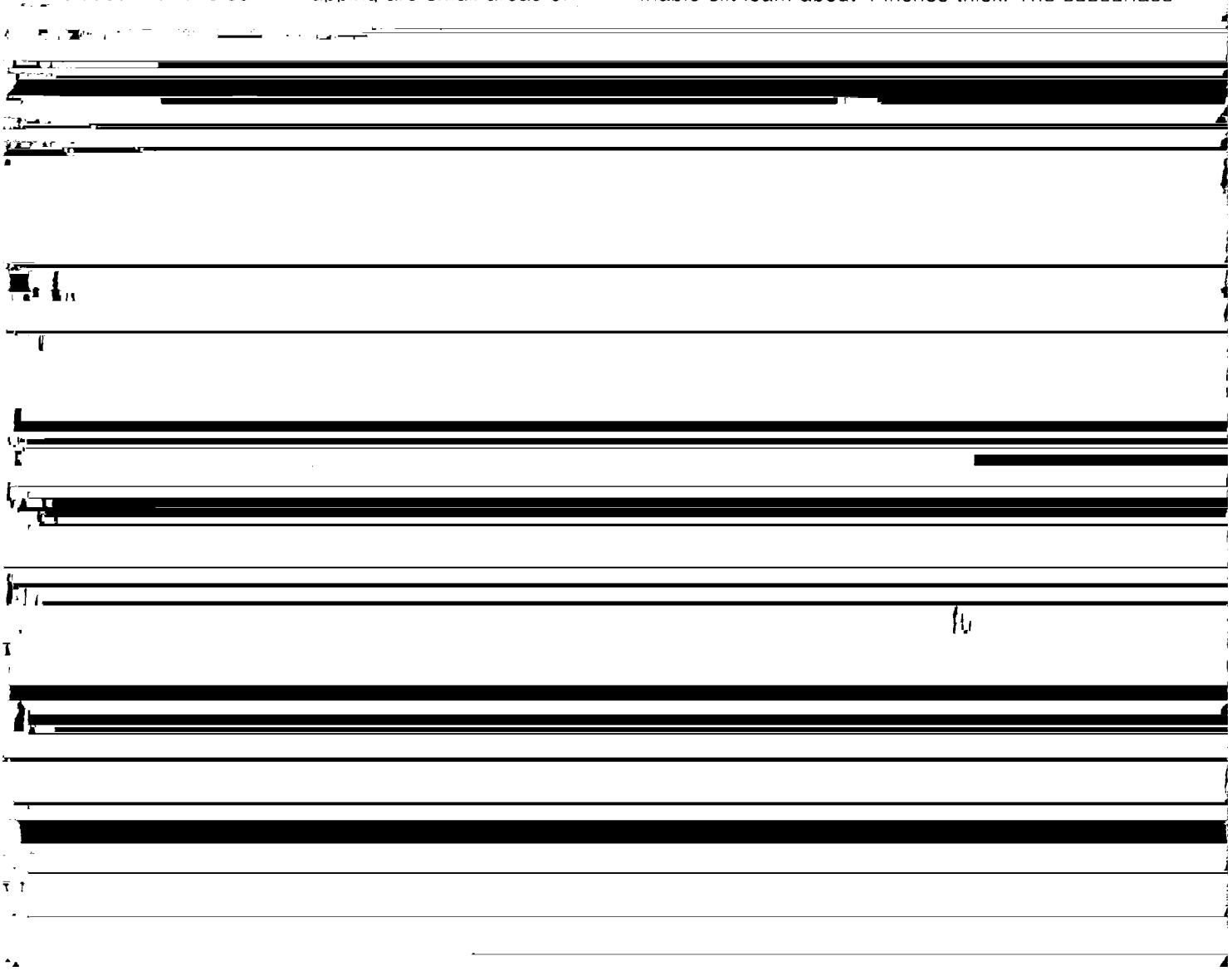
establish and to maintain the pasture. The plants should not be grazed or clipped until they are sufficiently established.

Steepness of slope limits the use of this soil as sites for dwellings or septic tank absorption fields. Cutting and filling help to overcome this limitation on sites for dwellings. Filter lines need to be installed on the contour to overcome the slope on sites for septic tank absorption fields.

This Sylvan soil is in capability subclass IVe.

19E—Sylvan silt loam, 15 to 30 percent slopes. This soil is steep and is well drained. It is on side slopes of uplands. The areas of this soil are linear and range from 3 to 50 acres.

Typically, the surface layer is dark grayish brown, friable silt loam about 4 inches thick. The subsurface



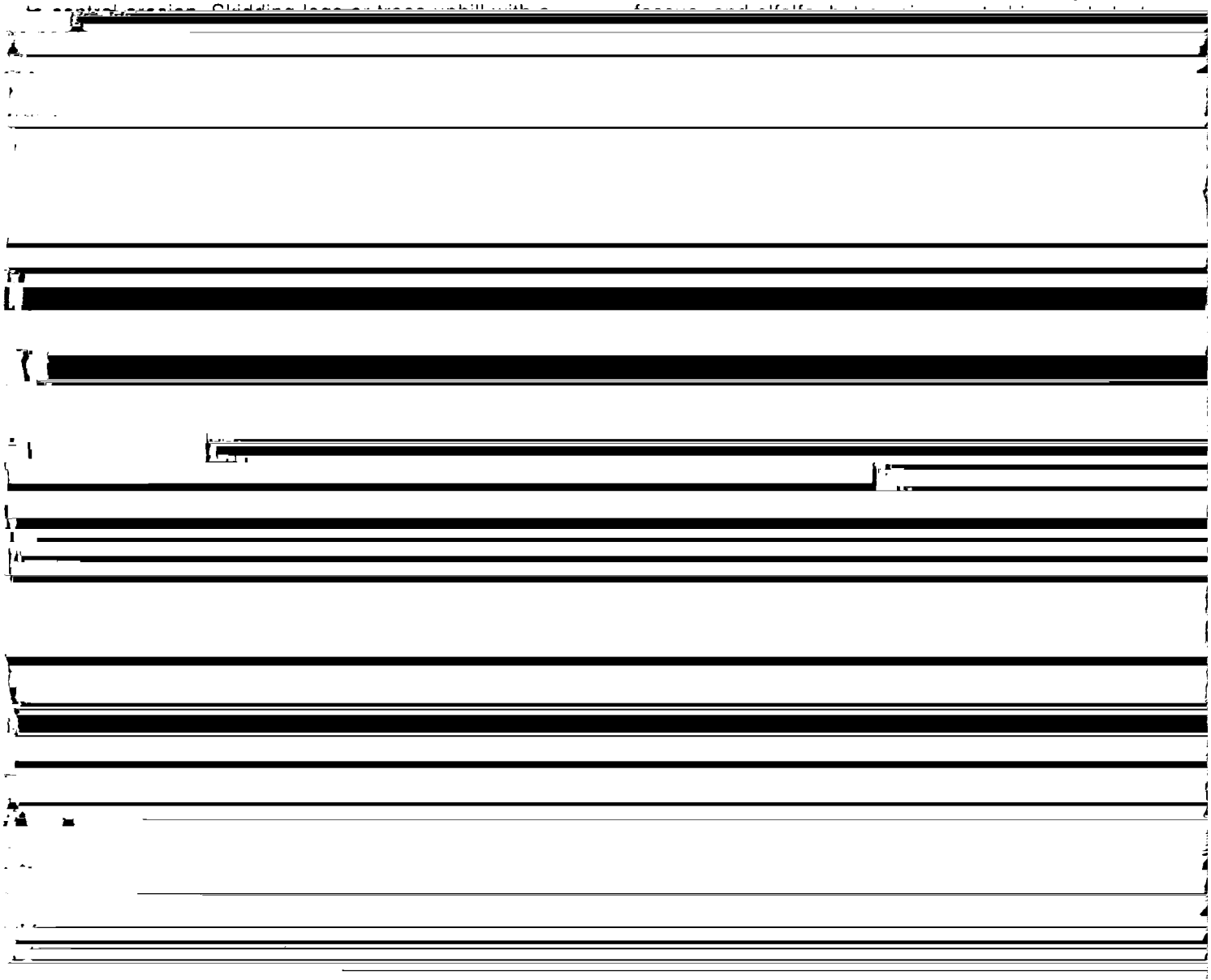
no-till seeding system improves forage quality and helps to control erosion. Machinery is difficult to operate on the steeper slopes. Planting suitable species, proper stocking, rotation grazing, deferred grazing, and fertilizing help to maintain the pasture.

Because of the steepness of slope, the water erosion hazard, equipment use limitation, and seedling mortality are concerns in managing this soil for timber production. Plant competition is also a concern. Laying out logging roads and skid trails on the contour helps to overcome the problems caused by slope and also helps

Water and air move through the Hamburg soil at a moderate rate. Surface runoff is rapid. The available water capacity is very high. Organic matter content is moderately low.

This Hamburg soil is used mainly as woodland. In some areas, it is used for pasture. This soil is moderately suited to pasture and very poorly suited to woodland. Because of the steepness of slope, it generally is not suited to cultivated crops or to use as sites for dwellings and septic tank absorption fields.

This soil is suited to bromegrass, orchardgrass, tall



cable and winch also helps. Because of the hazard of erosion, grass firebreaks are needed. Seeding all bare areas to grass or to a grass-legume mixture after completion of logging operations helps to control

grasses and legumes are established. A permanent cover of pasture plants helps to control water erosion and to maintain soil tilth. In areas where the pasture is established, seeding legumes on the contour using a

Figure 6.—Catsteps in an area of Hamburg silt loam, 35 to 60 percent slopes.

Typically, the surface layer is dark grayish brown, friable silt loam about 7 inches thick. The underlying material to a depth of 60 inches or more is friable. It is, in sequence downward, brown silt loam, yellowish brown silt, and light yellowish brown silt. In some areas, this soil has more clay, and in others, the upper part of the profile is not calcareous.

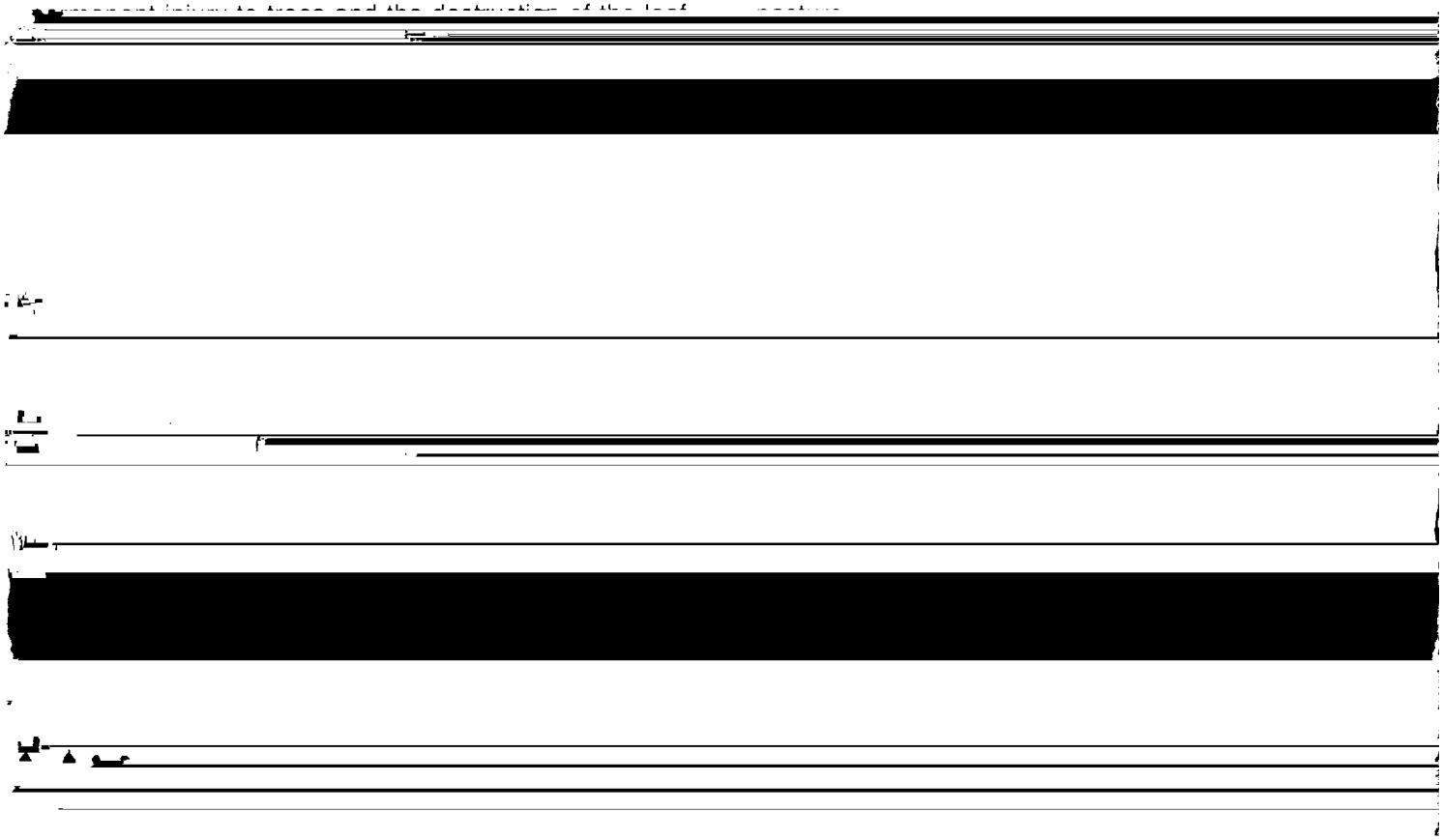
Included with this soil in mapping are small areas of the Arenzville and Plainfield soils. Arenzville soils are on flood plains and are moderately well drained

dwellings and septic tank absorption fields.

This soil is suited to bromegrass, orchardgrass, tall fescue, and alfalfa, but water erosion is a major hazard. Some kind of ground cover is essential to control erosion. Because large machinery generally cannot cross the short, very steep slopes, the only methods of seeding, fertilizing, and spraying are by airplane and by hand. Proper stocking, deferred grazing, fertilizing, and rotation grazing help to maintain the pasture and to

support the equipment. Seedling mortality can be reduced if all vegetation within 2 feet of the existing or planted seedlings is eliminated and if older and larger stock is planted. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or

grasses and legumes are established. A permanent cover of pasture plants helps to control erosion and to maintain soil tilth. In areas where the pasture is established, seeding legumes on the contour using a no-till seeding system improves forage quality and helps to control erosion. Machinery is difficult to operate on the steeper slopes. Proper stocking, rotation grazing, deferred grazing, and fertilizing help to maintain the



mulch.

This Hamburg soil is in capability subclass VIIe.

34D—Tallula silt loam, 7 to 15 percent slopes. This soil is strongly sloping and is well drained. It is on side slopes of uplands. The areas of this soil are linear and range from 3 to 65 acres.

Typically, the surface layer is very dark grayish brown, friable silt loam about 10 inches thick. The subsoil to a depth of 26 inches is friable silt loam that is brown in the upper part and yellowish brown in the lower part. The substratum is mottled, friable, and calcareous. The upper part is pale brown silt loam, and the lower part to a depth of 60 inches or more is light brownish gray silt. In some areas, the surface layer is lighter in color, and in others, the solum is thicker. In some places, the subsoil has more clay.

Included with this soil in mapping are small areas of

Steepness of slope limits the use of this soil as sites for dwellings or septic tank absorption fields. Alteration of the slope by cutting, filling, and land shaping helps to overcome this limitation on sites for dwellings. Filter lines need to be installed on the contour to overcome the slope on sites for septic tank absorption fields.

This Tallula soil is in capability subclass IIIe.

35D2—Bold silt loam, 7 to 15 percent slopes, eroded. This soil is strongly sloping, well drained, and calcareous. It is on side slopes of uplands. The areas of this soil are linear and range from 3 to 265 acres.

Typically, the surface layer is yellowish brown, friable silt loam about 8 inches thick. Part of the original surface layer has been removed by water erosion. The underlying material to a depth of 60 inches or more is light brownish gray, mottled, friable silt loam. In some areas, this soil has less clay, and in others, carbonates

Stripcropping also helps to control erosion. Returning crop residue to the soil and regularly adding other organic material help to maintain soil productivity, to prevent crusting, and to improve soil tilth.

This soil is suited to bromegrass, orchardgrass, tall fescue, and alfalfa, but erosion control is needed when grasses and legumes are established. A permanent cover of pasture plants helps to control erosion and to maintain soil tilth. In areas where the pasture is established, seeding legumes on the contour using a no-till seeding system improves forage quality and helps to control erosion. Machinery is difficult to operate on the steeper slopes. Proper stocking, rotation grazing, deferred grazing, and fertilizing help to maintain the pasture.

Steepness of slope limits the use of this soil as sites for dwellings or septic tank absorption fields. Alteration of the slope by cutting, filling, and land shaping helps to overcome this limitation on sites for dwellings. Filter lines need to be installed on the contour to overcome cultivated crops or to use as sites for dwellings and septic tank absorption fields.

This soil is suited to bromegrass, orchardgrass, tall fescue, and alfalfa, but erosion control is needed when grasses and legumes are established. A permanent cover of pasture plants helps to control erosion and to maintain soil tilth. In areas where the pasture is established, seeding legumes on the contour using a no-till seeding system improves forage quality and helps to control erosion. Machinery is difficult to operate on the steeper slopes. Planting suitable species, proper stocking, rotation grazing, deferred grazing, and fertilizing help to maintain the pasture.

This Bold soil is in capability subclass VIe.

36A—Tama silt loam, 0 to 2 percent slopes. This soil is nearly level and is moderately well drained. It is on flats and ridges of uplands. The areas of this soil are irregular in shape and range from 3 to 100 acres.

Typically, the surface layer is very dark gray, friable

production and causes surface compaction and poor tilth. Proper stocking, rotation grazing, deferred grazing, and applying fertilizer and lime help to maintain the pasture and the soil.

The moderate shrink-swell potential is a limitation for the use of this soil as sites for dwellings, and the seasonal high water table is a limitation for dwellings with basements. Extending the footings below the subsoil or reinforcing the foundation helps to prevent the structural damage caused by shrinking and swelling. The water table can be lowered if subsurface tile drains are installed near the foundation of dwellings with basements.

The seasonal high water table and the moderate permeability limit the use of this soil as sites for septic tank absorption fields. Subsurface tile drains can lower the water table. Increasing the size of the absorption field or replacing the soil with more permeable material helps to overcome the moderate permeability.

This Tama soil is in capability class I.

36B—Tama silt loam, 2 to 5 percent slopes. This soil is gently sloping and is well drained. It is on ridges and side slopes of uplands. The areas of this soil are linear or irregular in shape and range from 3 to 310 acres.

Typically, the surface layer is very dark grayish brown, friable silt loam about 11 inches thick. The subsurface layer to a depth of about 17 inches is very

and septic tank absorption fields.

In the areas used for corn, soybeans, or small grains, water erosion is a hazard. Erosion can be controlled, however, by a system of conservation tillage that leaves crop residue on the surface, by contour farming, or by terracing. Returning crop residue to the soil or regularly adding other organic material helps to maintain soil tilth and fertility.

This soil is suited to bromegrass, orchardgrass, tall fescue, and alfalfa. Overgrazing reduces forage yields, causes surface compaction and excessive runoff, and increases the susceptibility to erosion. Proper stocking, rotation grazing, and deferred grazing help to control erosion. Fertilizer and lime help to maintain the pasture and the soil.

The moderate shrink-swell potential limits the use of this soil as sites for dwellings. Reinforcing the foundation helps to prevent structural damage caused by shrinking and swelling.

The moderate permeability limits the use of this soil as sites for septic tank absorption fields. Increasing the size of the absorption field or replacing the soil with more permeable material helps to overcome this limitation.

This Tama soil is in capability subclass IIe.

36C2—Tama silt loam, 5 to 10 percent slopes, eroded. This soil is sloping and is well drained. It is on side slopes and ridges of uplands. The areas are linear

This Tama soil is used mainly for cultivated crops. In some areas, it is used for pasture and hay. This soil is moderately suited to cultivated crops and well suited to pasture and hay. It is moderately suited to use as sites for dwellings and septic tank absorption fields.

Water erosion control is needed in the areas of this soil that are used for corn, soybeans, or small grains. Such practices as conservation tillage, contour farming, terracing, and crop rotations help to control erosion. At least 1 year of forage crops should be included in crop rotations. Tilling when the soil is wet causes surface cloddiness, compaction, and excessive runoff and erosion. Returning crop residue to the soil and regularly adding other organic material increase the rate of water infiltration and help to maintain soil tilth.

This soil is suited to adapted forage and hay plants, such as bromegrass, orchardgrass, tall fescue, and alfalfa. Timely deferment of grazing helps to prevent overgrazing and thus also helps to prevent surface compaction, excessive runoff, and a greater susceptibility to erosion. Tilling on the contour to prepare a seedbed or to renovate a pasture also helps to control erosion. Fertilizer is needed. The plants should not be grazed or clipped until they are sufficiently established.

The moderate shrink-swell potential limits the use of this soil as sites for dwellings. Reinforcing the foundation helps to prevent structural damage caused by shrinking and swelling.

The moderate permeability limits the use of this soil [illegible] absorption fields. Increasing the table is within a depth of 6 feet.

Included with this soil in mapping are small areas of the Littleton soils. These soils are in slightly lower positions than those of the Worthen soil and are somewhat poorly drained. They make up 1 to 5 percent of the map unit.

Water and air move though the Worthen soil at a moderate rate. In cultivated areas, surface runoff is slow. The available water capacity is very high. Organic matter content is moderate.

This Worthen soil is used mainly for cultivated crops. It is well suited to cultivated crops and to use as sites for dwellings and septic tank absorption fields.

No major limitations affect the use of this soil for corn, soybeans, or small grains. Conservation tillage helps to maintain soil tilth and productivity.

This Worthen soil is in capability class I.

43A—Ipava silt loam, 0 to 2 percent slopes. This soil is nearly level and is somewhat poorly drained. It is on broad upland flats. The areas of this soil are irregular in shape and range from 3 to 2,200 acres.

Typically, the surface layer is black, friable silt loam about 10 inches thick. The subsurface layer to a depth of 21 inches is very dark gray, firm silty clay loam. The subsoil extends to a depth of about 52 inches. It is mottled and firm. The upper part is multicolored silty clay loam, and the lower part is light brownish gray and light yellowish brown silt loam. The underlying material to a depth of 60 inches or more is light brownish gray, [illegible]

The seasonal high water table and the high shrink-swell potential are limitations to the use of this soil as sites for dwellings. Installing subsurface tile drains near the foundation helps to overcome the wetness. Extending footings below the subsoil or reinforcing the foundation helps to prevent the structural damage caused by shrinking and swelling.

The moderately slow permeability and the seasonal high water table are limitations if this soil is used as a septic tank absorption field. Tile drains can lower the water table, and enlarging the absorption field helps to overcome the moderately slow permeability. A septic tank system can function satisfactorily if a sealed sand filter and a disinfection tank or an evapotranspiration bed are installed.

This Ipava soil is in capability class I.

43B—Ipava silt loam, 2 to 5 percent slopes. This soil is gently sloping and is somewhat poorly drained. It is on ridges and side slopes of uplands. The areas of this soil are linear or irregular in shape and range from 3 to 40 acres.

Typically, the surface layer is very dark grayish brown, friable silt loam about 9 inches thick. The subsurface layer to a depth of 17 inches is very dark grayish brown, friable silt loam. The subsoil is mottled and extends to a depth of about 53 inches. The upper part is dark grayish brown and dark brown, firm silty clay loam; the next part is brown, firm silty clay loam; and the lower part is pale brown, friable silt loam. The underlying material to a depth of 60 inches or more is pale brown, mottled, friable silt loam. In some areas, this soil does not have a subsurface layer. In some areas, a seasonal high water table is within a depth of 1 foot, and in others, it is below a depth of 3 feet.

Included with this soil in mapping are small areas of the Tama soils on ridgetops or side slopes at a higher elevation than the Ipava soil. These soils are well drained. They make up 1 to 5 percent of the map unit.

Water and air move through the Ipava soil at a moderately slow rate. In cultivated areas, surface runoff is medium. In spring, a seasonal high water table is 1 foot to 3 feet below the surface. The available water capacity is very high. Organic matter content is high. Shrink-swell potential is high.

This Ipava soil is used mainly for cultivated crops and is well suited to this use. It is poorly suited to use as sites for dwellings and septic tank absorption fields.

If this soil is used for corn, soybeans, or small grains, water erosion is a hazard, particularly in areas near drainageways. Also, the seasonal high water table can delay planting in some years. Conservation tillage helps to maintain soil productivity and soil tilth and also helps to control erosion. A drainage system helps to dry out the soil in the spring. Subsurface tile drains function satisfactorily if suitable outlets are available.

The seasonal high water table and the high shrink-swell potential are limitations to the use of this soil as sites for dwellings. Subsurface tile drains near the foundation help to overcome the wetness. Extending footings below the subsoil or reinforcing the foundation helps to prevent the structural damage caused by shrinking and swelling.

The moderately slow permeability and the seasonal high water table are limitations if this soil is used as septic tank absorption fields. Tile drains can lower the water table. Enlarging the absorption field helps to overcome the moderately slow permeability. A septic tank system can function satisfactorily if a sealed sand filter and a disinfection tank or an evapotranspiration bed are installed.

This Ipava soil is in capability subclass IIe.

49—Watseka sand. This soil is nearly level and is somewhat poorly drained. It is on stream terraces. The areas of this soil are irregular in shape and range from 3 to 55 acres.

Typically, the surface layer is very dark grayish brown, very friable sand about 7 inches thick. The subsurface layer to a depth of about 17 inches is very dark grayish brown, very friable sand. The subsoil to a depth of about 36 inches is sand. The upper part is dark grayish brown and is very friable; the next part is dark grayish brown, mottled, and is very friable; and the lower part is grayish brown, mottled, and is loose. The underlying material to a depth of 60 inches or more is light brownish gray, mottled, loose sand. In some areas, this soil has more clay throughout.

Included with this soil in mapping are small areas of the Gilford and Sparta soils. Gilford soils are in lower positions than those of the Watseka soil and are very poorly drained. Sparta soils are in higher positions and are excessively drained. The included soils make up 5 to 10 percent of the map unit.

Water and air move through the Watseka soil at a rapid rate. In cultivated areas, surface runoff is very slow. In spring, a seasonal high water table is 1 foot to 3 feet below the surface. The available water capacity is low. Organic matter content is moderately low.

This Watseka soil is used mainly for cultivated crops and is moderately suited to this use. This soil is poorly suited to use as sites for dwellings and septic tank absorption fields.

If this soil is used for corn, soybeans, or small grains,

soil blowing is a hazard and the low available water capacity is a limitation. Conservation tillage helps to control soil blowing and to conserve soil moisture. Returning crop residue to the soil or regularly adding other organic material helps to maintain soil tilth and improve soil fertility.

The seasonal high water table limits the use of this soil as sites for dwellings. Subsurface tile drains near the foundation help to overcome this limitation.

If this soil is used as sites for septic tank absorption fields, the seasonal high water table is a limitation and ground water contamination is a hazard. Underground drains can lower the water table. A septic system can function satisfactorily if a sealed sand filter and a disinfection tank or an evapotranspiration bed are installed.

This Watseka soil is in capability subclass IIIs.

53B—Bloomfield fine sand, 1 to 7 percent slopes. This soil is gently sloping and is somewhat excessively drained. It is on uplands and stream terraces. The areas of this soil are irregular in shape and range from 3 to 585 acres.

Typically, the surface layer is dark brown, very friable fine sand about 9 inches thick. The subsurface layer to a depth of about 36 inches is yellowish brown, loose loamy fine sand. Between depths of 36 and 60 inches are alternate bands of yellowish brown and dark yellowish brown, very friable loamy fine sand and dark brown, friable fine sandy loam. In some areas, the surface layer is darker and thicker.

Included with this soil in mapping are small areas of the Alvin and Orio soils. Alvin soils are in positions similar to those of the Bloomfield soil and are well drained. Orio soils are in shallow depressions and are poorly drained. The included soils make up 2 to 10 percent of the map unit.

Water and air move through the Bloomfield soil at a rapid rate. In cultivated areas, surface runoff is slow. The available water capacity is low. Organic matter content is low.

This Bloomfield soil is used mainly for cultivated crops. In some areas, it is used as woodland or for specialty crops, such as melons and pumpkins. This soil

conserve moisture. Returning crop residue to the soil or regularly adding other organic material helps to maintain soil tilth and improve soil fertility.

Because of the low available water capacity, seedling mortality is a concern in managing this soil for timber production. Seedling mortality can be reduced if drought-tolerant species are planted, if all vegetation within 2 feet of the existing or planted seedlings is eliminated, and if older and larger stock is planted. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

Soil blowing is a hazard in areas of this soil that are used for specialty crops, such as melons and pumpkins. Field windbreaks, border strips, and a surface mulch help to control soil blowing.

If this soil is used as sites for septic tank absorption fields, ground water contamination is a hazard. A septic system can function satisfactorily if a sealed sand filter and a disinfection tank or evapotranspiration bed are installed.

This Bloomfield soil is in capability subclass IIIs.

53D—Bloomfield fine sand, 7 to 15 percent slopes. This soil is strongly sloping and is somewhat excessively drained. It is on uplands and stream terraces. The areas of this soil are irregular in shape and range from 3 to 245 acres.

Typically, the surface layer is dark brown, very friable fine sand about 8 inches thick. The subsurface layer to a depth of about 34 inches is yellowish brown, loose fine sand. Between depths of 34 and 60 inches are alternate bands of yellowish brown and dark yellowish brown, loose fine sand and dark brown, very friable loamy fine sand. In some areas, the surface layer is darker and thicker.

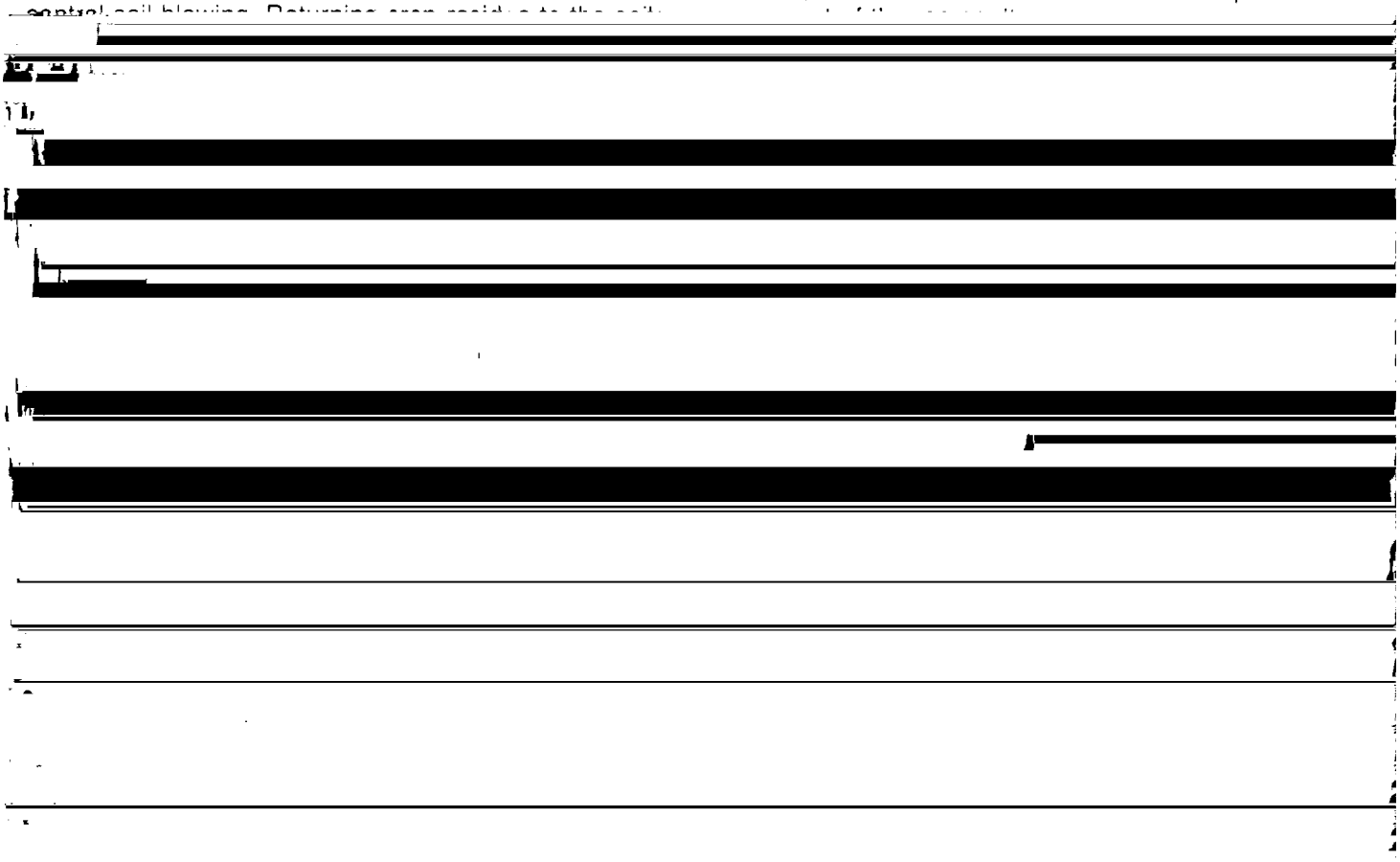
Included with this soil in mapping are small areas of the Alvin and Orio soils. Alvin soils are in positions similar to those of the Bloomfield soil. They are well drained and have more clay throughout. Orio soils are in shallow depressions and are poorly drained. The

moderately suited to pasture, hay, and woodland and to use as sites for dwellings. This soil is poorly suited to use as sites for septic tank absorption fields.

If this soil is used for corn, soybeans, or small grains, water erosion and soil blowing are hazards. Also, the low available water capacity and the fertility level are limitations. Such practices as conservation tillage, contour farming, and terracing help to control erosion and to conserve moisture. Field windbreaks and a tillage system that leaves the surface rough help to control soil blowing. Returning crop residue to the soil

is yellowish brown, loose sand. In some areas, the surface layer is darker and thicker, and in others, the subsoil has more clay. In some places, this soil has a loamy sand surface layer.

Included with this soil in mapping are small areas of the Orio and Watseka soils. Orio soils are in shallow depressions. They are poorly drained and have more clay in the upper part of the profile than the Plainfield soil. Watseka soils are in flat areas and are somewhat poorly drained. The included soils make up 2 to 10



or regularly adding other organic material helps to maintain soil tilth and improve soil fertility.

Establishing pasture or hay in areas of this soil helps to control soil blowing and water erosion, but droughtiness is a limitation. Deep-rooting forage species, such as alfalfa and bromegrass, help to overcome droughtiness. Proper stocking, rotation grazing, deferred grazing, and applying fertilizer and

Water and air move through the Plainfield soil at a rapid rate. In cultivated areas, surface runoff is slow. The available water capacity is low. Organic matter content is low.

This Plainfield soil is used mainly for cultivated crops, but it generally is not suited to this use because of soil blowing and the low available water capacity (fig. 7). This soil is well suited, however, to specialty crops

Figure 7.—The low available water capacity of the Plainfield sand, 1 to 7 percent slopes, results in severe plant stress.

are irregular in shape and range from 3 to 130 acres.

Water and air move through the Plainfield soil at a

overcome droughtiness. Proper stocking, rotation grazing, deferred grazing, and applying fertilizer and lime help to maintain the pasture and the soil.

Because of the low available water capacity, seedling mortality is a concern in managing this soil for timber production. Seedling mortality can be reduced if drought-tolerant species are planted, if all vegetation within 2 feet of the existing or planted seedlings is eliminated, and if older and larger stock is planted. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

Steepness of slope is a limitation to the use of this soil as sites for dwellings. Land shaping by cutting and filling helps to overcome this limitation.

If this soil is used as sites for septic tank absorption fields, steepness of slope is a limitation and ground water contamination is a hazard. A septic system can function satisfactorily if the site is leveled and a sealed sand filter and a disinfection tank or evapotranspiration bed are installed.

This Plainfield soil is in capability subclass VIs.

54E—Plainfield sand, 15 to 30 percent slopes. This soil is steep and is excessively drained. It is on side slopes of uplands and on stream terraces. The areas of this soil are linear or irregular in shape and range from 3 to 90 acres.

Typically, the surface layer is very dark grayish brown, very friable sand about 4 inches thick. The subsurface layer to a depth of about 6 inches is brown and dark brown, very friable sand. The subsoil to a depth of about 22 inches is yellowish brown sand that is very friable in the upper part and loose in the lower part. The underlying material to a depth of 60 inches or more is yellowish brown, loose sand. In some areas, this soil has more clay in the subsoil, and in others, it has slope of more than 30 percent. In some places, the surface layer is loamy sand.

Included with this soil in mapping are small areas of Hamburg soils in higher positions on the landscape. These soils are somewhat excessively drained and moderately suited to pasture, hay, and woodland. Because of the steepness of slope, this soil generally is not suited to cultivated crops or to use as sites for dwellings and septic tank absorption fields.

Establishing pasture or hay in areas of this soil helps to control soil blowing and water erosion, but droughtiness is a limitation. Deep-rooting forage species, such as alfalfa and bromegrass, help to overcome droughtiness. Proper stocking, rotation grazing, deferred grazing, and applying fertilizer and lime help to maintain the pasture and the soil.

Because of the steepness of slope, the erosion hazard and equipment use limitation are concerns in managing this soil for timber production. Seedling mortality is a concern because of the low available water capacity, and plant competition is also a concern. Laying out logging roads and skid trails on the contour helps to overcome problems caused by the slope and also helps to control erosion. Skidding logs or trees uphill with a cable and winch also helps. Because of the hazard of erosion, grass firebreaks are needed. Seeding bare areas to grass or to a grass-legume mixture after completion of logging operations helps to control erosion. Seedling mortality is reduced if drought-tolerant species are planted, if all vegetation within 2 feet of the existing or planted seedlings is eliminated, and if older and larger stock is planted. Competition of undesirable vegetation can be reduced by chemical or mechanical means. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

This Plainfield soil is in capability subclass VIIs.

68—Sable silty clay loam. This soil is nearly level and is poorly drained. It is on broad upland flats. This soil is ponded for brief periods from March to June. The areas of this soil are irregular in shape and range from 3 to 490 acres.

Typically, the surface layer is black, firm silty clay loam about 6 inches thick. The subsurface layer to a

others, the subsoil is calcareous within a depth of 35 inches. In some areas, a seasonal high water table is at a depth of more than 2 feet.

Included with this soil in mapping are small areas of Tama soils on slight rises. These soils are moderately well drained and well drained. They make up 1 to 5 percent of the map unit.

Water and air move through the Sable soil at a moderate rate. In cultivated areas, surface runoff is slow to ponded. In spring, a seasonal high water table is 0.5 foot above the surface to 2 feet below. The available water capacity is very high. Organic matter content is high. The surface layer is compact and cloddy if this soil is plowed when too wet.

This Sable soil is used mainly for cultivated crops and is well suited to this use. It is poorly suited to use as sites for dwellings and septic tank absorption fields.

If this soil is drained, it can be used for corn, soybeans, or small grains. A drainage system has been installed in most areas, and maintenance of the system is needed. Additional drainage is needed in some areas. Surface drains, subsurface tile, and surface inlet tile function satisfactorily if suitable outlets are available. Land grading helps to control the ponding. Such practices as conservation tillage and returning crop residue to the soil improve tilth, help to prevent surface compaction, and increase the rate of water intake.

If this soil is used as sites for dwellings, ponding is a hazard. This hazard can be reduced by diverting surface water from the site or by constructing the building on raised fill material. Subsurface tile drains and surface inlet tile drains can lower the water table.

Ponding and the seasonal high water table limit the use of this soil as sites for septic tank absorption fields. The depth to the seasonal high water table can be increased by adding as much as 2 feet of loamy fill material on the surface. Subsurface tile drains can also lower the water table. Installing a sealed sand filter and disinfection tank or evapotranspiration bed is an alternative.

This Sable soil is in capability subclass IIw.

70—Beaucoup silty clay loam, frequently flooded. This soil is nearly level and is poorly drained. It is on flood plains and is frequently flooded or ponded for long periods from March to June. Some areas of this soil are flooded for only brief periods. The areas of this soil are irregular in shape and range from 3 to 425 acres.

Typically, the surface layer is black, friable silty clay loam about 10 inches thick. The subsurface layer to a depth of 18 inches is very dark gray, firm silty clay loam. The subsoil is multicolored, firm silty clay loam to a depth of about 50 inches. The underlying material to a depth of 60 inches or more is mottled light brownish gray, grayish brown, and yellowish brown, friable sandy clay loam. In some areas, the upper part of the subsoil is darker or the subsoil has more sand. In other areas, this soil has less clay.

Water and air move through the Beaucoup soil at a moderately slow rate. In cultivated areas, surface runoff is slow to ponded. In spring, a seasonal high water table is 0.5 foot above the surface to 2 feet below. The available water capacity is high. Organic matter content is high. The surface layer is compact and cloddy if this soil is plowed when too wet.

This Beaucoup soil is used mainly for cultivated crops, but it is poorly suited to this use. This soil generally is not suited to use as sites for dwellings or for septic tank absorption fields because of flooding.

In areas of this soil that are used for corn or soybeans, flooding frequently delays planting and occasionally damages the crop. Short-season crops are less likely to be damaged by flooding. This soil is sufficiently drained for cultivated crops. Maintaining or improving the drainage system helps to maintain or improve yields. Tile and surface drains function satisfactorily if suitable outlets are available. Returning crop residue to the soil improves soil tilth and helps to maintain soil fertility.

This Beaucoup soil is in capability subclass IVw.

71—Darwin silty clay. This soil is nearly level and is poorly drained. It is on flood plains. This soil is protected by a levee system and is subject to only rare flooding. It is ponded for brief periods from March to June. The areas of this soil are irregular in shape and range from 3 to more than 1,500 acres.

Typically, the surface layer is very dark gray, firm silty clay about 12 inches thick. The subsurface layer to a depth of about 21 inches is very dark gray, mottled, firm silty clay. The subsoil to a depth of about 53 inches is mottled, firm silty clay that is dark gray in the upper part and grayish brown in the lower part. The underlying material to a depth of 60 inches or more is mottled dark gray, grayish brown, and yellowish brown, firm silty clay loam. In some areas, this soil has a thicker subsurface layer.

Included with this soil in mapping are areas of Beaucoup soils in slightly higher positions on the flood plain. These soils are moderately slowly permeable. They make up 1 to 5 percent of the map unit.

Water and air move through the Darwin soil at a very slow rate. In cultivated areas, surface runoff is slow to ponded. In spring, a seasonal high water table is 1 foot

above the surface to 2 feet below. The available water capacity is moderate. Organic matter content is high. The surface layer is compact and cloddy if this soil is plowed when too wet.

This Darwin soil is used mainly for cultivated crops and is moderately suited to this use. It generally is not suited to use as sites for dwellings and septic tank absorption fields because of flooding and the very slow permeability.

If this soil is drained, it can be used for corn, soybeans, or small grains. A drainage system has been installed in most areas, and maintenance of the system is needed. Additional drainage is needed in some areas. Surface ditches and land leveling can reduce the wetness. Tilling when the soil is wet causes surface compaction and decreases the rate of water infiltration. Returning crop residue to the soil, adding other organic material, and minimizing tillage increase the rate of water infiltration and help to maintain good tilth.

This Darwin soil is in capability subclass IIIw.

74—Radford silt loam, frequently flooded. This soil is nearly level and is somewhat poorly drained. It is on flood plains and is frequently flooded for brief periods from March to June. In a few areas, it is flooded for long periods. The areas of this soil are linear or irregular in shape and range from 5 to 440 acres.

Typically, the surface layer is very dark grayish brown, friable silt loam about 7 inches thick. The subsurface layer to a depth of about 12 inches is very dark grayish brown, friable silt loam. The underlying material to a depth of about 33 inches is mottled dark grayish brown and very dark grayish brown, friable silt loam. It has thin grayish brown and brown strata. A buried soil extends to a depth of 60 inches or more. It is very dark gray, friable silt loam that is mottled in the lower part. In some areas, the surface layer is lighter in color, and in others, the depth to the buried soil is more than 40 inches or is less than 20 inches.

Water and air move through the Radford soil at a moderate rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is 1 foot to 3 feet below the surface. The available water capacity is very high. Organic matter content is moderate.

This Radford soil is mainly used for cultivated crops. In some areas, it is used for pasture. This soil is moderately suited to cultivated crops, pasture, and hay. It generally is not suited to use as sites for dwellings and septic tank absorption fields because of flooding.

In areas of this soil used for corn or soybeans, flooding occasionally delays planting or causes crop damage. The seasonal high water table also delays planting in some years. Subsurface drains can lower the water table. Returning crop residue to the soil helps to maintain soil tilth and fertility.

If this soil is used for pasture or hay, harvesting or grazing during wet periods or overgrazing reduces forage production and causes surface compaction and poor soil tilth. Proper stocking, rotation grazing, deferred grazing, and applying fertilizer and lime help to maintain the pasture and the soil.

This Radford soil is in capability subclass IIIw.

78—Arenzville silt loam, frequently flooded. This soil is nearly level and is moderately well drained. It is on flood plains and is frequently flooded for brief periods from March to June. In a few areas, it is flooded for long periods. The areas of this soil are linear or irregular in shape and range from 3 to 340 acres.

Typically, the surface layer is brown, friable silt loam about 7 inches thick. The underlying material to a depth of about 27 inches is friable silt loam. The upper part is brown, the next part is stratified dark grayish brown and brown, and the lower part is stratified dark grayish brown, very dark grayish brown, and brown. A buried soil extends to a depth of 60 inches or more. It is very dark gray and is friable. The upper part is silt loam, and the lower part is silty clay loam. In some areas, the surface layer is darker and thicker, and in others, the underlying material is calcareous. In some places, the depth to the buried soil is more than 40 inches, and in a few places, it is within a depth of 20 inches. In some places, a seasonal high water table is within a depth of 3 feet.

Included with this soil in mapping are small areas of Sawmill soils in slightly lower positions on the landscape. These soils are poorly drained. They make up 1 to 5 percent of the map unit.

Water and air move through the Arenzville soil at a moderate rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is 3 to 6 feet below the surface. The available water capacity is very high. Organic matter content is moderately low.

This soil is used mainly for cultivated crops. In some areas, it is used as pastureland or woodland. This soil is well suited to cultivated crops, pasture, and hay. It is moderately well suited to woodland. This soil generally is not suited to use as sites for dwellings and septic tank absorption fields because of flooding.

In areas of this soil used for corn or soybeans, flooding occasionally delays planting and can cause crop damage. Returning crop residue to the soil or regularly adding other organic material helps to maintain soil tilth and improve soil fertility.

If this soil is used for pasture or hay, harvesting or grazing during wet periods or overgrazing reduces forage production and causes surface compaction and poor soil tilth. Proper stocking, rotation grazing, deferred grazing, and applying fertilizer and lime help to maintain the pasture and the soil.

Plant competition is a concern in managing this soil for timber production. Competition of undesirable vegetation can be reduced by chemical or mechanical means. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

This Arenzville soil is in capability subclass IIw.

81—Littleton silt loam. This soil is nearly level and is somewhat poorly drained. It is on alluvial fans and stream terraces. This soil is subject to rare flooding. The areas of this soil are irregular in shape and range from 3 to 495 acres.

Typically, the surface layer is black, friable silt loam about 10 inches thick. The subsurface layer to a depth of about 36 inches is friable silt loam. The upper part is black, and the lower part is very dark grayish brown and is mottled. The subsoil to a depth of 60 inches or more is mottled dark grayish brown and dark brown, friable silt loam. In some areas, the subsurface layer is thinner, and in others, the subsoil has more clay. In some places, a seasonal high water table is more than 3 feet below the surface.

Included with this soil in mapping are small areas of Worthen soils in slightly higher positions on the landscape. They make up 1 to 5 percent of the map unit.

Water and air move through the Littleton soil at a moderate rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is 1 foot to 3 feet below the surface. The available water capacity is very high. Organic matter content is moderate.

This soil is used mainly for cultivated crops and is well suited to this use. It generally is not suited to use as sites for dwellings because of rare flooding. It is poorly suited to use as sites for septic tank absorption fields.

No major limitations affect the use of this soil for corn, soybeans, or small grains. The seasonal high water table can delay planting in some years. Subsurface tile drains function satisfactorily if suitable outlets are available. Conservation tillage helps to maintain tilth and fertility.

The seasonal high water table and the moderate permeability limit the use of this soil as sites for septic tank absorption fields. Subsurface tile drains can lower the water table. Increasing the size of the absorption field or replacing the soil with more permeable material helps to overcome problems caused by the moderate permeability.

This Littleton soil is in capability class I.

87B—Dickinson fine sandy loam, 1 to 5 percent slopes. This soil is gently sloping and is well drained. It is on stream terraces. The areas of this soil are irregular in shape and range from 3 to 195 acres.

Typically, the surface layer is very dark grayish brown, friable fine sandy loam about 12 inches thick. The subsurface layer to a depth of about 20 inches is dark brown, friable fine sandy loam. The subsoil extends to a depth of about 48 inches. The upper part is brown, friable sandy loam; the next part is dark yellowish brown, friable fine sandy loam; and the lower part is brown, very friable loamy sand. The underlying material to a depth of 60 inches or more is dark yellowish brown and yellowish brown, loose sand. In some areas, the subsoil has more clay. In some areas, a seasonal high water table is within a depth of 6 feet.

Included with this soil in mapping are small areas of the Gilford, Hoopeston, and Sparta soils. Gilford and Hoopeston soils are in lower positions than those of the Dickinson soil. Gilford soils are very poorly drained, and Hoopeston soils are somewhat poorly drained. Sparta soils are in slightly higher positions and are excessively drained. The included soils make up 1 to 10 percent of the map unit.

Water and air move through the upper part of the Dickinson soil at a moderately rapid rate and through the lower part at a rapid rate. In cultivated areas, surface runoff is medium. The available water capacity is moderate. Organic matter content is moderately low.

This Dickinson soil is used for cultivated crops. It is well suited to cultivated crops and to use as sites for dwellings. This soil is poorly suited to use as sites for septic tank absorption fields.

If this soil is used for corn, soybeans, or small grains, water erosion and soil blowing are hazards. Also, the moderate available water capacity and the level of fertility are limitations. Erosion can be controlled and moisture conserved by using conservation tillage, contour farming, or terracing. Field windbreaks and a tillage system that leaves the surface rough help to control soil blowing.

If this soil is used as sites for septic tank absorption fields, ground water contamination is a hazard. A septic

system can function satisfactorily if a sealed sand filter and a disinfection tank or evapotranspiration bed are installed.

This Dickinson soil is in capability subclass IIe.

88B—Sparta loamy sand, 1 to 7 percent slopes. This soil is gently sloping and is excessively drained. It is on stream terraces. The areas of this soil are irregular in shape and range from 3 to 525 acres.

Typically, the surface layer is very dark grayish brown, very friable loamy sand about 10 inches thick. The subsurface layer to a depth of about 17 inches is very dark grayish brown, very friable loamy sand. The subsoil extends to a depth of about 39 inches. It is very friable. The upper part of the subsoil is brown loamy sand, the next part is dark yellowish brown loamy sand, and the lower part is yellowish brown sand. The underlying material to a depth of 60 inches or more is yellowish brown, loose sand. In some areas, this soil does not have a subsurface layer and has a surface layer that is lighter in color.

Included with this soil in mapping are small areas of the Dickinson, Gilford, Orio, and Watseka soils. Dickinson soils are in slightly lower positions than those of the Sparta soil and are well drained. Gilford and Watseka soils are in flatter areas. Gilford soils are very poorly drained, and Watseka soils are somewhat poorly drained. Orio soils are in shallow depressions and are poorly drained. The included soils make up 2 to 10 percent of the map unit.

Water and air move through the Sparta soil at a rapid rate. In cultivated areas, surface runoff is slow. The available water capacity is low. Organic matter content is moderately low.

This Sparta soil is used mainly for cultivated crops, but it is poorly suited to this use. It is well suited to use as sites for dwellings and poorly suited to use as sites

107—Sawmill silty clay loam, frequently flooded. This soil is nearly level and is poorly drained. It is on flood plains and is flooded for long periods from March to June. In a few places, it is flooded for only brief periods. The areas of this soil are linear or irregular in shape and range from 3 to 930 acres.

Typically, the surface layer is black, friable silty clay loam about 10 inches thick. The subsurface layer to a depth of about 29 inches is friable silty clay loam that is very dark gray and black in the upper part and very dark gray in the lower part. The subsoil extends to a depth of about 52 inches. It is mottled, friable silty clay loam that is dark gray and very dark gray in the upper part and dark gray in the lower part. The underlying material to a depth of 60 inches or more is mottled gray and dark gray, friable silty clay loam. In some areas, the subsurface layer is thinner, and in others, the soil has more sand. In some places, a seasonal high water table is at a depth of more than 2 feet.

Included with this soil in mapping are small areas of Arenzville soils in slightly higher positions on the landscape. These soils are moderately well drained. They make up 1 to 5 percent of the map unit.

Water and air move through the Sawmill soil at a moderate rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is within a depth of 2 feet. The available water capacity is high. Organic matter content is high. The surface layer is compact and cloddy if this soil is plowed when too wet.

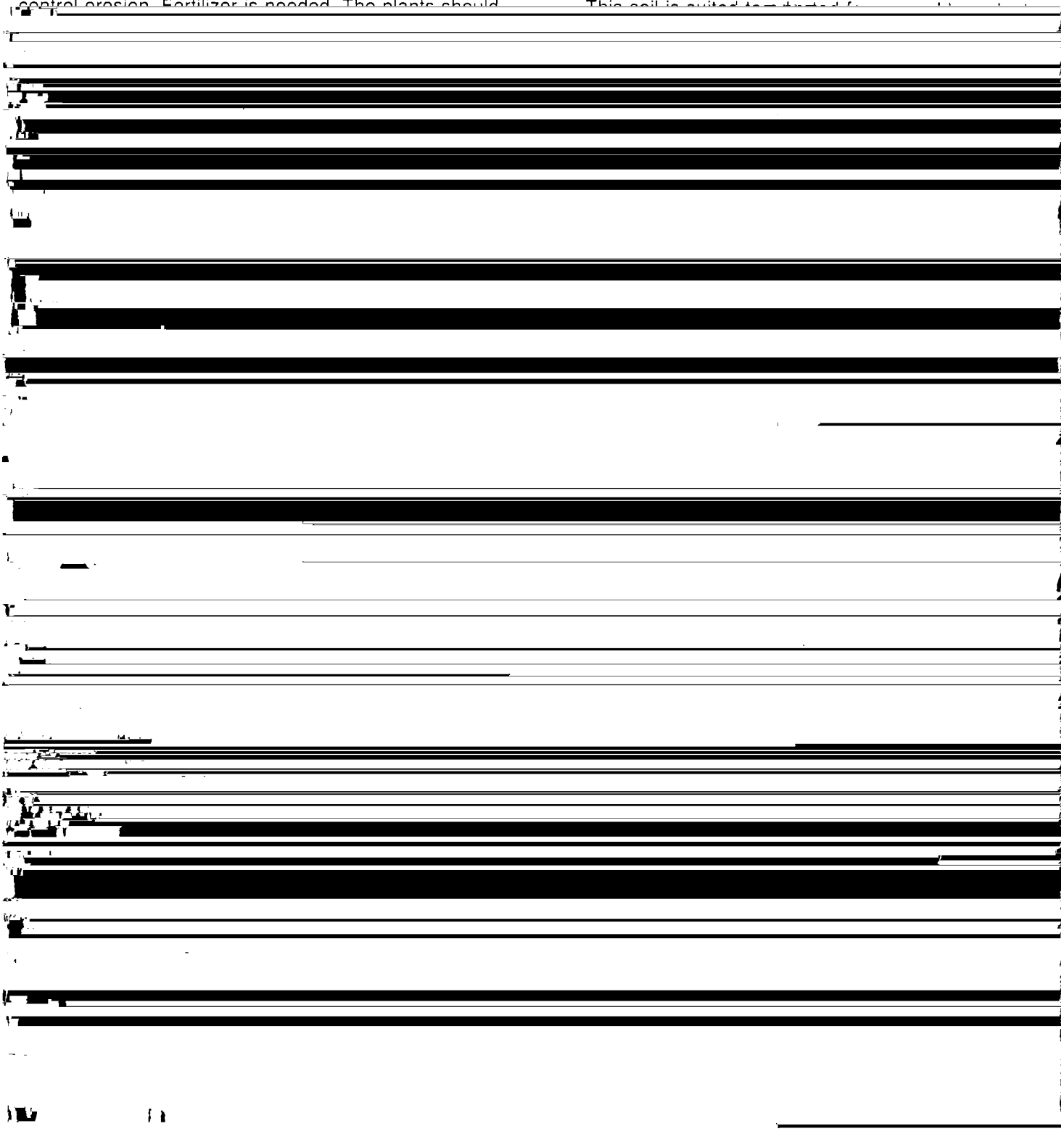
This Sawmill soil is used mainly for cultivated crops, but it is poorly suited to this use. This soil generally is not suited to use as sites for dwellings or septic tank absorption fields because of the flooding.

In the areas of this soil that are used for corn or soybeans, flooding frequently delays planting and occasionally damages the crop. Short-season crops are less likely to be damaged by flooding. This soil

overgrazing and thus also helps to prevent surface compaction, excessive runoff, and a greater susceptibility to water erosion. Tilling on the contour to prepare a seedbed or to renovate the pasture helps to control erosion. Fertilizer is needed. The plants should

stripcropping help to control water erosion. Forage crops should dominate the crop rotation. Returning crop residue to the soil and regularly adding other organic material help to maintain soil tilth and productivity.

This soil is suited to [illegible]



soils are very poorly drained. They make up 1 to 5 percent of the map unit.

Water and air move through the upper part of the

the sandy Sparta and Watseka soils. Sparta soils are in higher positions than those of the Beardstown soil and are excessively drained. Watseka soils are in positions

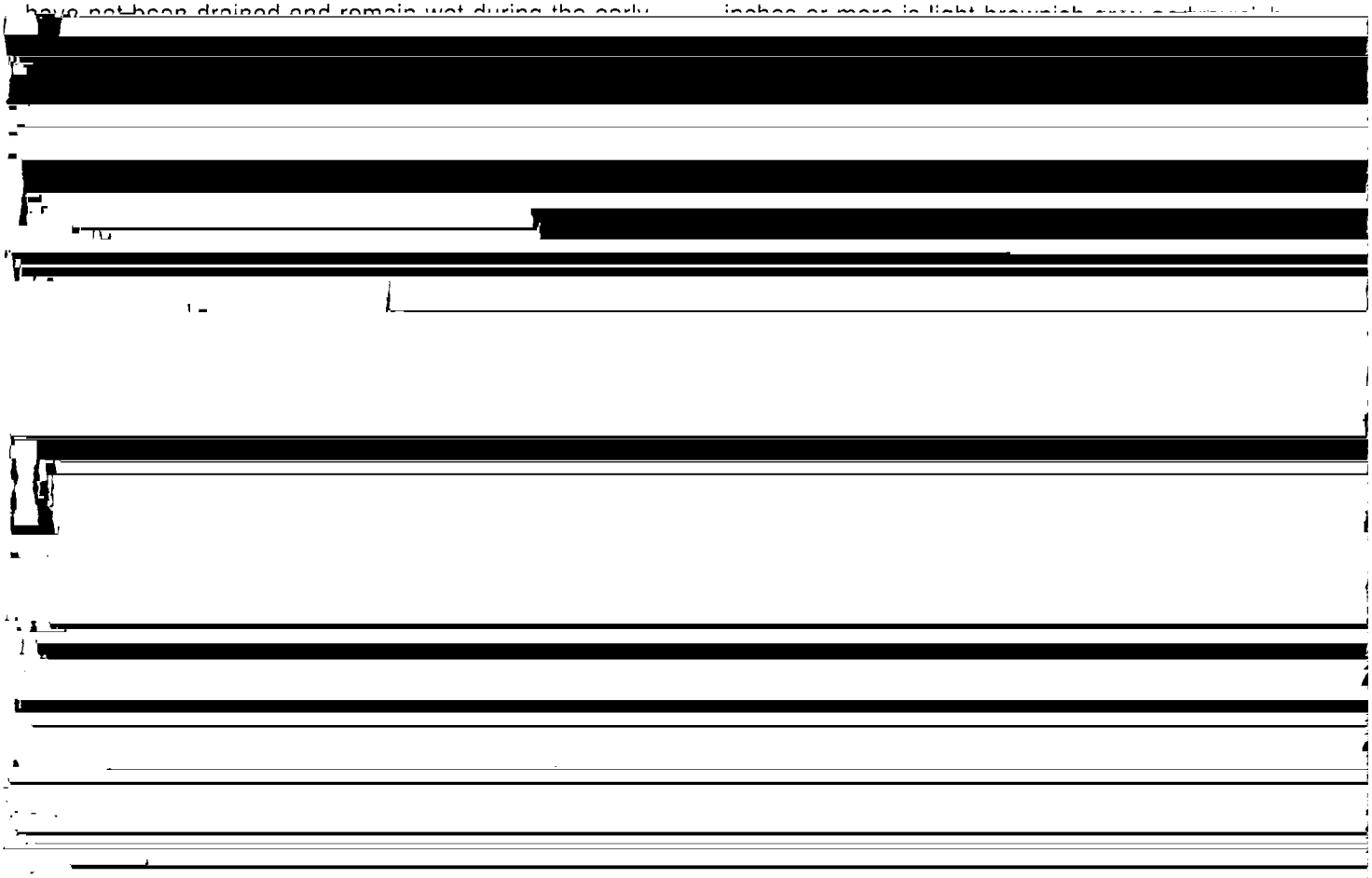
the lower part at a rapid rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is 1 foot to 3 feet below the surface. The available water capacity is moderate. Organic matter content is

soils make up 1 to 5 percent of the map unit.

Water and air move through the upper part of the Beardstown soil at a moderate or moderately slow rate and through the lower part at a moderately rapid rate. In

part of the subsoil has light brownish gray bands of loamy sand. The underlying material to a depth of 60 inches or more is dark gray, mottled, friable, stratified sandy loam and loam that has light brownish gray bands of loamy sand. In some areas, this soil has less clay throughout, and in others, the surface layer is thicker. In some places, the subsoil has less sand. In some areas, a seasonal high water table is more than 1 foot below the surface.

Included with this soil in mapping are small areas of soils in positions similar to those of the Orio soil that have not been drained and remain wet during the early



part of the growing season. They make up 1 to 5 percent of the map unit.

Water and air move through the Orio soil at a moderate or moderately slow rate. In cultivated areas, surface runoff is very slow to ponded. In spring, a seasonal high water table is 0.5 foot above the surface to 1 foot below. The available water capacity is high. Organic matter content is moderately low.

This Orio soil is used mainly for cultivated crops and is well suited to this use. It is poorly suited to use as sites for dwellings and septic tank absorption fields.

If this soil is drained, it can be used for corn, soybeans, or small grains. A drainage system has been

to May. The areas of this soil are irregular in shape and range from 3 to 245 acres.

Typically, the surface layer is black, friable sandy loam about 10 inches thick. The subsurface layer to a depth of about 18 inches is very dark grayish brown, mottled, friable sandy loam. The subsoil to a depth of about 31 inches is mottled sandy loam. The upper part is grayish brown and is friable. The lower part is gray and dark gray and is very friable. The underlying material is mottled and very friable. The upper part is dark gray loamy sand. The lower part to a depth of 60 inches or more is light brownish gray

brown, stratified loamy sand and sand. In some areas, the subsurface layer is thicker, and in others, the subsoil has more clay. In some places, the subsoil has less clay.

Included with this soil in mapping are small areas of the Hoopeston, Watseka, and Sparta soils in higher positions on the landscape. Hoopeston and Watseka soils are somewhat poorly drained, and Watseka soils are excessively drained. The included soils make up 2 to 10 percent of the map unit.

Water and air move through the upper part of the Gilford soil at a moderately rapid rate and through the lower part at a rapid rate. In cultivated areas, surface

disinfection tank or an evapotranspiration bed are installed.

This Gilford soil is in capability subclass IIw.

206—Thorp silt loam. This soil is nearly level and is poorly drained. It is in shallow depressions on stream terraces. This soil is occasionally ponded from March to June. The areas of this soil are irregular in shape and range from 3 to 40 acres.

Typically, the surface layer is very dark gray, friable silt loam about 11 inches thick. The subsurface layer to a depth of about 19 inches is mottled light brownish gray and grayish brown, friable silt loam. The subsoil extends to a depth of 60 inches or more and is mottled. In sequence downward, it is dark grayish brown, friable silty clay loam; dark gray and gray, firm silty clay loam; grayish brown and light brownish gray, firm silty clay loam; and light brownish gray, friable loam. In some areas, the surface layer is thinner, and in others, the subsoil has more clay. In some places, this soil has more sand in the upper part of the profile.

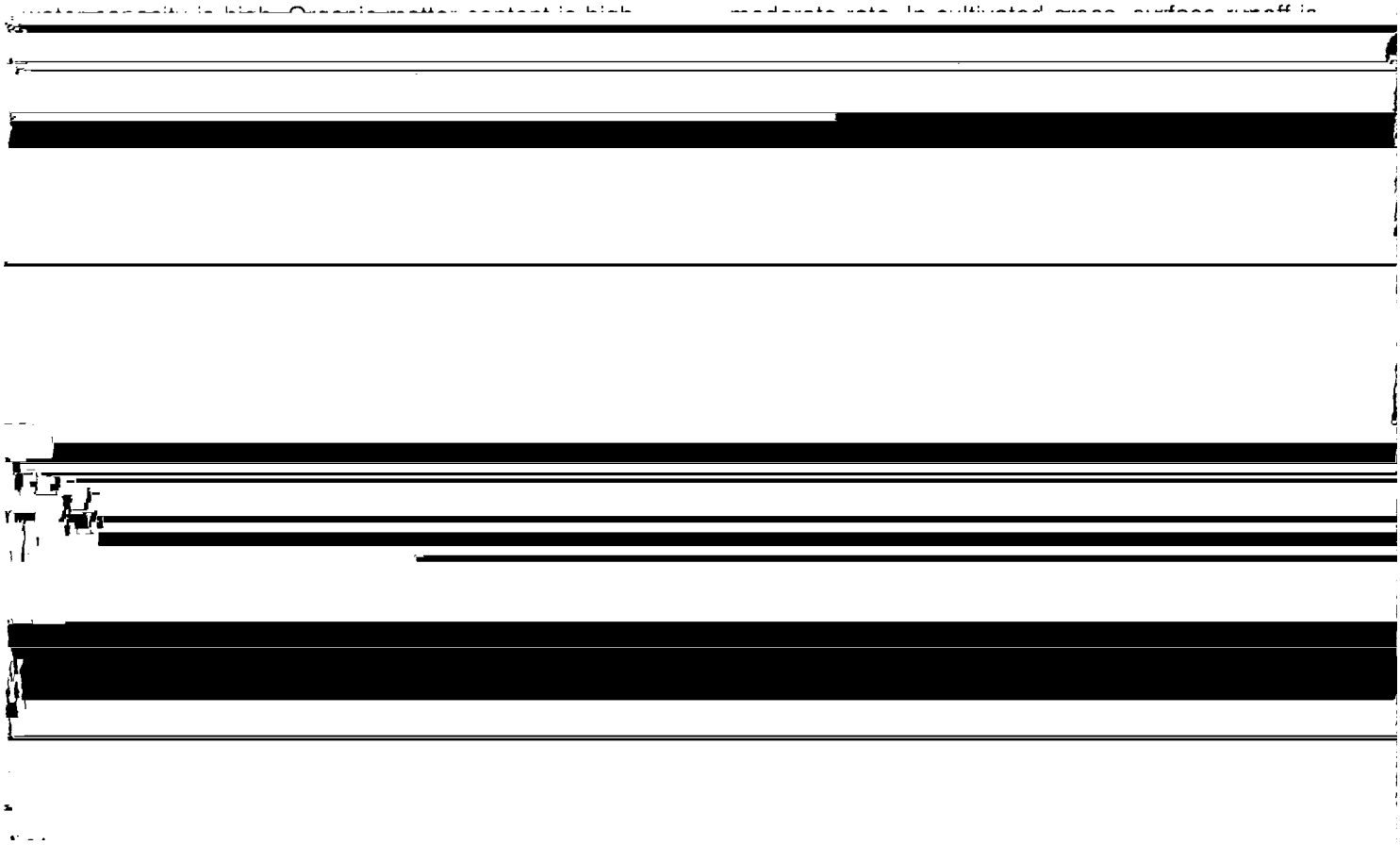
Water and air move through the Thorp soil at a slow rate. In cultivated areas, surface runoff is slow to ponded. In spring, a seasonal high water table is 0.5 foot above the surface to 2 feet below. The available water capacity is high. Organic matter content is high

244—Hartsburg silty clay loam. This soil is nearly level and is poorly drained. It is on broad upland flats. This soil is occasionally ponded for brief periods from March to June. The areas of this soil are irregular in shape and range from 3 to 5,280 acres.

Typically, the surface layer is black, friable silty clay loam about 6 inches thick. The subsurface layer to a depth of 13 inches is black, friable silty clay loam. The subsoil to a depth of about 40 inches is mottled and friable. In sequence downward, it is very dark gray silty clay loam; dark grayish brown, calcareous silty clay loam; dark grayish brown, olive brown, and strong brown, calcareous silty clay loam; grayish brown, calcareous silty clay loam; and grayish brown, calcareous silt loam. The underlying material to a depth of 60 inches or more is grayish brown, mottled, friable, calcareous silt loam. In some areas, the depth to free carbonates is more than 35 inches. In some areas, a seasonal high water table is more than 2 feet below the surface.

Included with this soil in mapping are small areas of Tama soils on slight rises. These soils are moderately well drained and well drained. They make up 1 to 5 percent of the map unit.

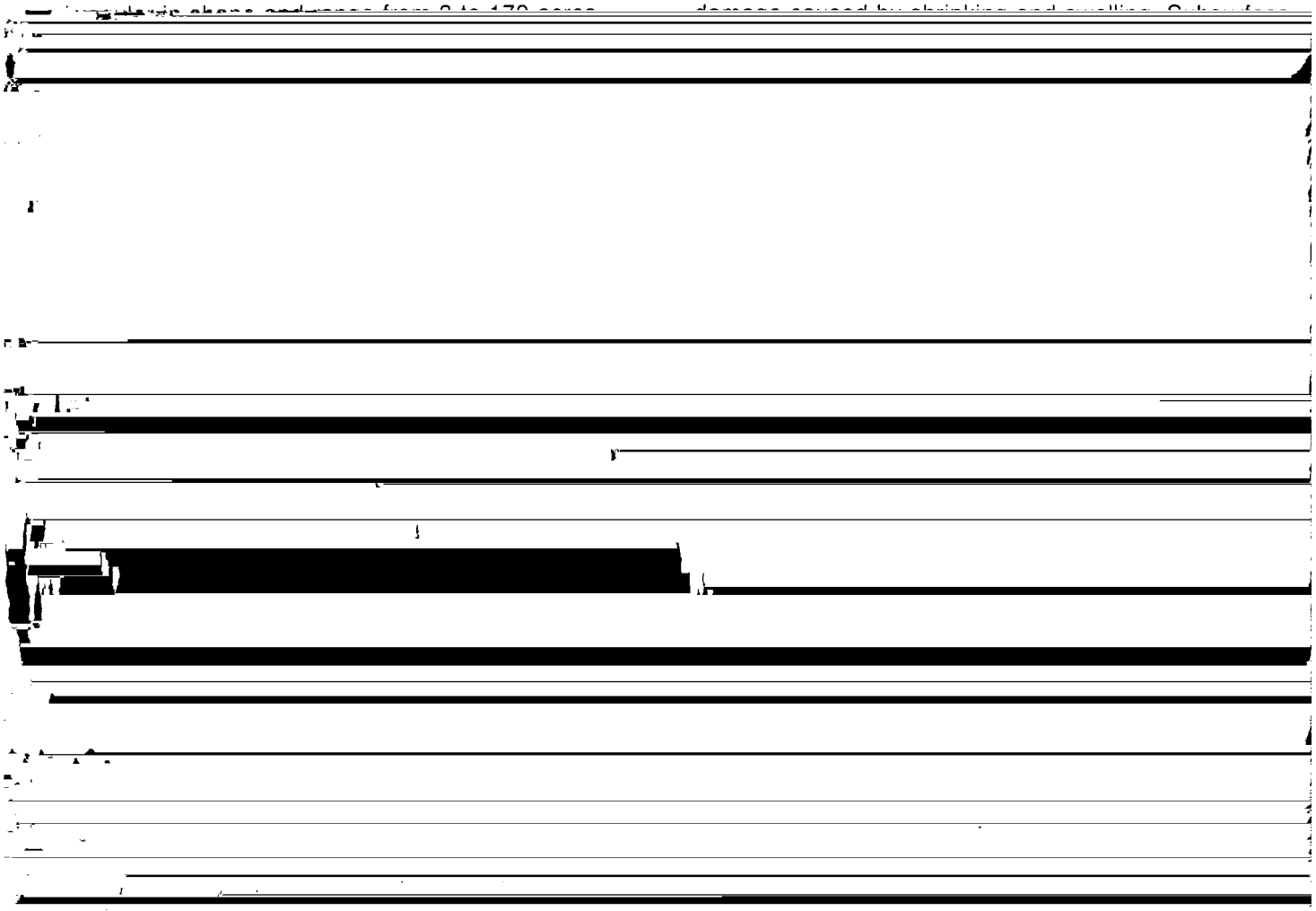
Water and air move through the Hartsburg soil at a moderate rate. In cultivated areas, surface runoff is



increased by adding as much as 2 feet of loamy fill material on the surface. Subsurface tile drains can lower the water table. A septic system can function satisfactorily if a sealed sand filter and disinfection tank or evapotranspiration bed are installed.

This Hartsburg soil is in capability subclass IIw.

279A—Rozetta silt loam, 0 to 2 percent slopes. This soil is nearly level and is moderately well drained. It is on upland flats and ridges. The areas of this soil



Typically, the surface layer is dark grayish brown, friable silt loam about 10 inches thick. The subsurface layer to a depth of about 15 inches is dark brown, friable silt loam. The subsoil extends to a depth of about 50 inches. The upper part is dark yellowish brown, firm silty clay loam; the next part is yellowish brown, firm silty clay loam; and the lower part is yellowish brown, mottled, friable silt loam. The underlying material to a depth of 60 inches or more is mottled brown, light brownish gray, and strong brown, friable silt loam. In some areas, the surface layer is

prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

The moderate shrink-swell potential limits the use of this soil as sites for dwellings. The seasonal high water table is a limitation on sites for dwellings with basements. Extending the footings below the subsoil or reinforcing the foundation helps to prevent the structural

tile drains near the foundation can lower the water table on sites for dwellings with basements.

The seasonal high water table and the moderate permeability are limitations if this soil is used as sites for septic tank absorption fields. Subsurface tile drains can lower the water table. Increasing the size of the absorption field or replacing the soil with more permeable material helps to overcome the moderate permeability.

This Rozetta soil is in capability class I.

dwellings and septic tank absorption fields.

In the areas of this soil that are used for corn, soybeans, or small grains, water erosion is a hazard. Erosion can be controlled, however, by such practices as conservation tillage, contour farming, or terracing. Returning crop residue to the soil or regularly adding other organic material improves soil tilth and helps to maintain soil fertility.

This soil is suited to bromegrass, orchardgrass, tall fescue, and alfalfa. Overgrazing reduces forage yields, causes surface compaction and excessive runoff, and increases the susceptibility to erosion. Proper stocking, rotation grazing, deferred grazing, and fertilizing help to control erosion and to maintain the pasture and the soil.

Plant competition is a concern in managing this soil for timber production. Competition of undesirable vegetation can be reduced by chemical or mechanical means. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

The moderate shrink-swell potential limits the use of

yellowish brown, firm silt loam. In some areas, the surface layer is darker, and in others, the subsoil has more clay. In some places, this soil has a seasonal high water table within a depth of 6 feet.

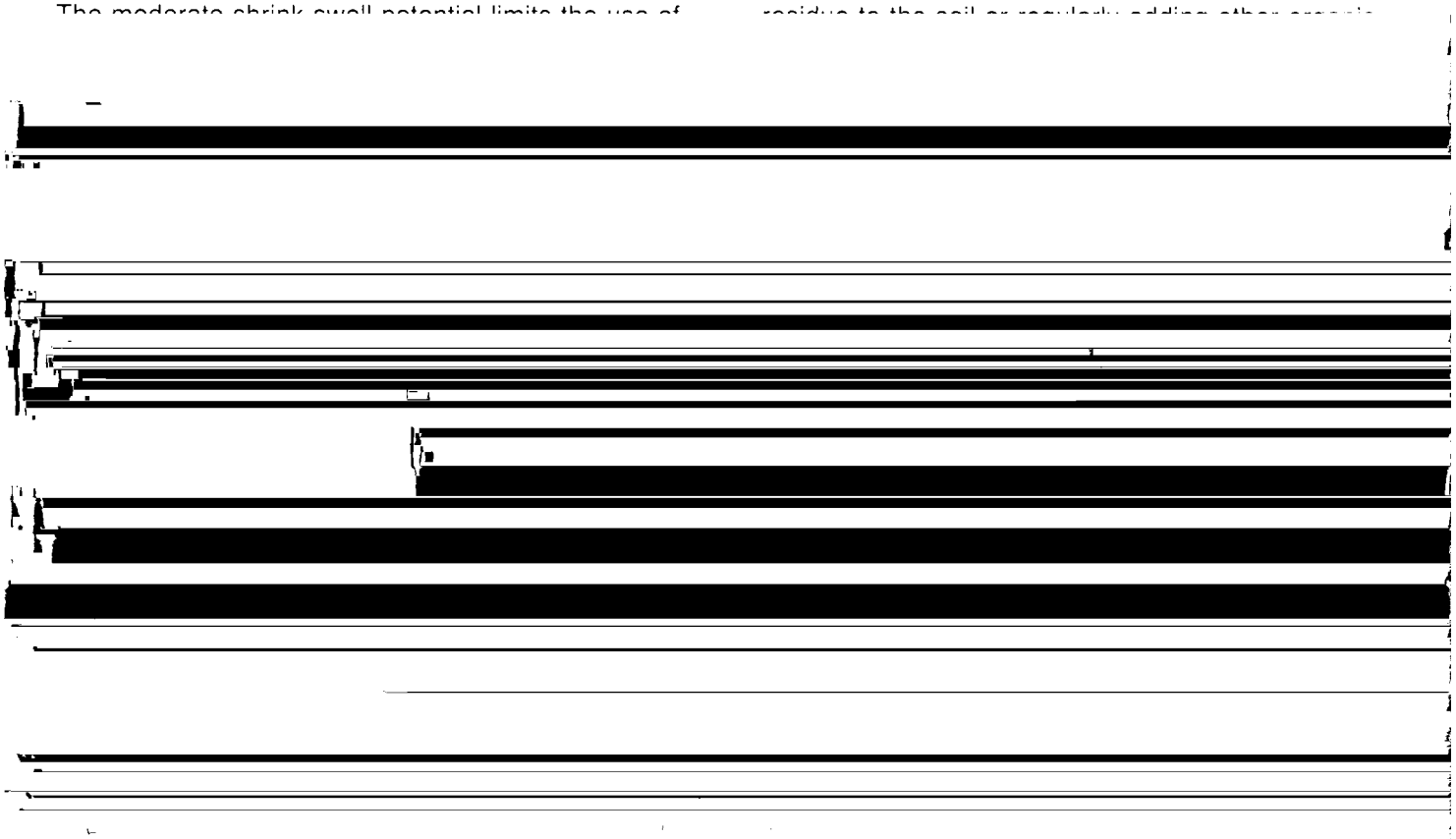
Included with this soil in mapping are small areas of Keomah soils on the less sloping parts of the landscape. These soils are somewhat poorly drained. They make up 1 to 5 percent of the map unit.

Water and air move through the Fayette soil at a moderate rate. In cultivated areas, surface runoff is medium. The available water capacity is very high. Organic matter content is moderately low. In cultivated areas, the surface layer tends to crust after hard rains. Shrink-swell potential is moderate.

This Fayette soil is used for cultivated crops. In some areas, it is used as pastureland or woodland. This soil is well suited to cultivated crops, pasture, hay, and woodland. It is moderately suited to use as sites for dwellings and septic tank absorption fields.

In areas of this soil that are used for corn, soybeans, or small grains, erosion is a hazard. Erosion can be controlled, however, by such practices as conservation tillage, contour farming, or terracing. Returning crop

residue to the soil or regularly adding other organic



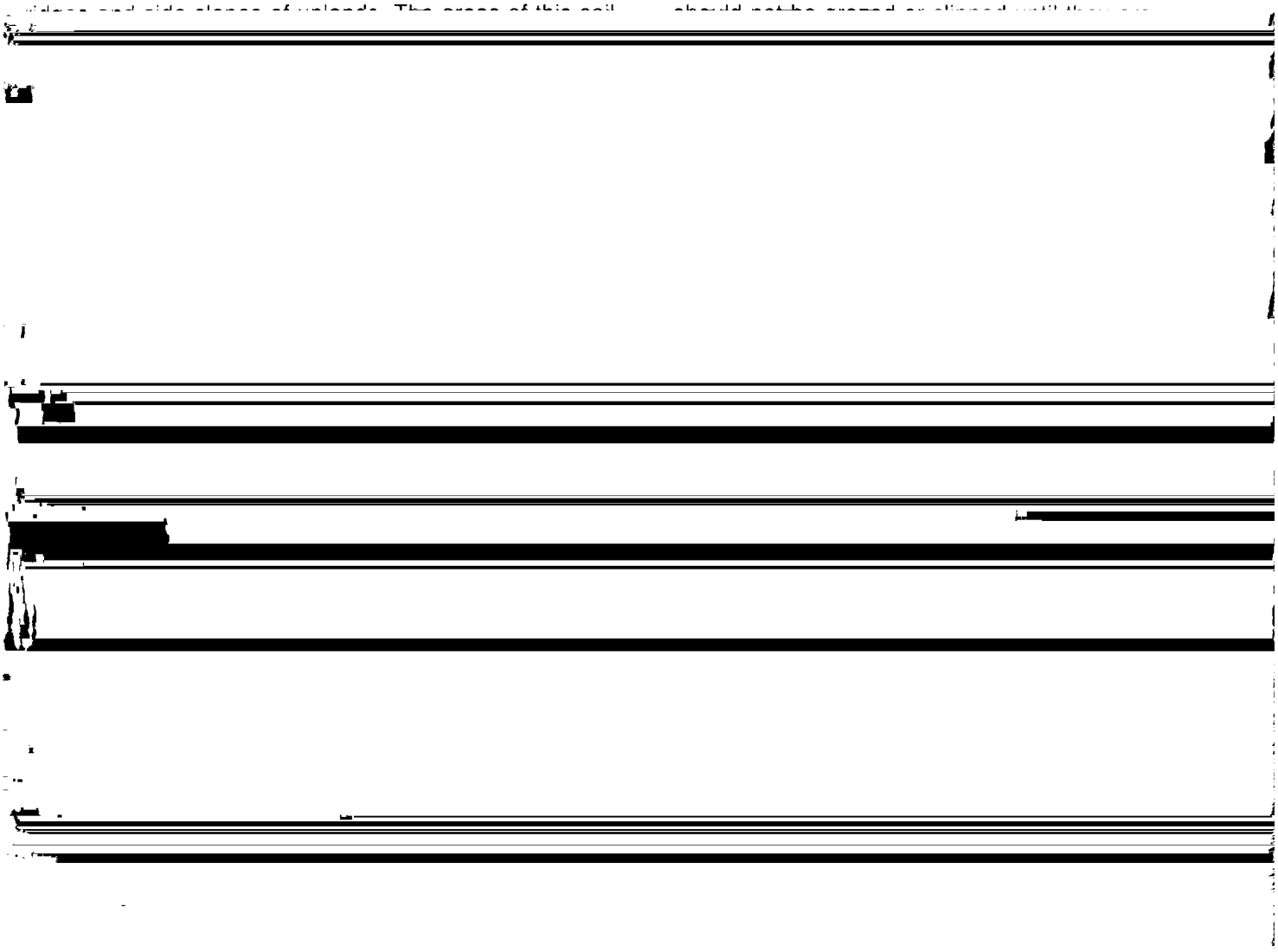
this soil as sites for dwellings. The seasonal high water table is a limitation on sites for dwellings with basements. Extending the footings below the subsoil or

material improves soil tilth and helps to maintain soil fertility.

This soil is suited to bromegrass, orchardgrass, tall

280C2—Favette silt loam, 5 to 10 percent slopes, eroded. This soil is sloping and is well drained. It is on

prepare a seedbed or to renovate the pasture also helps to control erosion. Fertilizer is needed. The plants



are linear or irregular in shape and range from 3 to 40 acres.

Typically, the surface layer is dark grayish brown, friable silt loam about 4 inches thick. Part of the original surface layer has been removed by erosion, and the remaining layer has some mixing of dark yellowish brown subsoil material. The subsoil to a depth of about 44 inches is friable. The upper part is dark yellowish brown silty clay loam, the next part is dark yellowish brown silt loam, and the lower part is yellowish brown silt loam. The underlying material to a depth of 60 inches or more is yellowish brown, friable, calcareous silt loam. In some of the more eroded areas, the surface layer is silty clay loam. In other areas, this soil

sufficiently established.

Plant competition is a concern in managing this soil for timber production. Competition of undesirable vegetation can be reduced by chemical or mechanical means. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

The moderate shrink-swell potential limits the use of this soil as sites for dwellings. Reinforcing the foundation helps to prevent structural damage caused by shrinking and swelling.

well suited to pasture, hay, and woodland. This soil is moderately suited to use as sites for dwellings and septic tank absorption fields.

Further erosion is a hazard if this soil is used for corn, soybeans, or small grains. Also, tilth is a limitation. Soil loss can be kept within tolerable limits by a crop rotation dominated by forage crops and by a combination of contour farming and conservation tillage. Stripcropping also helps to control erosion. Returning crop residue to the soil and regularly adding other organic material help to maintain soil productivity, to prevent crusting, and to improve soil tilth.

This soil is suited to adapted forage and hay plants, such as bromegrass, orchardgrass, tall fescue, and alfalfa. Timely deferment of grazing helps to prevent overgrazing and thus also helps to prevent surface compaction, excessive runoff, and a greater susceptibility to erosion. Tilling on the contour to prepare a seedbed or to renovate the pasture also helps to control erosion. Fertilizer is needed. The plants should not be grazed or clipped until they are sufficiently established.

Plant competition is a concern in managing this soil for timber production. Competition of undesirable vegetation can be reduced by chemical or mechanical means. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire

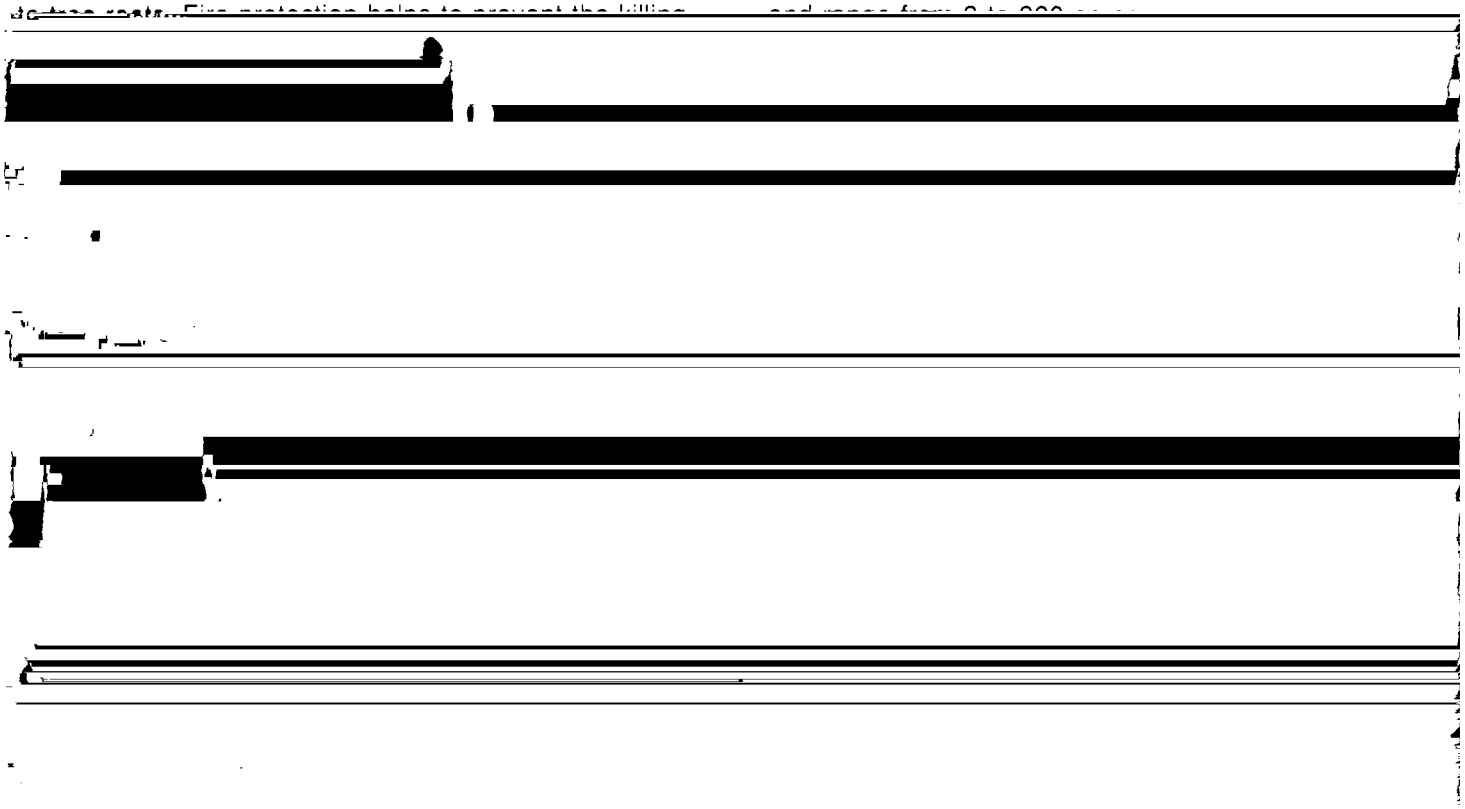
Typically, the surface layer is very dark grayish brown, friable silt loam about 4 inches thick. The subsurface layer to a depth of about 12 inches is friable silt loam that is dark grayish brown in the upper part and dark yellowish brown in the lower part. The subsoil to a depth of about 56 inches is friable. The upper part is dark yellowish brown silty clay loam, the next part is dark yellowish brown and yellowish brown silty clay loam, and the lower part is yellowish brown silt loam. The underlying material to a depth of 60 inches or more is yellowish brown, friable silt loam. In some areas, this soil has less clay, and in others it has more sand. In some places, this soil is calcareous within a depth of 40 inches.

Included with this soil in mapping are small areas of Arenzville and Bold soils. Arenzville soils are in drainageways and are moderately well drained. Bold soils are on side slopes at a lower elevation than the Fayette soil and are calcareous. The included soils make up 5 to 10 percent of the map unit.

Water and air move through the Fayette soil at a moderate rate. Surface runoff is rapid. The available water capacity is very high. Organic matter content is moderately low.

This Fayette soil is used mainly as woodland or pastureland. It is moderately suited to pasture and hay and moderately well suited to woodland. Because of the steepness of slope, this soil generally is not suited to cultivated crops or to use as sites for dwellings and

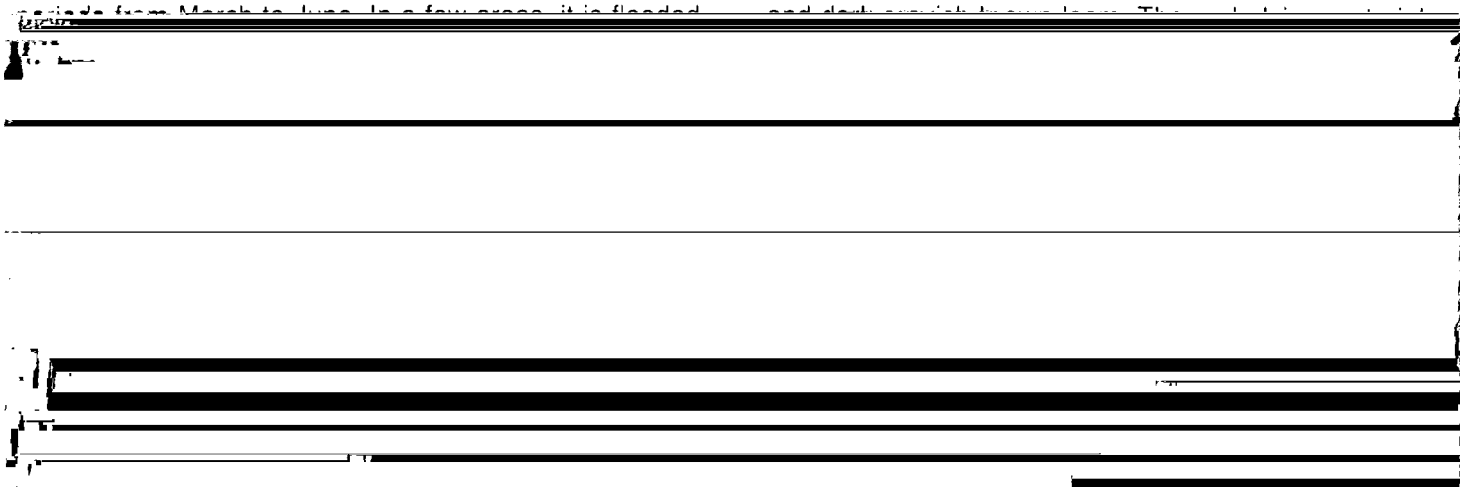
of undesirable vegetation can be reduced by chemical or mechanical means. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing



or permanent injury to trees and the destruction of the leaf mulch.

This Fayette soil is in capability subclass VIe.

284—Tice silty clay loam, frequently flooded. This soil is nearly level and is somewhat poorly drained. It is on flood plains and is frequently flooded for long periods from March to June. In a few areas, it is flooded



302—Ambraw clay loam, frequently flooded. This soil is nearly level and is poorly drained. It is on flood plains and is frequently flooded for long periods from March to June. In a few areas, it is flooded for only brief periods. The areas of this soil are irregular in shape and range from 3 to 200 acres.

Typically, the surface layer is black, firm clay loam about 13 inches thick. The subsurface layer to a depth of about 17 inches is very dark gray, friable clay loam. The subsoil to a depth of about 44 inches is mottled and friable. The upper part is dark grayish brown clay loam, the next part is dark grayish brown and grayish brown clay loam, and the lower part is grayish brown and dark grayish brown loam. The substratum is

brown, friable fine sandy loam about 14 inches thick. The subsoil extends to a depth of about 36 inches. In sequence downward, it is dark brown, friable loam; brown, friable loam; brown, friable fine sandy loam; brown and dark yellowish brown, very friable fine sandy loam; and dark yellowish brown and brown, very friable loamy sand. The underlying material to a depth of 60 inches is yellowish brown, loose sand. In some areas, the upper part of the subsoil is darker. In some places, this soil has more clay throughout the profile, and in others, it has less sand throughout.

Included with this soil in mapping are small areas of the Ambraw and Sparta soils. Ambraw soils are in lower positions than those of the Landes soil and are poorly drained. Sparta soils are in higher positions and are excessively drained. The included soils make up 1 to 10 percent of the map unit.

Water and air move through the upper part of the Landes soil at a moderately rapid rate and through the lower part at a rapid rate. In cultivated areas, surface runoff is slow. The available water capacity is moderate. Organic matter content is moderately low.

This Landes soil is used mainly for cultivated crops and is moderately suited to this use. It generally is not [illegible] for dwellings and septic tank

Littleton soils in lower positions on the landscape. These soils are somewhat poorly drained. They make up 1 to 5 percent of the map unit.

Water and air move through the Raddle soil at a moderate rate. In cultivated areas, surface runoff is medium. The available water capacity is very high. Organic matter content is moderate.

This Raddle soil is used mainly for cultivated crops and is well suited to this use. This soil is also well suited to use as sites for dwellings and septic tank absorption fields.

In areas of this soil that are used for corn, soybeans, or small grains, erosion is a hazard. Erosion can be controlled, however, by such practices as conservation tillage, contour farming, or terracing (fig. 8). Returning crop residue to the soil or regularly adding other organic material helps to maintain soil tilth and fertility.

This Raddle soil is in capability subclass IIe.

430C—Raddle silt loam, 5 to 10 percent slopes. This soil is sloping and is well drained. It is on alluvial fans, foot slopes, and stream terraces. The areas of this soil are linear or irregular in shape and range from 3 to 45 acres.

Typically, the surface layer is very dark grayish

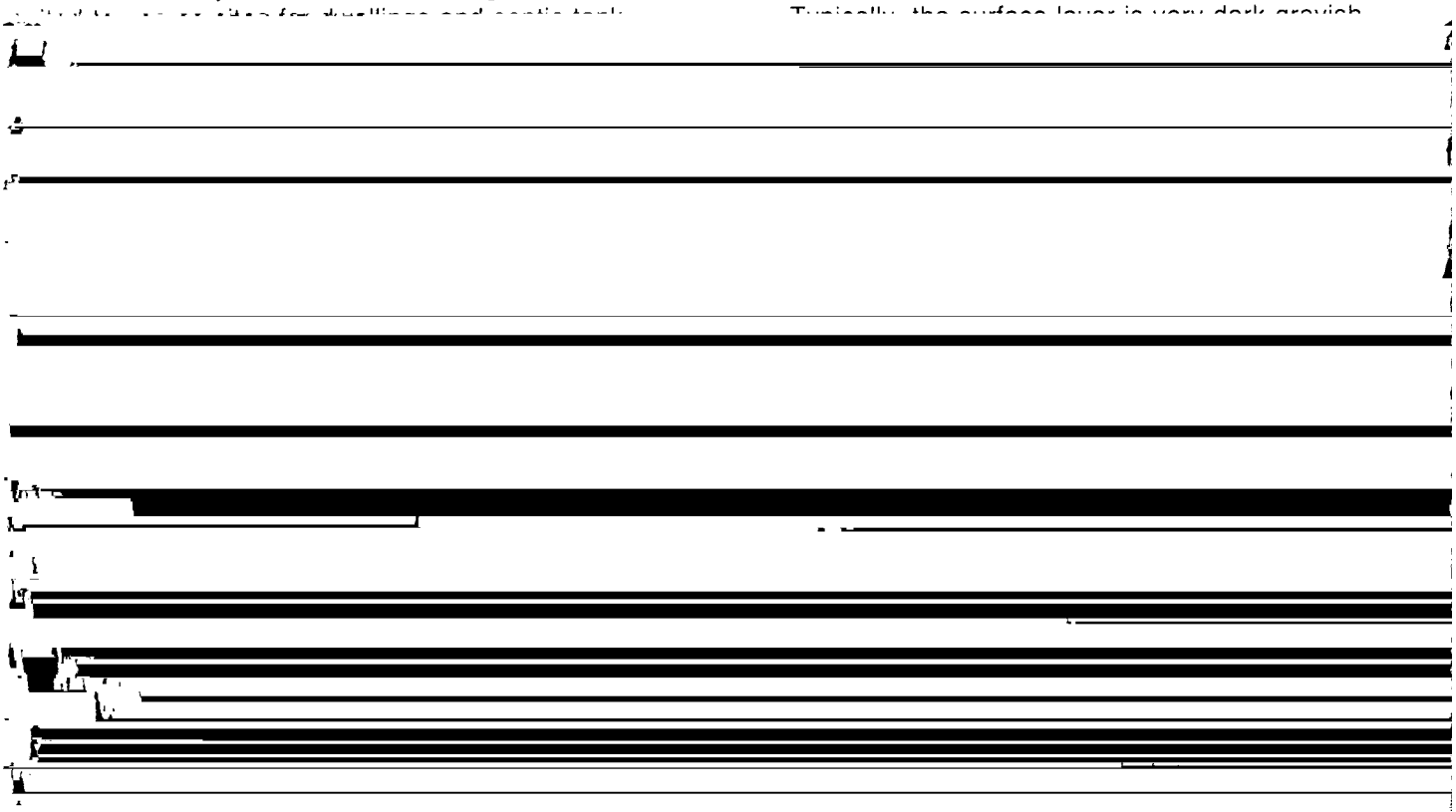


Figure 8.—Leaving crop residue on the surface helps to control erosion and to maintain the tilth and fertility in Raddle silt loam, 2 to 5 percent slopes.

This soil is suited to adapted forage and hay plants, such as bromegrass, orchardgrass, tall fescue, and alfalfa. Timely deferment of grazing helps to prevent overgrazing and thus also helps to prevent surface compaction, excessive runoff, and a greater susceptibility to erosion. Tilling on the contour to prepare a seedbed or to renovate the pasture also helps to control erosion. Fertilizer is needed. The plants should not be grazed or clipped until they are sufficiently established.

This Raddle soil is in capability subclass IIIe.

451—Lawson silt loam, frequently flooded. This soil is nearly level and is somewhat poorly drained. It is on flood plains and is frequently flooded for brief periods from March to June. In a few places, it is flooded for long periods. The areas of this soil are linear or irregular in shape and range from 3 to 235 acres.

Typically, the surface layer is very dark gray, friable silt loam about 9 inches thick. The subsurface layer to a depth of about 27 inches is very dark grayish brown, friable silt loam. The underlying material to a depth of 60 inches or more is mottled, friable silt loam. The upper part is very dark grayish brown, and the lower part is very dark gray. In some areas, this soil has more clay throughout the profile, and in others, it has more sand. In some places, a seasonal high water table is within a depth of 1 foot.

Water and air move through the Lawson soil at a moderate rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is 1 foot to 3 feet below the surface. The available water capacity is very high. Organic matter content is moderate.

This Lawson soil is used mainly for cultivated crops

776—Comfrey clay loam, frequently flooded. This soil is nearly level and is poorly drained. It is on flood plains and is frequently flooded for long periods from March to June. In a few places, it is flooded for only brief periods. The areas of this soil are linear or irregular in shape and range from 3 to 205 acres.

Typically, the surface layer is black, friable clay loam about 7 inches thick. The subsurface layer to a depth of about 30 inches is friable clay loam. The upper part is black, and the lower part is mottled black and very dark

The areas are linear and range from 3 to 160 acres.

Typically, the Seaton soil has a dark brown, friable silt loam surface layer about 5 inches thick. The subsurface layer to a depth of about 13 inches is brown, friable silt loam. The subsoil to a depth of at least 60 inches is friable silt loam that is yellowish brown in the upper part and brown in the lower part. In some areas, the subsoil has more clay, and in others, it has more sand.

Typically, the Timula soil has a dark brown, friable

cable and winch also helps. Because of the hazard of erosion, grass firebreaks are needed. Seeding all bare areas to grass or to a grass-legume mixture after completion of logging operations also helps to control erosion. Use of machinery should be limited to periods when the soil is firm enough to support the equipment. Seedling mortality can be reduced if all vegetation within 2 feet of the existing or planted seedlings is eliminated and if older and larger stock is planted. Competition of undesirable vegetation can be reduced by chemical or mechanical means. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

These Seaton and Timula soils are in capability subclass VIe.

Arenzville soils are moderately well drained, and Radford soils are somewhat poorly drained. The included soils make up 2 to 10 percent of the map unit.

Water and air move through the Seaton and Timula soils at a moderate rate. Surface runoff is rapid. The available water capacity is very high. Organic matter content is moderately low.

These soils are used mainly as woodland. In some areas, they are used for pasture. These soils are poorly suited to pasture and moderately suited to woodland. They generally are not suited to cultivated crops or to use as sites for dwellings and septic tank absorption fields because of the very steep slope.

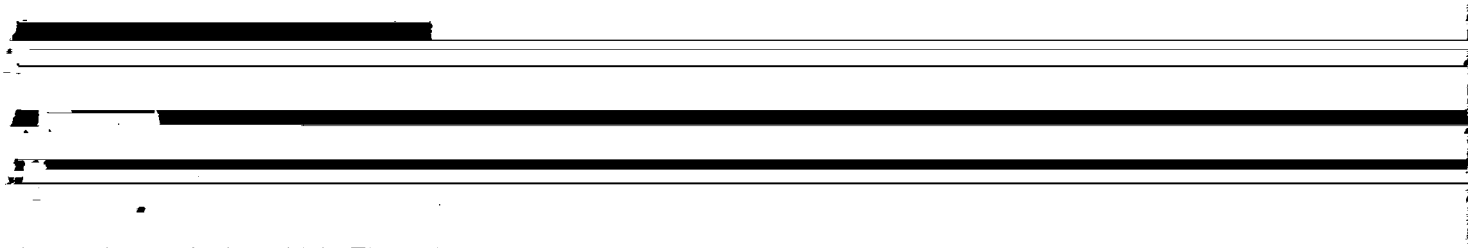
These soils are suited to bromegrass, orchardgrass, [redacted] however, water erosion is a major hazard. Because large machinery generally cannot cross the short, very steep slopes, the only methods of seeding, fertilizing, and spraying are by airplane and by hand. Ground cover is essential to control water erosion. Proper stocking, deferred grazing,

Over most of the area, the original surface layer has been removed by water erosion and tillage has mixed the rest with the upper part of the subsoil or the underlying material. The Sylvan soil is at a higher elevation than the Bold soil. This map unit is about 55 to 60 percent Sylvan soil and 35 to 40 percent Bold soil. The areas of these soils are too small to be mapped separately at the selected scale. The areas are linear and range from 3 to 115 acres.

Typically, the Sylvan soil has a mixed brown and very dark gravish brown, friable silty clay loam surface

adding other organic material improves soil tilth and fertility and increases the rate of water intake.

These soils are suited to adapted forage and hay plants, such as bromegrass, orchardgrass, tall fescue, and alfalfa. Timely deferment of grazing helps to prevent overgrazing and thus helps to prevent surface compaction, excessive runoff, and a greater susceptibility to erosion. Tilling on the contour to prepare a seedbed or to renovate the pasture also helps to control erosion. Fertilizer is needed. The plants should not be grazed or clipped until they are



layer about 6 inches thick. The subsoil to a depth of about 30 inches is yellowish brown and is friable. The upper part is silty clay loam, the next part is silt loam, and the lower part is silt loam and is mottled. The underlying material to a depth of 60 inches or more is mottled light brownish gray and yellowish brown, friable, calcareous silt loam. In some areas, the subsoil has less clay, and in others, carbonates are at a depth of more than 40 inches.

Typically, the Bold soil has a mixed brown and dark brown, friable silt loam surface layer about 4 inches thick. The underlying material to a depth of 60 inches or more is friable, calcareous silt loam. The upper part is brownish yellow, and the lower part is mottled light brownish gray and yellowish brown. In some areas, this soil has less clay throughout the profile.

Included with these soils in mapping are small areas of Arenzville and Radford soils in drainageways. Arenzville soils are moderately well drained, and Radford soils are somewhat poorly drained. The included soils make up 2 to 10 percent of the map unit.

Water and air move through the Sylvan and Bold

sufficiently established.

These Sylvan and Bold soils are in capability subclass IVe.

962D3—Sylvan-Bold complex, 10 to 15 percent slopes, severely eroded. These soils are strongly sloping and are well drained. They are on side slopes of uplands. Over most of the area, the original surface layer has been removed by water erosion and tillage has mixed the rest with the upper part of the subsoil or the underlying material. The Sylvan soil is at a higher elevation than the Bold soil. This map unit is about 50 to 60 percent Sylvan soil and 40 to 50 percent Bold soil. The areas of these soils are too small to be mapped separately at the selected scale. The areas are linear and range from 3 to 90 acres.

Typically, the Sylvan soil has a brown, friable silty clay loam surface layer about 8 inches thick. The subsoil to a depth of about 27 inches is yellowish brown and friable. The upper part is silty clay loam, and the lower part is silt loam. The underlying material to a depth of 60 inches or more is mottled, friable,

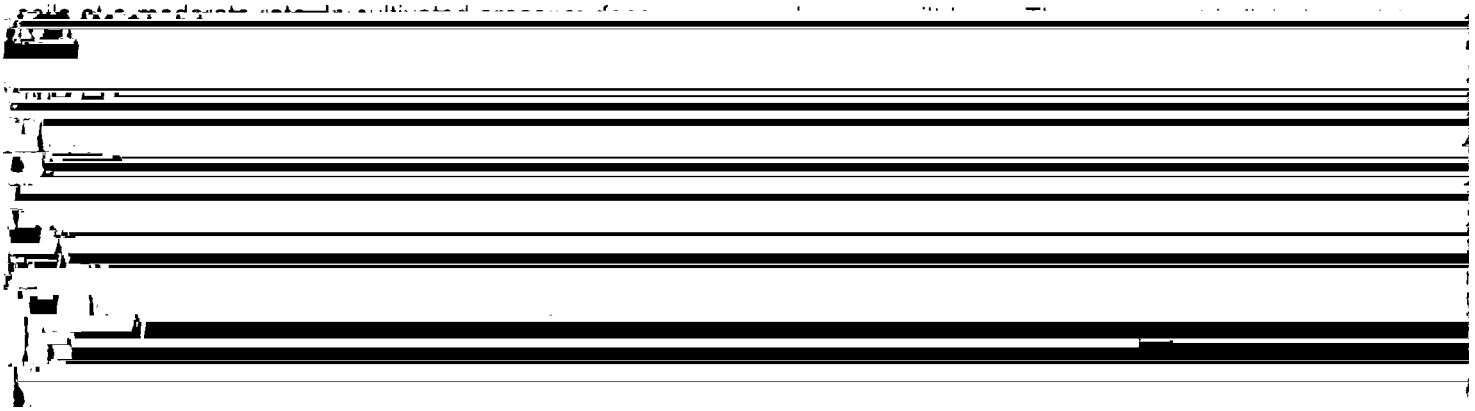


Figure 9.—Erosion is a major concern in areas of the Sylvan-Bold complex, 10 to 15 percent slopes, severely eroded.

soils at a moderate rate. In cultivated areas, surface runoff is rapid. The available water capacity is very high. Organic matter content is low. The surface layer can become compact and cloddy if these soils are plowed when too wet.

These soils are used mainly for cultivated crops. In some areas, they are used for pasture and hay. These soils are poorly suited to cultivated crops. They are moderately suited to pasture and hay and to use as sites for dwellings and septic tank absorption fields.

Further water erosion is a hazard if these soils are used for corn, soybeans, or small grains (fig. 9). Also, tilth is a limitation. Soil loss can be kept within tolerable limits by a crop rotation dominated by forage crops and by a combination of contour farming and conservation tillage. Stripcropping also helps to control erosion. Returning crop residue to the soil and regularly adding other organic material help to maintain soil productivity, to prevent crusting, and to improve soil tilth.

These soils are suited to adapted forage and hay plants, such as bromegrass, orchardgrass, tall fescue, and alfalfa. Timely deferment of grazing helps to prevent overgrazing and thus also helps to prevent surface compaction, excessive runoff, and a greater susceptibility to erosion. Tilling on the contour to prepare a seedbed or to renovate the pasture also helps to control erosion. Fertilizer is needed. The plants should not be grazed or clipped until they are sufficiently established.

Steepness of slope limits the use of these soils as sites for dwellings or septic tank absorption fields. Alteration of the slope by cutting, filling, and land

shaping helps to overcome this limitation on sites for dwellings. Filter lines should be installed on the contour to overcome the slope on sites for septic tank absorption fields.

These Sylvan and Bold soils are in capability subclass IVe.

962E2—Sylvan-Bold silt loams, 15 to 30 percent slopes, eroded. These soils are steep and are well drained. They are on side slopes of uplands. The Sylvan soil is at a higher elevation than the Bold soil. This map unit is about 50 to 55 percent Sylvan soil and 40 to 45 percent Bold soil. The areas of these soils are too small to be mapped separately at the selected scale. The areas are linear and range from 3 to 105 acres.

Typically, the Sylvan soil has a very dark grayish brown, friable silt loam surface layer about 3 inches thick. Part of the original surface layer has been removed by water erosion. The subsurface layer to a depth of about 6 inches is mixed dark grayish brown and dark brown, friable silt loam. The subsoil to a depth of about 28 inches is friable. The upper part is dark yellowish brown silty clay loam, and the lower part is yellowish brown, mottled silt loam. The underlying material to a depth of 60 inches or more is mottled, friable, calcareous silt loam. The upper part is light brownish gray and yellowish brown, and the lower part is light brownish gray. In some areas, this soil has less clay, and in other areas, it has more sand. The depth to carbonates is more than 40 inches in some areas.

Typically, the Bold soil has a dark brown, friable silt loam surface layer about 3 inches thick. Part of the original surface layer has been removed by water erosion. The underlying material to a depth of 60 inches or more is light brownish gray, mottled, friable, calcareous silt loam. In some places, this soil has less clay.

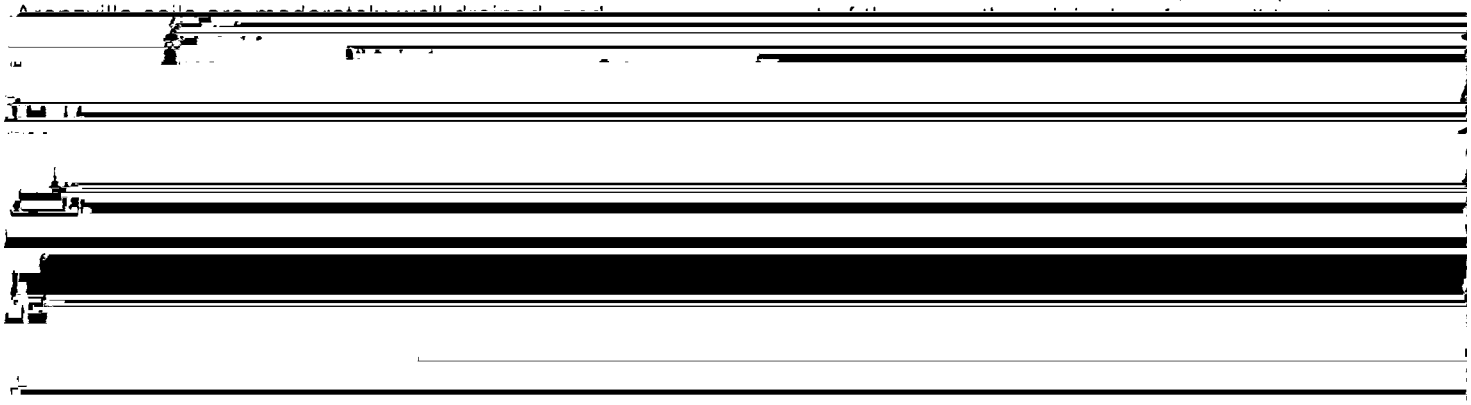
Included with these soils in mapping are small areas of Arenzville and Radford soils in drainageways.

These soils are suited to bromegrass, orchardgrass, tall fescue, and alfalfa, but erosion control is needed when grasses and legumes are established. A permanent cover of pasture plants helps to control erosion and to maintain soil tilth. In areas where the pasture is established, using a no-till seeding system to seed legumes on the contour improves forage quality and helps to control water erosion. Machinery is difficult to operate on the steeper slopes. Proper stocking, rotation grazing, deferred grazing, and fertilizing help to maintain pasture.

Because of the steepness of slope, the water erosion hazard, equipment use limitation, and seedling mortality are concerns in managing these soils for timber production. Plant competition is also a concern. Laying out logging roads and skid trails on the contour helps to overcome the problems caused by slope and also helps to control erosion. Skidding logs or trees uphill with a cable and winch also helps. Because of the hazard of erosion, grass firebreaks are needed. Seeding all bare areas to grass or to a grass-legume mixture after completion of logging operations helps to control erosion. Machinery should be used only when the soil is firm enough to support the equipment. Seedling mortality can be reduced if all vegetation within 2 feet of the existing or planted seedlings is eliminated or if older and larger stock is planted. Competition of undesirable vegetation can be reduced by chemical or mechanical means. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

These Sylvan and Bold soils are in capability subclass VIe.

962E3—Bold-Sylvan complex, 15 to 30 percent slopes, severely eroded. These soils are steep and are well drained. They are on side slopes of uplands. Over



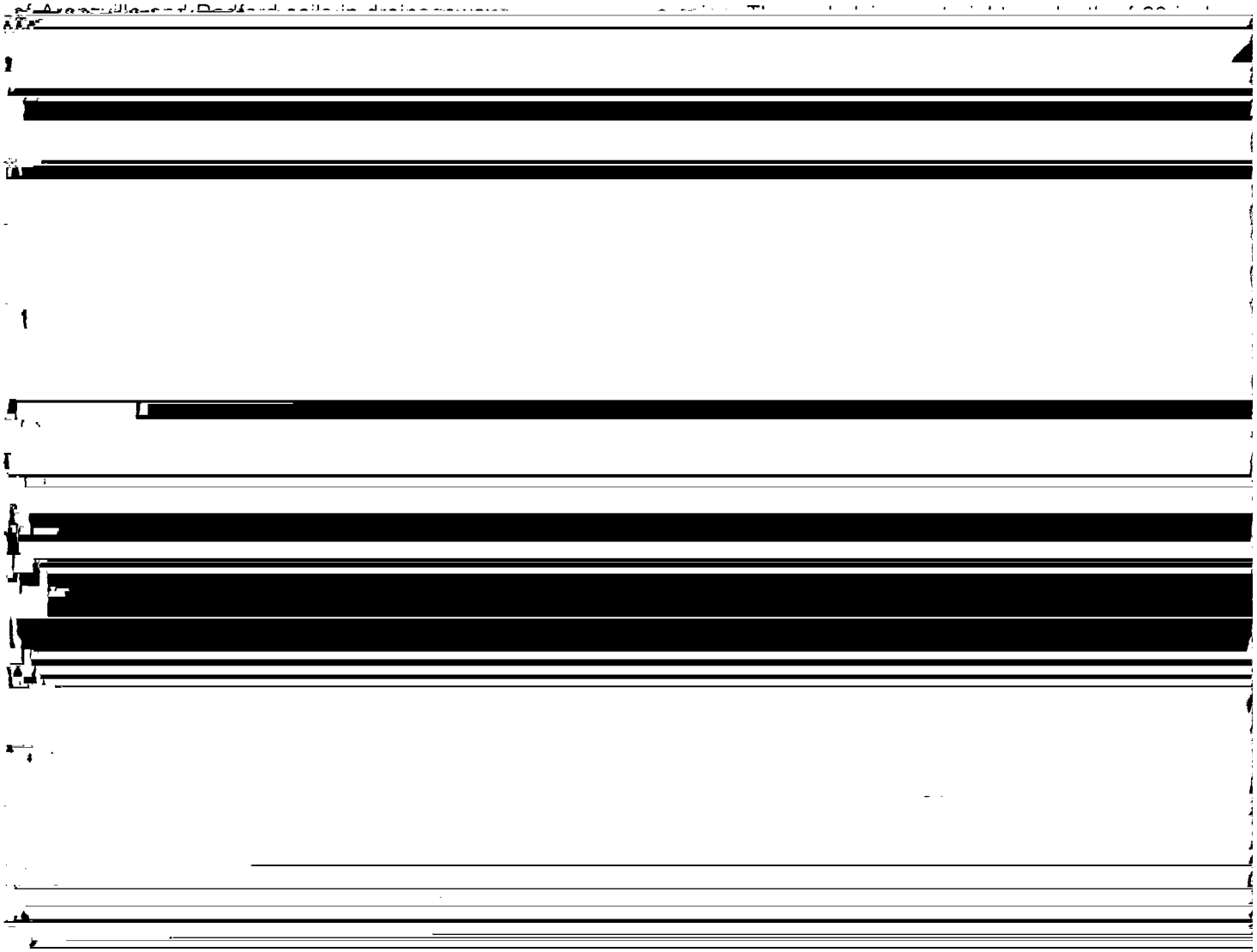
inches or more is mottled, friable silt loam. The upper part is yellowish brown and light brownish gray, and the lower part is light brownish gray. In some areas, this soil has less clay throughout the profile.

Typically, the Sylvan soil has a yellowish brown, friable silty clay loam surface layer about 6 inches thick. The subsoil to a depth of about 28 inches is yellowish brown and friable. The upper part is silty clay loam, the next part is silt loam, and the lower part is silt loam and is mottled. The underlying material to a depth of 60 inches or more is mottled yellowish brown and light brownish gray, friable, calcareous silt loam. In some areas, the subsoil has less clay, and in others, carbonates are at a depth of more than 40 inches.

Included with these soils in mapping are small areas of Arenzville and Radford soils in drainageways.

Typically, the Tallula soil has a very dark grayish brown, friable silt loam surface layer about 12 inches thick. The lower part of the surface layer is mixed with some subsoil material. The subsoil to a depth of about 31 inches is friable silt loam. The upper part is dark brown, and the lower part is yellowish brown and calcareous. The underlying material to a depth of 60 inches or more is light brownish gray, mottled, friable, calcareous silt loam. In some areas, the surface layer is thinner, and in others, this soil is calcareous at a depth of more than 35 inches. In some places, this soil has more clay throughout the profile.

Typically, the Bold soil is calcareous. It has a brown, friable silt loam surface layer about 8 inches thick. Part of the original surface layer has been removed by water



Arenzville soils are moderately well drained, and Radford soils are somewhat poorly drained. The included soils make up 2 to 10 percent of the map unit.

or more is mottled, friable silt loam. The upper part is yellowish brown and light brownish gray, and the lower part is light brownish gray. In some areas, this soil has

not be grazed or clipped until they are sufficiently established.

Steepness of slope limits the use of these soils as sites for dwellings or septic tank absorption fields. Alteration of the slope by cutting, filling, and land shaping helps to overcome this limitation on sites for dwellings. Filter lines should be installed on the contour to overcome the slope on sites for septic tank absorption fields.

These Tallula and Bold soils are in capability subclass IIIe.

965E—Tallula-Bold silt loams, 15 to 30 percent slopes. These soils are steep and are well drained. They are on side slopes of uplands. The Tallula soil is at a higher elevation than the Bold soil. This map unit is about 55 to 60 percent Tallula soil and 35 to 40 percent Bold soil. The areas of these soils are too small to be mapped separately at the selected scale. The areas are linear and range from 3 to 135 acres.

Typically, the Tallula soil has a very dark grayish brown, friable silt loam surface layer about 12 inches thick. The subsoil to a depth of about 29 inches is yellowish brown, friable silt loam. The lower part of the subsoil is mottled and calcareous. The underlying material to a depth of 60 inches or more is mottled, friable, calcareous silt loam. The upper part is strong brown and light brownish gray, and the lower part is light brownish gray. In some areas, the surface layer is thinner, and in others, this soil has more clay throughout the profile. In places, this soil is calcareous at a depth of more than 35 inches.

Typically, the Bold soil has a very dark grayish brown, friable silt loam surface layer about 4 inches thick. The subsurface layer to a depth of about 7 inches is mixed very dark grayish brown and dark brown, mottled, friable, calcareous silt loam. The underlying material to a depth of 60 inches or more is mottled, friable, calcareous silt loam. The upper part is light brownish gray and brown, the next part is dark yellowish brown and grayish brown, and the lower part is grayish brown and strong brown. In some areas, this soil has less clay throughout the profile.

Included with these soils in mapping are small areas [illegible] profile.

soils at a moderate rate. Surface runoff is rapid. The available water capacity is very high. Organic matter content is moderate in the Tallula soil and moderately low in the Bold soil.

These soils are used mainly for pasture and are moderately suited to pasture and hay. They generally are not suited to cultivated crops or to use as sites for dwellings and septic tank absorption fields because of the steepness of slope.

These soils are suited to bromegrass, orchardgrass, tall fescue, and alfalfa, but erosion control is needed when grasses and legumes are established. A permanent cover of pasture plants helps to control water erosion and to maintain soil tilth. In areas where the pasture is established, seeding legumes on the contour using a no-till seeding system improves forage quality and helps to control erosion. Machinery is difficult to operate on the steeper slopes. Proper stocking, rotation grazing, deferred grazing, and fertilizing help to maintain the pasture.

These Tallula and Bold soils are in capability subclass VIe.

3070—Beaucoup silty clay loam, frequently flooded, undrained. This soil is nearly level and is poorly drained. It is on flood plains. Meander channels and numerous small bodies of water are in unprotected areas, and backwater sloughs and meander channels are in protected areas. This soil is frequently flooded or ponded for long periods from March to June. The areas of this soil are irregular in shape and range from 3 to 6,000 acres.

Typically, the surface layer is very dark gray, mottled, friable silty clay loam about 6 inches thick. The subsurface layer to a depth of about 23 inches is very dark gray, mottled, friable silty clay loam. The subsoil to a depth of about 39 inches is mottled dark grayish brown and dark gray and is friable. The upper part is silty clay loam, and the lower part is silt loam. The underlying material to a depth of 60 inches or more is mottled dark grayish brown and dark gray, friable silt loam. In some areas, the subsurface layer is thicker, and in others, this soil has more sand throughout the

Figure 10.—Beaucoup silty clay loam, frequently flooded, undrained, is well suited to woodland and to use as habitat for wildlife.

generally is not suited to cultivated crops or to use as sites for dwellings and septic tank absorption fields because of flooding.

Because of wetness, the equipment use limitation, seedling mortality, and windthrow hazard are concerns in managing this soil for timber production. Plant competition is also a concern. Use of equipment is limited to periods when the soil is firm. Seedling mortality can be reduced by planting species that tolerate excessive moisture conditions, by planting on [illegible] by [illegible]ting older and larger stock.

Competition of undesirable vegetation can be reduced by chemical or mechanical means. Harvesting methods that do not isolate the remaining trees or leave them widely spaced reduce the windthrow hazard. Only high-value trees should be removed from a 50 foot wide strip along the west and south edges of the woodland. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees

and the destruction of the leaf mulch.

This soil provides good habitat for wetland wildlife. Many shallow water areas are available. Grain and seed crops, wild herbaceous plants, wetland plants, and other important habitat elements are also available. Some of the wildlife attracted to the areas of this soil are ducks, geese, shore birds, muskrats, frogs, turtles, and snakes.

This Beaucoup soil is in capability subclass Vw.

3073A—Ross loam, frequently flooded, 0 to 3 percent slopes. This soil is nearly level and is well drained. It is on flood plains and is flooded for brief periods from March to June. The areas of this soil are irregular in shape and range from 3 to 295 acres.

Typically, the surface layer is very dark grayish brown, friable loam about 9 inches thick. The subsurface layer to a depth of about 29 inches is very dark grayish brown, friable loam. The subsoil extends to a depth of 60 inches or more. The upper part is dark brown, friable loam; the next part is dark brown and

dark yellowish brown, friable loam; and the lower part is

yellowish brown, very friable loamy sand. In some areas, the subsurface layer is thinner. In some places, this soil has less clay throughout the profile, and in others, it has less sand throughout.

Included with this soil in mapping are small areas of Beaucoup soils in lower positions on the landscape. These soils are poorly drained. They make up 1 to 5 percent of the map unit.

Water and air move through the upper part of the Ross soil at a moderate rate and through the lower part at a moderately rapid rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is 4 to 6 feet below the surface. The available water capacity is high. Organic matter content is moderate.

This Ross soil is used mainly for cultivated crops. In some areas, it is used as woodland. This soil is moderately suited to cultivated crops and very well suited to woodland. It generally is not suited to use as sites for dwellings and septic tank absorption fields because of flooding.

In areas of this soil that are used for corn or soybeans, flooding frequently delays planting and can

desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

This Ross soil is in capability subclass IIw.

3115—Dockery silt loam, frequently flooded. This soil is nearly level and is somewhat poorly drained. It is in meander channels in unprotected areas on flood plains. This soil is frequently flooded for long periods from March to June. The areas of this soil are irregular in shape and range from 10 to 1,200 acres.

Typically, the surface layer is stratified dark grayish brown, very dark grayish brown, and brown, mottled, friable silt loam about 8 inches thick. The underlying material to a depth of 60 inches or more is stratified, mottled, and friable. The upper part is dark grayish brown, very dark grayish brown, and brown silt loam; the next part is very dark grayish brown and grayish brown silty clay loam; and the lower part is very dark grayish brown, dark grayish brown, and grayish brown

silty clay loam. In some areas, the surface layer has

more sand, and in others, this soil has less clay throughout the profile. In some places, a seasonal high water table is within a depth of 2 feet.

Water and air move through the Dockery soil at a moderate rate. Surface runoff is slow. In spring, a seasonal high water table is 2 to 3 feet below the surface. The available water capacity is very high. Organic matter content is moderate.

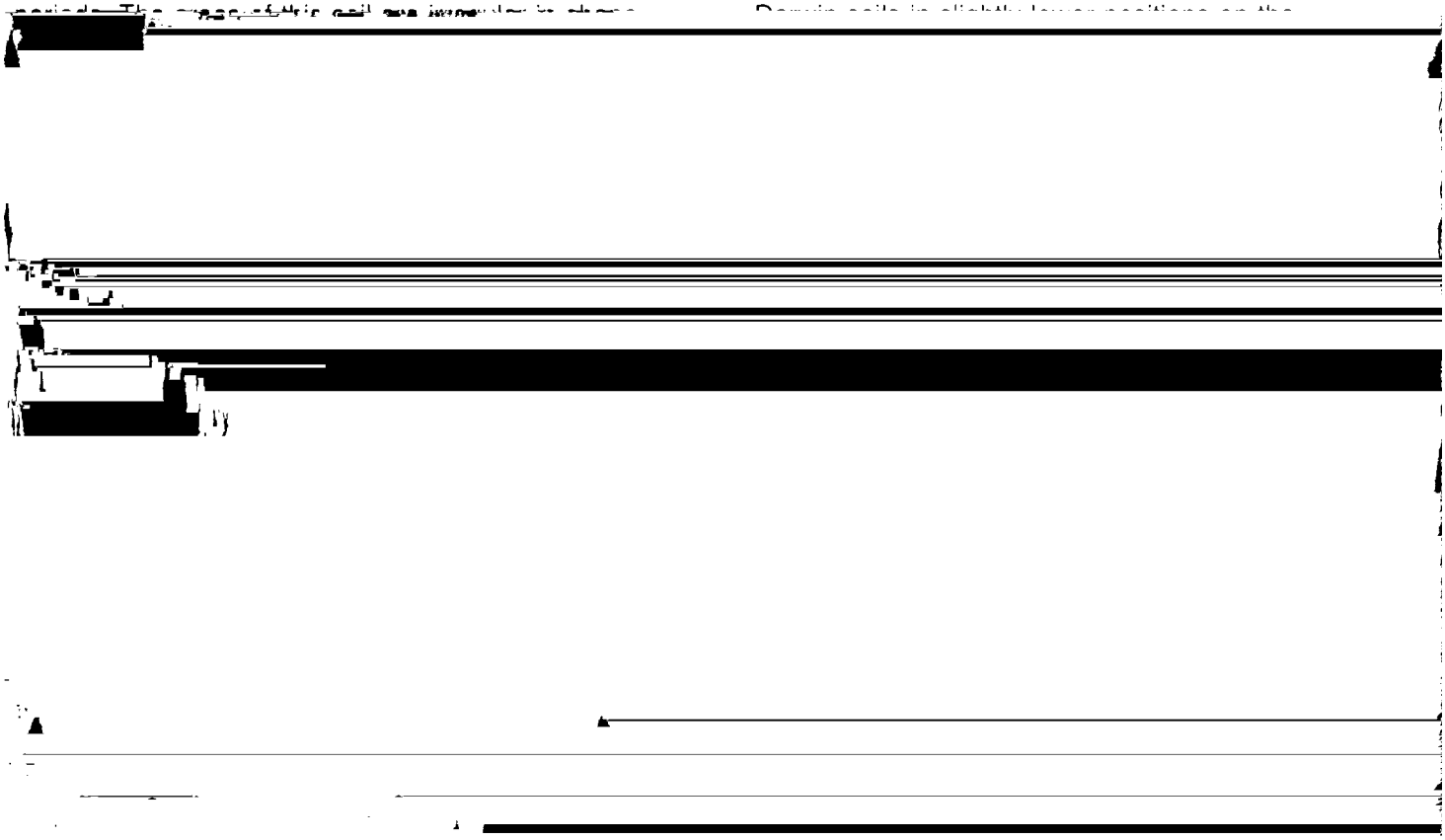
This Dockery soil is used mainly as woodland and is moderately suited to this use. It is well suited to use as habitat for wetland wildlife. This soil is poorly suited to and generally not used for cultivated crops. It generally is not suited to use as sites for dwellings and septic tank absorption fields because of flooding.

If this soil is used for production of timber, livestock should be kept out of the area and the woodland needs to be protected from fire. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to trees. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf

4776—Comfrey loam, ponded. This soil is nearly level and is very poorly drained. It is on flood plains and is frequently flooded for long periods from March to June. This soil is frequently ponded for very long

of the subsoil is darker. In some places, this soil has more sand throughout the profile, and in others, it has less clay throughout.

Included with this soil in mapping are small areas of



and range from 10 to 435 acres.

Typically, the surface layer is black, friable loam about 11 inches thick. The subsurface layer to a depth of about 30 inches is black, friable loam. The underlying material to a depth of 60 inches or more is friable. The upper part is mottled dark gray and very dark gray clay loam, and the lower part is stratified dark gray, very dark gray, and dark grayish brown sand. In some areas, the subsurface layer is thinner, and in others, this soil has less sand throughout the profile.

Water and air move through the Comfrey soil at a moderate rate. Surface runoff is ponded. During much of the year, a seasonal high water table is 2 feet above the surface to 1 foot below. The available water capacity is high. Organic matter content is high.

This Comfrey soil is mostly idle land and is well suited to use as habitat for wetland wildlife (fig. 11). It generally is not suited to cultivated crops or to use as sites for dwellings and septic tank absorption fields because of the ponding and flooding.

This soil provides good habitat for wetland wildlife. Many shallow water areas are available. Grain and

landscape. These soils are very slowly permeable. They make up 1 to 5 percent of the map unit.

Water and air move through the Beaucoup soil at a moderately slow rate. In cultivated areas, surface runoff is slow to ponded. In spring, a seasonal high water table is 0.5 foot above the surface to 2 feet below. The available water capacity is very high. Organic matter content is high. The surface layer is compact and cloddy if this soil is plowed when too wet.

This Beaucoup soil is used mainly for cultivated crops and is well suited to this use. It generally is not suited to use as sites for dwellings and septic tank absorption fields because of ponding and flooding.

If this soil is drained, it can be used for corn, soybeans, or small grains. A drainage system has been installed in most areas, and maintenance of the system is needed. Additional drainage is needed in some areas. Surface drains, subsurface tile, and surface inlet tile function satisfactorily if suitable outlets are available. Land grading helps to control the ponding. Conservation tillage and returning crop residue to the soil improve tilth, help to prevent surface compaction, and increase

Figure 11.—In most areas, Comfrey loam, ponded, is idle land. It is well suited to use as habitat for wetland wildlife.

These soils are poorly drained. They make up 1 to 5 percent of the map unit.

Water and air move through the Arenzville soil at a moderate rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is 3 to 6 feet below the surface. The available water capacity is very high. Organic matter content is moderately low.

This Arenzville soil is used mainly for cultivated crops. In some areas, it is used as pastureland or woodland. This soil is well suited to cultivated crops, pasture, and hay and is moderately well suited to woodland. It generally is not suited to use as sites for dwellings and septic tank absorption fields because of flooding.

No major limitations affect the use of this soil for corn, soybeans, or small grains. Conservation tillage helps to maintain soil tilth and productivity.

This soil is suited to bromegrass, orchardgrass, tall fescue, and alfalfa. Overgrazing reduces forage production and causes surface compaction and poor tilth. Proper stocking, rotation grazing, deferred grazing and applying fertilizer and lime help to maintain the pasture and the soil.

Plant competition is a concern in managing this soil

for timber production. Competition of undesirable vegetation can be reduced by chemical or mechanical means. Excluding livestock from the woodland helps to prevent the reduction or destruction of the leaf mulch and of desirable young trees, to prevent compaction of the soil, and to prevent damage to tree roots. Fire protection helps to prevent the killing or permanent injury to trees and the destruction of the leaf mulch.

This Arenzville soil is in capability class I.

7107—Sawmill silty clay loam, rarely flooded. This soil is nearly level and is poorly drained. It is on flood plains. This soil is protected by a levee system and is subject to only rare flooding. The areas of this soil are linear or irregular in shape and range from 3 to 285 acres.

Typically, the surface layer is black, firm silty clay loam about 11 inches thick. The subsurface layer to a depth of about 34 inches is firm silty clay loam that is black in the upper part and very dark gray and mottled in the lower part. The subsoil to a depth of about 57 inches is mottled, firm silty clay loam. The upper part is grayish brown and strong brown, and the lower part is gray. The underlying material to a depth of 60 inches or more is gray, mottled, friable silt loam. In some areas, the subsurface layer is thinner, and in others, it is thicker. In places, this soil has more sand throughout the profile. In a few areas, a seasonal high water table is at a depth of more than 2 feet.

Included with this soil in mapping are small areas of Darwin soils in slightly lower positions on flood plains. These soils are very slowly permeable. They make up 1 to 5 percent of the map unit.

Water and air move through the Sawmill soil at a moderate rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is within a depth of 2 feet. The available water capacity is high. Organic matter content is high. The surface layer is compact and cloddy if this soil is plowed when too wet.

This Sawmill soil is used mainly for cultivated crops and is well suited to this use. It generally is not suited to use as sites for dwellings and septic tank absorption fields because of flooding.

If this soil is drained, it can be used for corn, soybeans, or small grains. A drainage system has been installed in most areas, and maintenance of the system is needed. Additional drainage is needed in some

compaction, and increase the rate of water intake.

This Sawmill soil is in capability subclass IIw.

7284—Tice silty clay loam, rarely flooded. This soil is nearly level and is somewhat poorly drained. It is on flood plains. This soil is protected by a levee system and is subject to only rare flooding. The areas of this soil are irregular in shape and range from 4 to 95 acres.

Typically, the surface layer is very dark gray, friable silty clay loam about 11 inches thick. The subsurface layer to a depth of about 17 inches is very dark grayish brown, mottled, friable silty clay loam. The subsoil to a depth of about 46 inches is mottled and friable. The upper part is dark grayish brown silty clay loam, the next part is brown silty clay loam, and the lower part is grayish brown and brown silt loam. The underlying material to a depth of 60 inches or more is grayish brown, mottled, friable silt loam. In some areas, the upper part of the subsoil is darker. In some places, this soil has less clay throughout the profile, and in others, it has more sand throughout. In some places, a seasonal high water table is within a depth of 1 foot.

Water and air move through the Tice soil at a moderate rate. In cultivated areas, surface runoff is slow. In spring, a seasonal high water table is 1 foot to 3 feet below the surface. The available water capacity is very high. Organic matter content is moderate. The surface layer is compact and cloddy if this soil is plowed when too wet.

This Tice soil is used mainly for cultivated crops and is well suited to this use. It generally is not suited to use as sites for dwellings and septic tank absorption fields because of flooding.

No major limitations affect the use of this soil for corn, soybeans, or small grains. Conservation tillage improves soil tilth and helps to maintain soil productivity.

This Tice soil is in capability class I.

7302—Ambraw clay loam, rarely flooded. This soil is nearly level and is poorly drained. It is on flood plains. This soil is protected by a levee system and is subject to only rare flooding (fig. 12). It is occasionally ponded for brief periods from March to June. The areas of this soil are irregular in shape and range from 3 to 2,330 acres.

Typically, the surface layer is very dark gray, firm

Figure 12.—Levees along the Illinois River protect this area of Ambraw clay loam, rarely flooded.

underlying material to a depth of 60 inches or more is mottled gray, strong brown, and light gray, friable, stratified clay loam and loam. In some areas, the upper part of the subsoil is darker, and in others, this soil has less sand throughout the profile.

Included with this soil in mapping are small areas of Medway soils in higher positions on flood plains. These soils are moderately well drained. They make up 1 to 5 percent of the map unit.

Water and air move through the Ambraw soil at a moderately slow rate. In cultivated areas, surface runoff is slow to ponded. In spring, a seasonal high water table is within 2 feet of the surface. The available water capacity is high. Organic matter content is moderate.

This Ambraw soil is used mainly for cultivated crops and is well suited to this use. It generally is not suited to use as sites for dwellings and septic tank absorption fields because of flooding.

If this soil is drained, it can be used for corn, soybeans, or small grains. A drainage system has been installed in most areas, and maintenance of the system is needed. Additional drainage is needed in some areas. Surface drains, subsurface tile, and surface inlet tile function satisfactorily if suitable outlets are available. Land grading helps to control the ponding. Such practices as conservation tillage and returning crop residue to the soil improve tilth, help to prevent surface compaction, and increase the rate of water intake.

This Ambraw soil is in capability subclass IIw.

7682—Medway loam, rarely flooded. This soil is nearly level and is moderately well drained. It is on

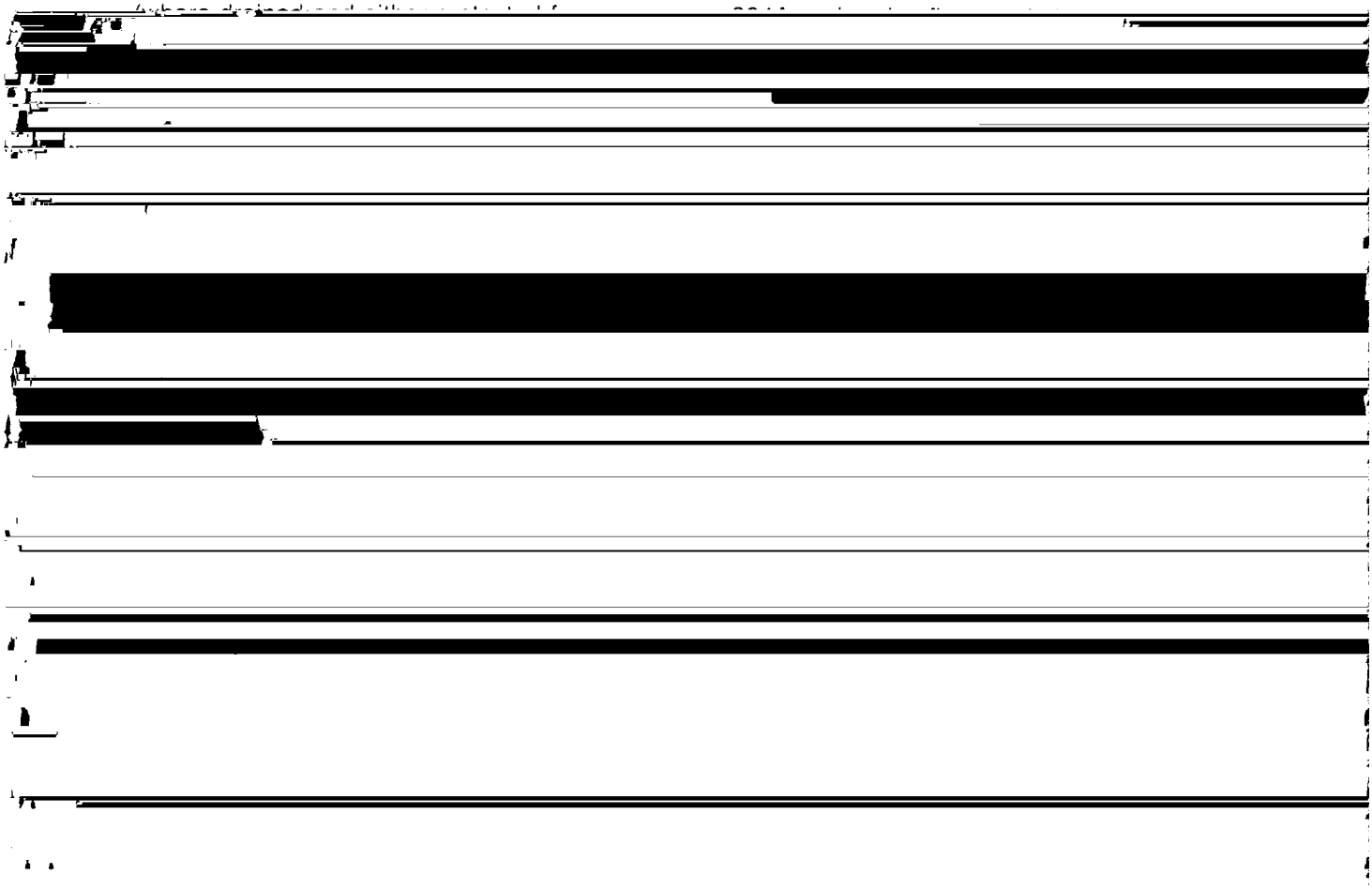
flood plains and low terraces. This soil is protected by a levee system and is subject to only rare flooding. The areas of this soil are irregular in shape and range from 3 to 50 acres.

cultivated land, pasture, woodland, or other land, but it is not urban and built-up land or water areas. It either is used for food or fiber crops or is available for those crops. The soil qualities, growing season, and moisture

brown, friable loam about 10 inches thick. The subsurface layer to a depth of about 17 inches is dark brown, friable loam. The subsoil to a depth of about 54 inches is friable. The upper part is brown loam; the next

produce a sustained high yield of crops in an economic manner. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the

17A	Keomah silt loam, 0 to 3 percent slopes (where drained)	279B	Rozetta silt loam, 2 to 5 percent slopes
36A	Tama silt loam, 0 to 2 percent slopes	280B	Fayette silt loam, 2 to 5 percent slopes
36B	Tama silt loam, 2 to 5 percent slopes	284	Tice silty clay loam, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
37	Worthen silt loam		
43A	Ipava silt loam, 0 to 2 percent slopes	302	Ambraw clay loam, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
43B	Ipava silt loam, 2 to 5 percent slopes		
68	Sable silty clay loam (where drained)		
70	Beaucoup silty clay loam, frequently flooded		



Use and Management of the Soils

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

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

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

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

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

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

Crops and Pasture

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

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

In 1982, about 177,044 acres in Cass County was cropland, 11,446 acres was pasture, 20,896 acres was woodland, and 11,070 acres was roads and other built-up areas *(11)*.

The soils in Cass County have good potential for continued crop production, particularly if the latest crop production technology is applied. This soil survey can greatly facilitate the application of such technology. The main concerns in managing the cropland and pastureland in the county are erosion, soil blowing, drainage, droughtiness, and soil tilth.

Potential water erosion is a major problem on about 48 percent of the cropland and pastureland in the county. About 27 percent of the cropland is adequately treated to control water erosion. Erosion is a hazard where the slope is more than 2 percent and, the longer the slope length, the more severe the hazard becomes.

Sheet erosion, or loss of the surface layer is damaging. The organic matter content and natural fertility levels are lowered as the surface layer is lost and part of the subsoil is incorporated into the plow layer. As a result, soil productivity is reduced. Erosion also impairs tilth in the surface layer and reduces the intake of water. Erosion is especially damaging on soils that have a clay content in excess of about 30 percent in the surface layer. These soils tend to be cloddy if worked when wet and to crust after hard rains. Preparing a good seedbed on these soils is difficult

because of the cloddiness, and runoff is increased if the surface is crusted.

Soil erosion on farmland also results in sediment entering streams, rivers, ponds, or road ditches. Control of sediment pollution improves the quality of water available for municipal and recreational uses and for fish and wildlife.

A good management system maintains or improves natural fertility, removes excess water, controls water erosion and soil blowing, maintains good tilth, and increases infiltration. A cropping system that keeps plant cover or crop residue on the surface for extended periods during the year reduces erosion and helps to maintain soil productivity. Including grasses and legumes in the crop rotation reduces crusting, improves tilth, and provides nutrients for the following crop.

Contour farming, contour stripcropping, terraces, and diversions help control water erosion and reduce runoff. These practices are most effective on soils that have uniform and regular slopes, such as Raddle and Tallula soils. Soils on short slopes with irregular topography, such as Sylvan soils, need a cropping rotation that provides adequate plant cover to control water erosion.

Conservation tillage systems, such as chisel plowing, zero tillage, and ridge planting, help to control water erosion, reduce runoff, and increase the rate of water intake.

Chisel plowing is suitable on most of the tillable soils in the county. Zero tillage is most successful on well drained soils, such as the Tama and Tallula soils, rather than on poorly drained soils, such as the Hartsburg soils, because the wet conditions delay planting and reduce seed germination. Ridge planting is suitable on most of the nearly level soils in the county. When used on poorly drained soils, such as Beaucoup, Hartsburg, and Sable soils, ridge planting helps the seedbed temperature to warm earlier in spring.

Soil blowing is a hazard on the sandy Bloomfield and Sparta soils. Field windbreaks, conservation tillage, and maintenance of plant cover reduce soil blowing and crop damage caused by the moving soil particles. For row crops, the use of conservation tillage systems that leave crop residue on the surface after planting is increasing in Cass County. Conservation tillage is effective in reducing erosion on sloping soils and can be used on most soils in the county.

Grassed waterways help to carry excess surface water safely downslope to the nearest creek, stream, or other watercourse (fig. 13). When grassed waterways are established in natural drainageways, they prevent the surface runoff from carrying soil downslope. To effectively manage rainfall, increase water retention, and reduce soil loss, grassed waterways generally are installed in conjunction with other conservation practices, such as terraces, diversions, conservation tillage systems, and contour farming operations.

Crop rotations that include wheat, or other small grains, and hay help to control water erosion on soils that are sloping to steep, such as the Fayette and Sylvan soils. Such rotations, in addition to reducing soil losses, can increase organic matter content, soil nitrogen, and water retention. They can also improve soil tilth. Changing the soil environment with crop rotations also helps to control some weeds and insects in the soil.

Information about controlling water erosion and soil blowing for each kind of soil is in the Technical Guide, which is available in local offices of the Soil Conservation Service.

Soil drainage benefits crop production on soils that are somewhat poorly drained or poorly drained. In Cass County, drainage systems have been installed on many of these soils. Poorly drained soils require some form of drainage system for the crops commonly grown in the area. Crop production can be improved on some of these soils by installing additional drainage. The Ambraw, Beaucoup, Hartsburg, and Sable soils are poorly drained. The somewhat poorly drained soils are wet enough in some years to delay planting, which can reduce yields. The Ipava, Littleton, and Tice soils are somewhat poorly drained.

The design of surface and subsurface drainage systems varies with the kind of soil. Tile drains alone are inadequate in many soils. A combination of open drainage ditches and tile is needed in some areas of poorly drained soils, such as Ambraw, Beaucoup, and Sawmill soils. Tile drains are not effective in very slowly permeable soils, such as Darwin soils, and open ditches are needed to drain these soils. If adequate outlets are available, tile drains are effective in moderately slowly permeable and moderately permeable soils, such as Ipava and Littleton soils.

Information about the drainage system suitable for each kind of soil is contained in the Technical Guide, which is available in local offices of the Soil Conservation Service.

Soil droughtiness limits the productivity of some of the soils used for crops and pasture. The physical composition of these soils limits the amount of plant available water that is needed for the optimum growth of plants during dry periods. Bloomfield and Sparta soils are examples. Zero tillage and crop residue management help to conserve soil moisture and improve yields. Planting drought-tolerant crops and

Figure 13.—Grassed waterways remove excess surface water and prevent the formation of gullies.

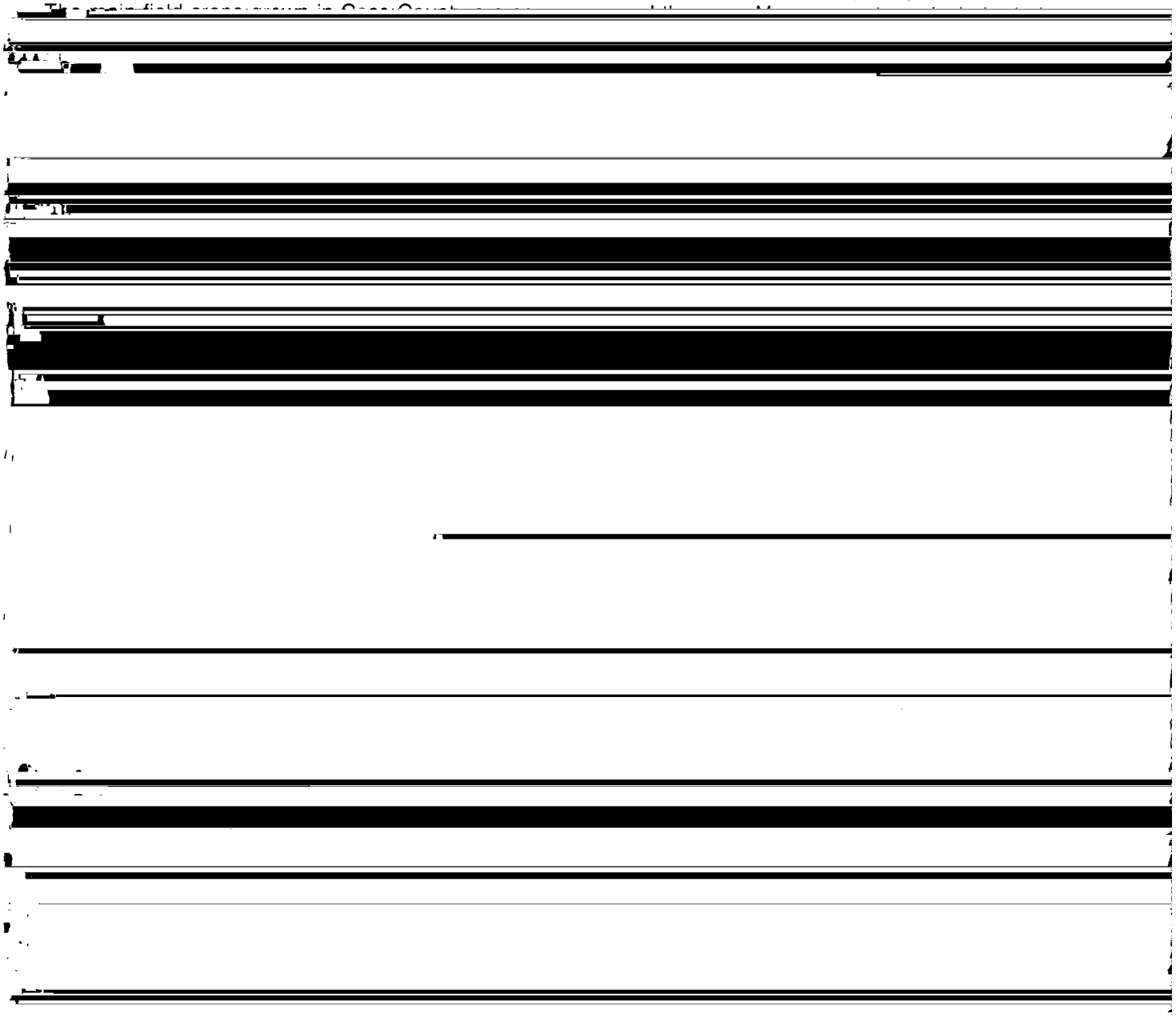
varieties also increases yields.

The natural fertility levels for the soils in Cass County range from low, such as in Sylvan soils, to high, such as in Hartsburg soils. Plants on the majority of the soils in the county respond well to nitrogen, phosphorus, and potassium fertilizers. The soils range from acidic to calcareous. Fayette and Rozetta soils are acidic and need applications of ground limestone to raise the pH for optimum crop production. Bold soils are calcareous and do not require liming because of their naturally high pH. On all soils, the kind and amount of lime and fertilizer to be applied should be based on the results of

seeds, in the amount of runoff, and in the rate of water intake into the soil. Topsoil that has good tilth is granular and porous.

In Cass County, most of the soils used for crops have a silt loam or silty clay loam surface layer. Some of these soils have a lower organic matter content than other soils. Generally, the structure of soils that have low organic matter content is weak, and intensive rainfall causes a crust to form on the surface. The crust is hard when dry and is nearly impervious to water. Once the crust forms, the infiltration rate decreases and runoff increases. Leaving crop residue on the surface or

a good seedbed is difficult. These soils often stay wet until late in spring, which limits the opportunity for primary tillage in spring. If these soils are tilled in the fall, crop residue left on the surface helps to prevent soil blowing.



and soybeans. Small grains and forage are also grown, but could be used more extensively on nearly all of the cropland for effective erosion control and improvement of natural soil fertility.

The latest information and suggestions for crops can be obtained from local offices of the Cooperative Extension Service and the Soil Conservation Service.

agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered *(3)*.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil

erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure

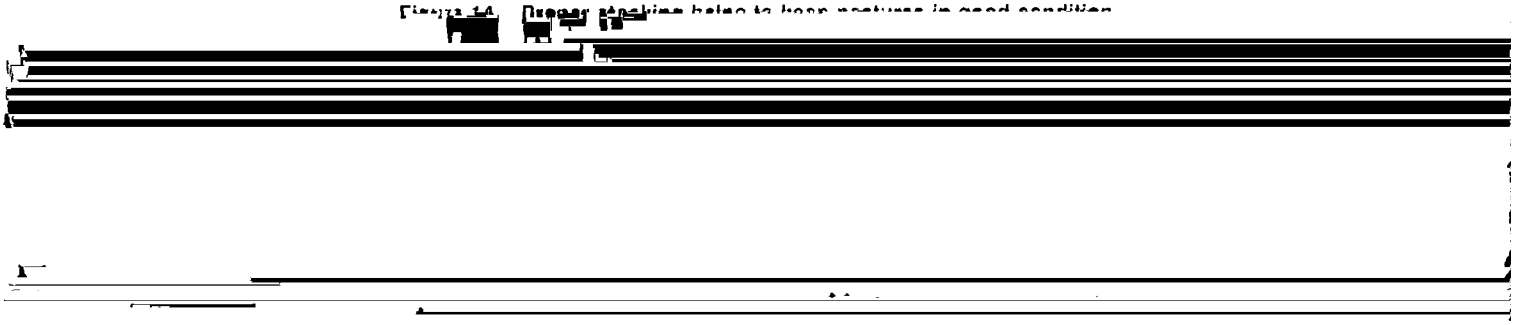


Figure 14. Proper stocking helps to keep pastures in good condition.

Class I soils have few limitations that restrict their use.

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

limitations, impractical to remove, that limit their use.

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

Class VII soils have very severe limitations that make

unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

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

grass or grass-legume mixtures between rows of the planted seedlings helps to control erosion. If erosion is excessive or the slope is more than 15 percent, runoff should be diverted away from haul roads and skid trails. Machinery should be used only when the soil is firm enough to support the weight of the machinery.

Table 6 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination symbol of each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the ordination symbol [illegible]

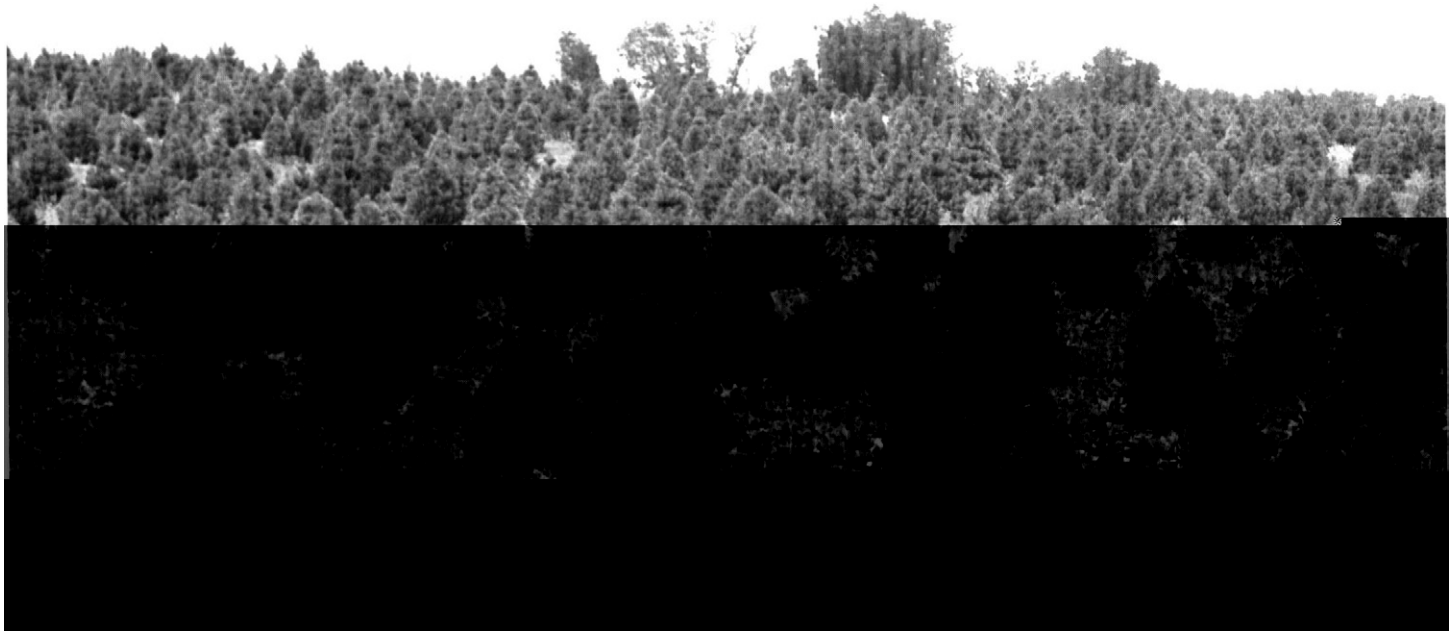


Figure 15.—Christmas trees are grown on many of the sandy soils in Cass County. These trees are in an area of the Bloomfield-Plainfield-Alvin general soil map unit.

surface layer. A rating of *slight* indicates that under normal conditions the kind of equipment or season of use is not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of *moderate* indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of *severe* indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of uses. If the soil is wet, the wetness restricts equipment use for more than 3 months.

Seedling mortality refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of *slight* indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of *moderate* indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of *severe* indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

Windthrow hazard is the likelihood that trees will be uprooted by the wind because the soil is not deep enough for adequate root anchorage. The main restrictions that affect rooting are a seasonal high water table, and the depth to bedrock, a fragipan, or other limiting layers. A rating of *slight* indicates that under normal conditions no trees are blown down by the wind. Strong winds may damage trees, but they do not uproot them. A rating of *moderate* indicates that some trees can be blown down during periods when the soil is wet and winds are moderate or strong. A rating of *severe* indicates that many trees can be blown down during these periods.

The *potential productivity* of merchantable or *common*

trees on a soil is expressed as a *site index* and as a *volume* number. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Recreation

Cass County has numerous recreational facilities available to the public. Each municipality offers a varied range of recreational facilities and activities. Privately owned gun, golf, lake, and creek clubs are also in the county.

The largest recreational facility in the county is the state-owned Sanganois Conservation Area (fig. 16). It is

produced by the most important trees. This number, expressed as cubic feet per acre per year, indicates the amount of fiber produced on a fully stocked, even-aged, unmanaged stand.

The first species listed under *common trees* for a soil is the indicator species for that soil. It is the dominant species on the soil and the one that determines the ordination class.

Trees to plant are those that are suitable for commercial wood production.

public duck hunting area is provided. The Panther Creek Conservation Area is also owned by the state. These conservation areas provide both woodland and openland for hunting, hiking, and sightseeing.

The soils of the survey area are rated in table 8 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of

or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding

stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

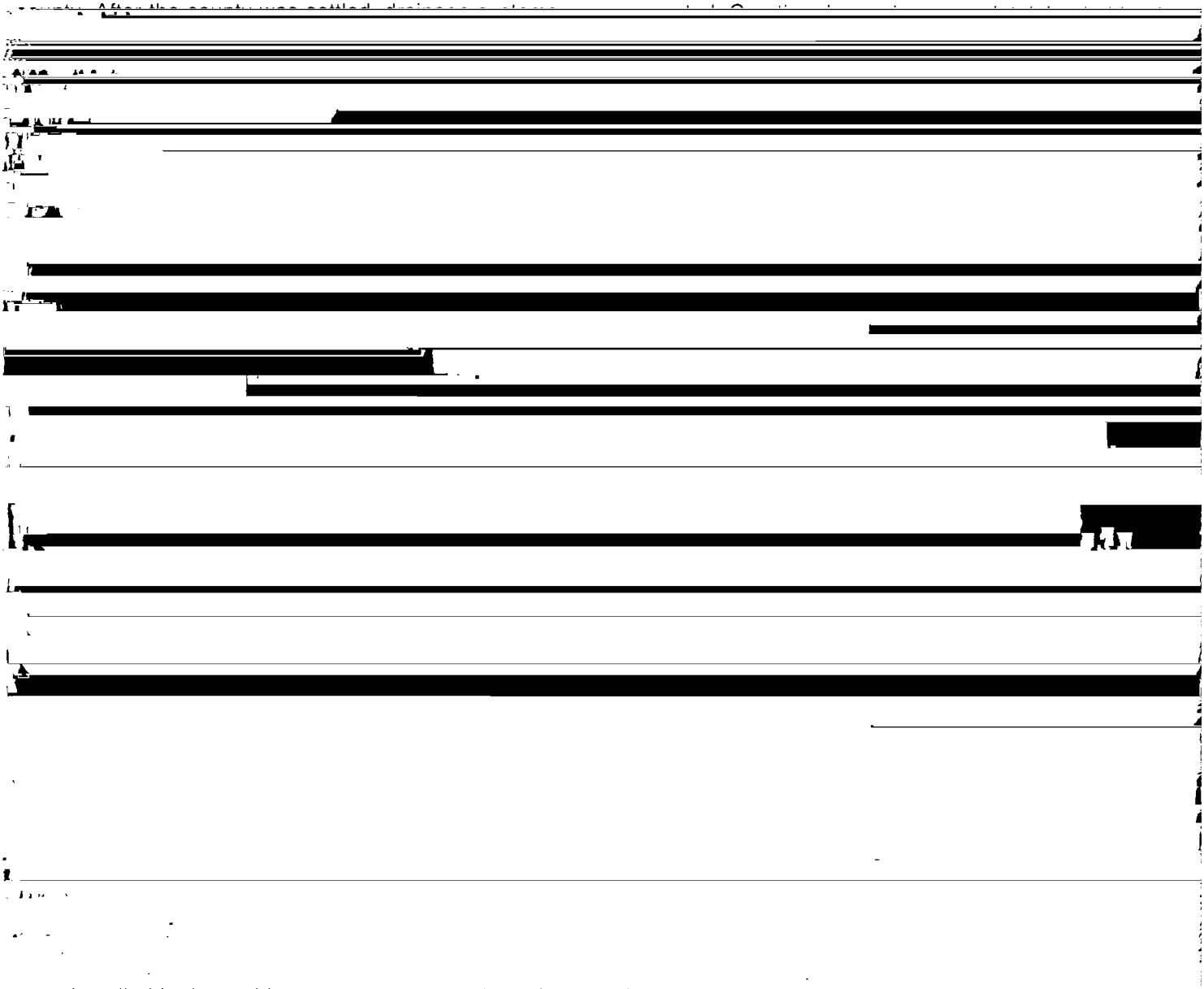
Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after

the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty

muskrat, frogs, turtles, and snakes.

The kind and abundance of wildlife in Cass County reflect the soil types, land use, and vegetation. About 40 percent of the soils developed under native plant communities dominated by tall prairie grasses. Wildlife that was formerly abundant in this prairie habitat included prairie chickens, upland sandpipers, and other grassland birds and mammals. The native woodland habitat originally covered about 35 percent of the



were installed in the prairie areas, trees were cleared, and the acreage of cultivated crops increased rapidly. These changes altered the wildlife communities, favoring the more adaptable species and those more tolerant of human settlements, such as the horned lark, cardinal, mourning dove, raccoon, and white-tailed deer.

Good management can improve the habitat for

established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer,

the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

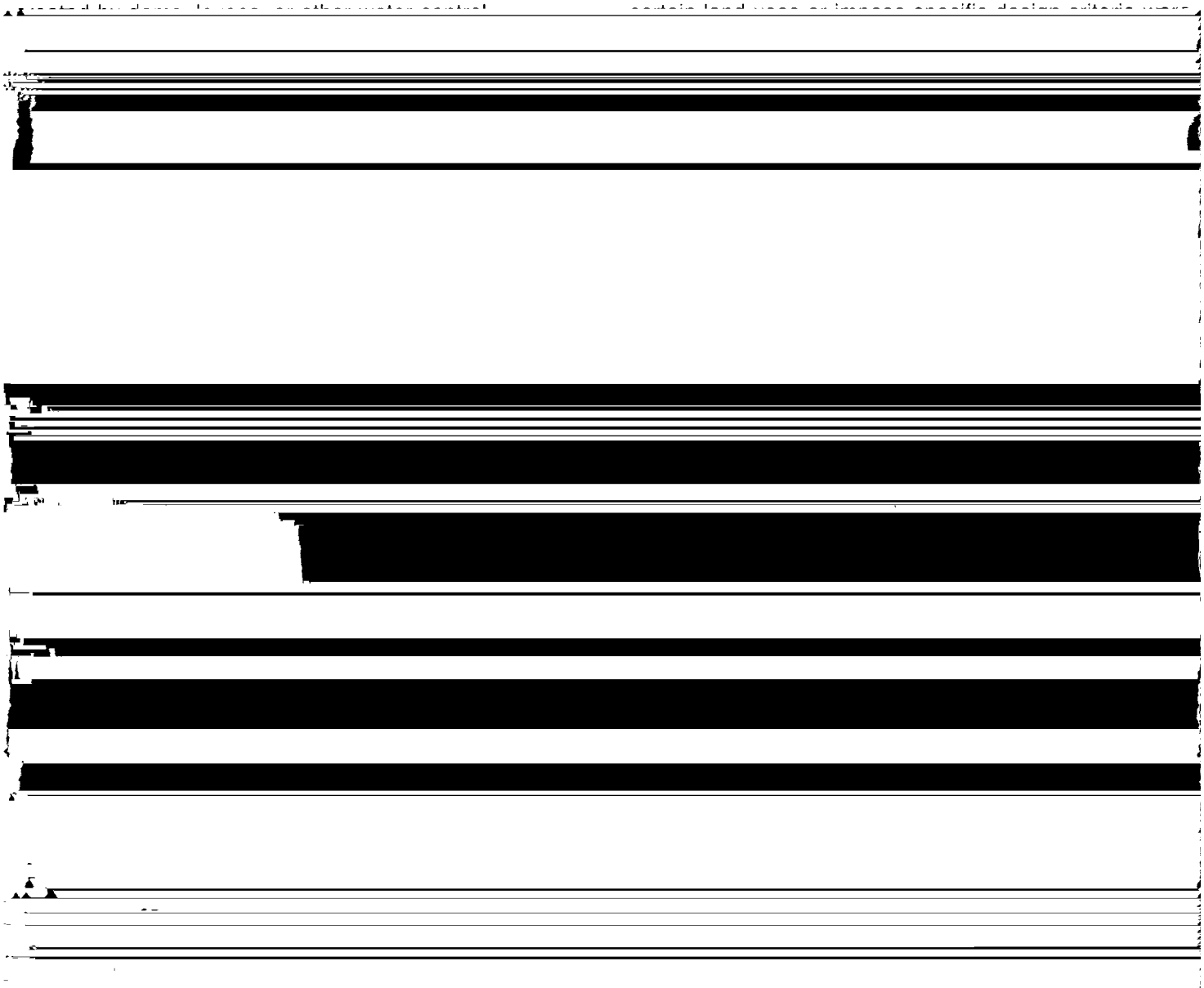
Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are

planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict

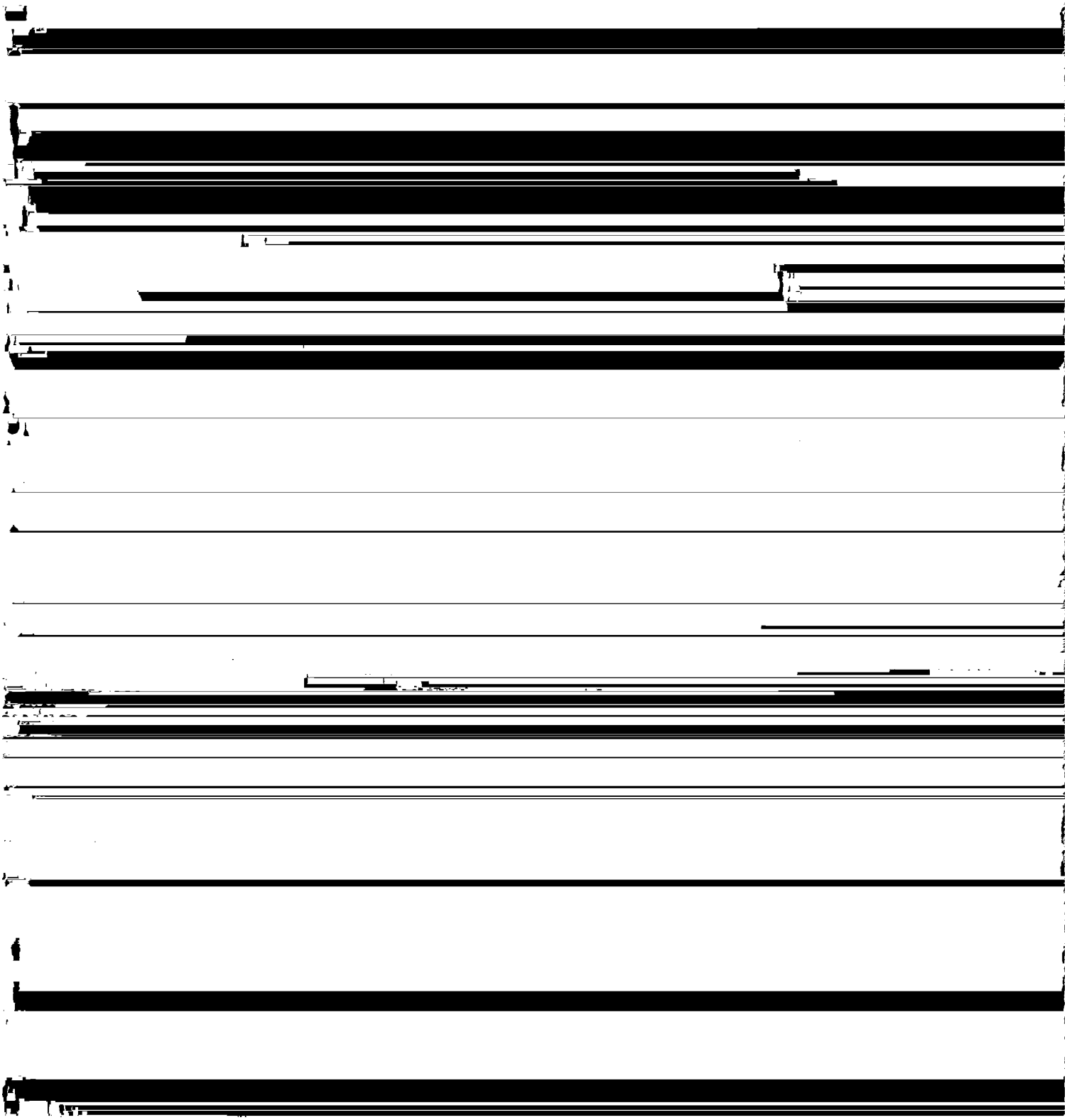


structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface

not considered in preparing the information in this section. Local ordinances and regulations need to be

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is

is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste



evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading.

Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability

rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

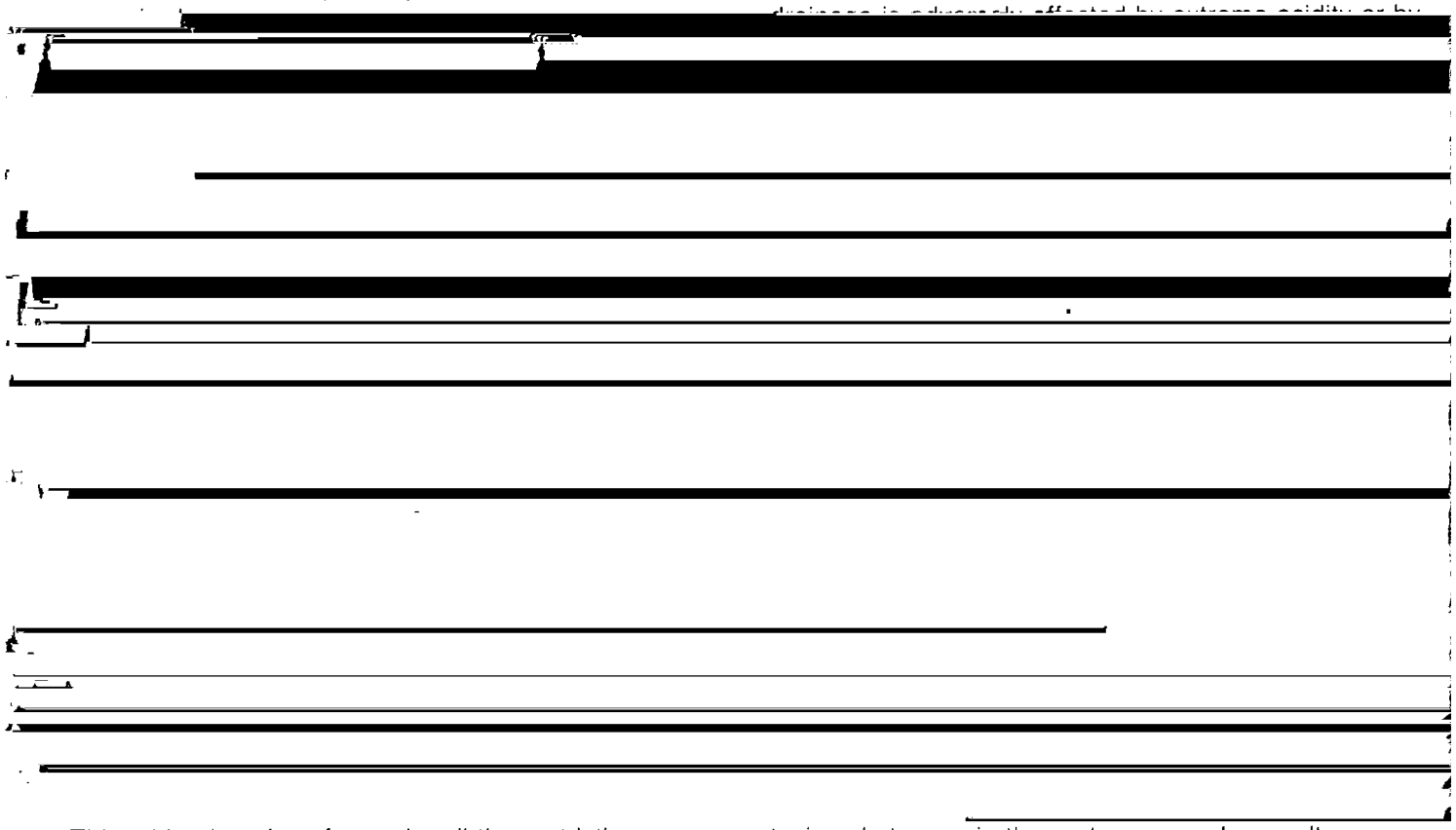
A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as

source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation

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

bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and potential frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after



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

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

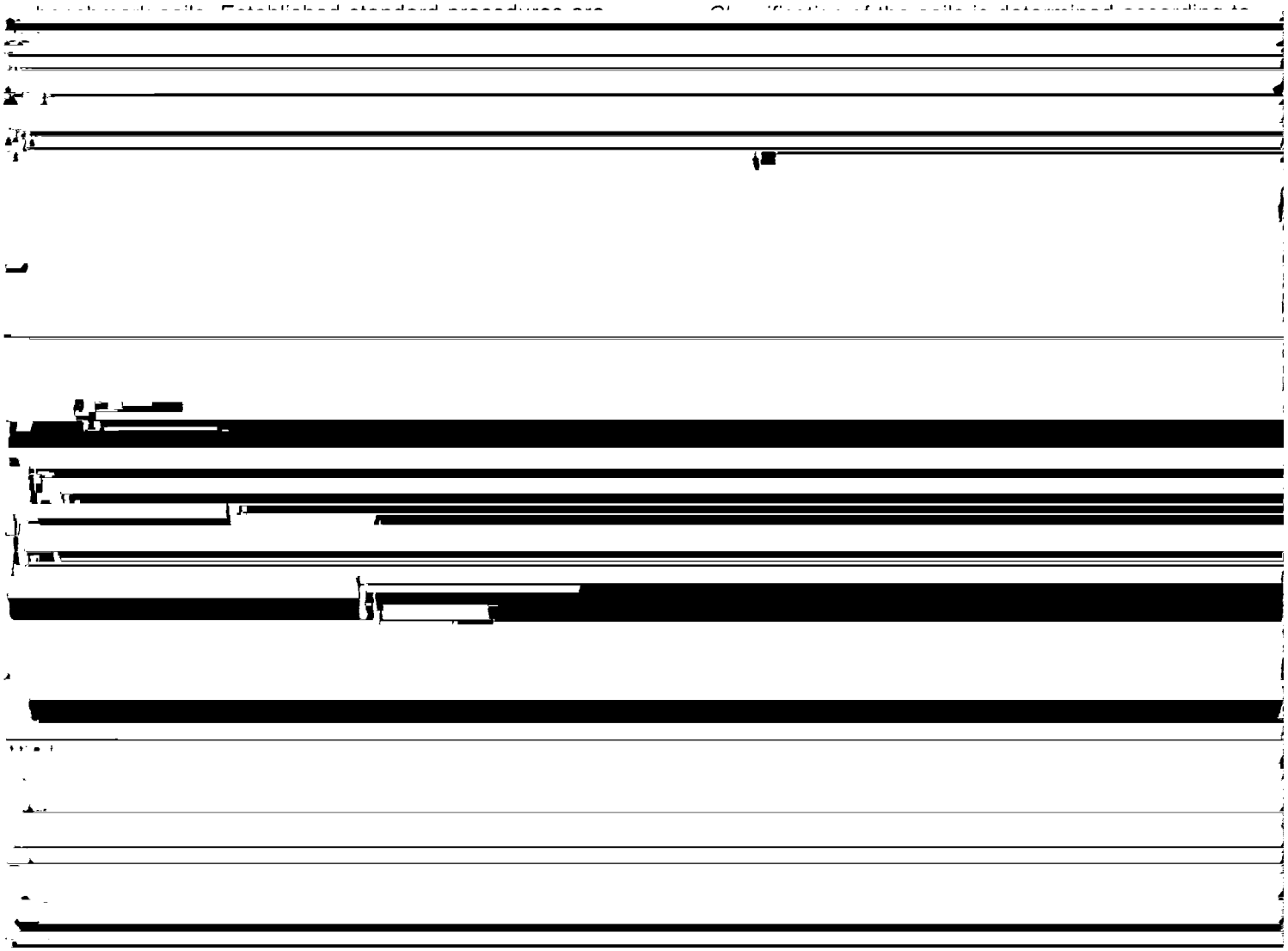
toxic substances in the root zone, such as salts, sodium, or sulfur. Availability of drainage outlets is not considered in the ratings.

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

Soil Properties

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

Soil properties are determined by field examination of the soils and by laboratory index testing of some



followed. During the survey, many shallow borings are made and examined to identify and classify the soils

in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as about 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway

Rock fragments larger than 3 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates

density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates

buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.05 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water carbonate and sandy clay loams and sandy clays that are less than 5 percent finely divided calcium carbonate. These soils are slightly erodible. Crops can be grown if measures to control soil blowing are used.

6. Loamy soils that are 20 to 35 percent clay and less than 5 percent finely divided calcium carbonate, except silty clay loams. These soils are very slightly erodible. Crops can easily be grown.

7. Silty clay loams that are less than 35 percent clay and less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible. Crops can easily be grown.

8. Stony or gravelly soils and other soils not subject to soil blowing.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 15, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter of a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity,

soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to two hydrologic groups in table 16, the first letter is for drained areas and the second is for undrained areas.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, nor is water in swamps and marshes.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *occasional* that it occurs, on the average, once or less in 2 years; and *frequent* that it occurs, on the average, 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.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic

the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

Potential frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage mainly to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Engineering Index Test Data

Table 17 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. The pedons are representative of the series described in the section "Soil Series and Their Morphology." The soil samples were tested by the Illinois Department of Transportation.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487 (ASTM); Mechanical analysis—T 88 (AASHTO), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 423 (ASTM); Plasticity index—T 90 (AASHTO), D 424 (ASTM); and Moisture density, Method A—T 99 (AASHTO), D 698 (ASTM).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(10)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 18 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquoll (*Aqu*, meaning water, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix thatindicates a property of the soil. An example is Haplaquolls (*Hapl*, meaning minimal horizonation, plus *aquoll*, the suborder of the Mollisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Haplaquolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is coarse-loamy, mixed, mesic Typic Haplaquolls.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Soil Series and Their Morphology

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

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the *Soil Survey Manual (8)*. Many of the technical terms used in the descriptions are defined in *Soil Taxonomy (10)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Alvin Series

The Alvin series consists of well drained soils on stream terraces and uplands. These soils formed in eolian and water-deposited material. They are moderately permeable in the upper part of the profile and moderately rapidly permeable in the lower part. Slope ranges from 2 to 15 percent.

Alvin soils are similar to Hickory soils and commonly are adjacent to Bloomfield, Fayette, Orio, and Plainfield soils. Bloomfield and Plainfield soils are sandy and are in positions similar to those of the Alvin soils. Bloomfield soils are somewhat excessively drained and Plainfield soils are excessively drained. Fayette soils formed in loess and are in positions slightly lower than those of the Alvin soils. Hickory soils formed in glacial till and are in positions similar to those of the Alvin soils. Orio soils are poorly drained and are in shallow depressions.

Typical pedon of Alvin fine sandy loam, 2 to 5 percent slopes; 235 feet south and 2,160 feet west of

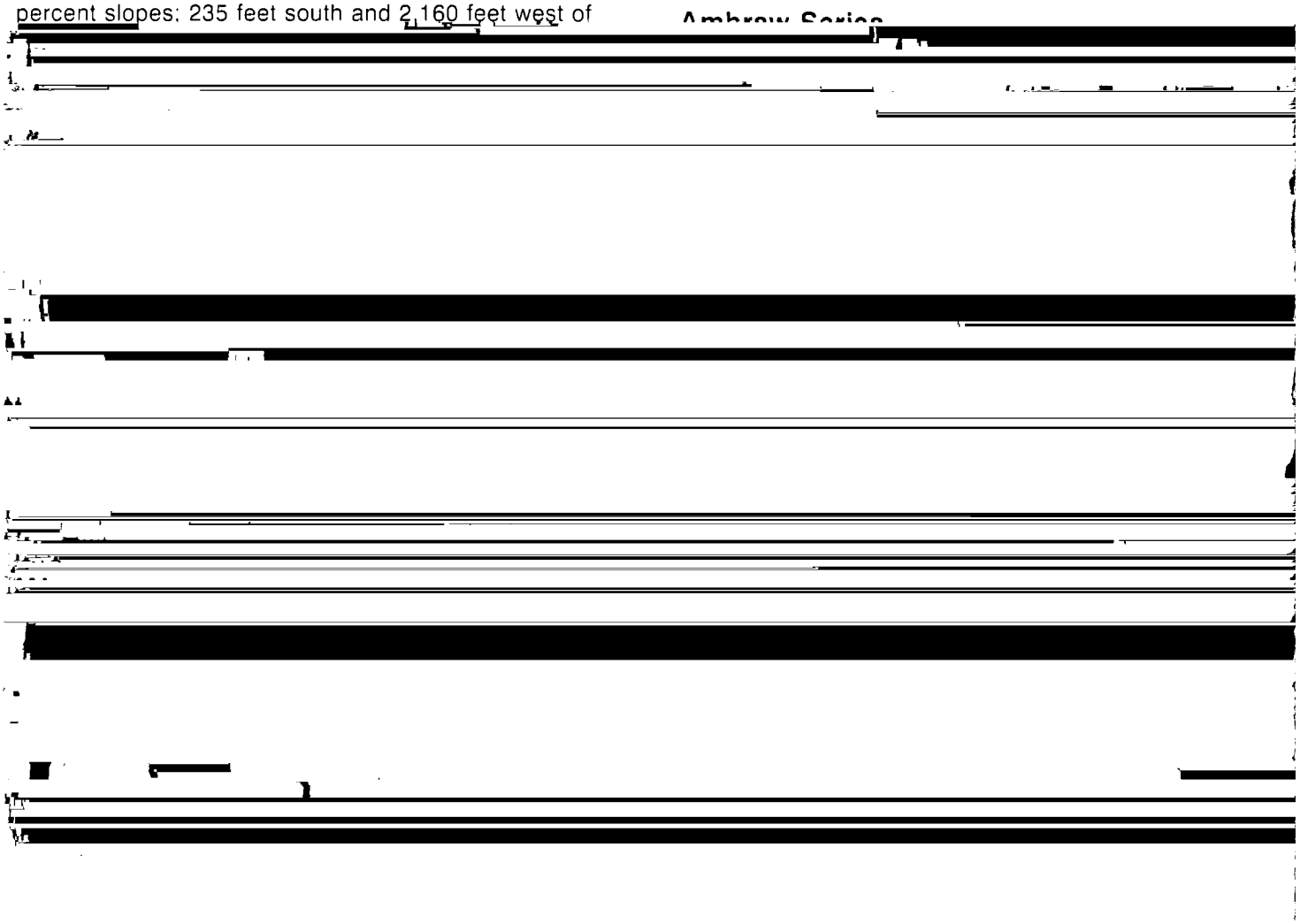
(10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

BC—48 to 53 inches; yellowish brown (10YR 5/4) very fine sandy loam; weak medium subangular blocky structure; very friable; few very fine roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; strongly acid; gradual smooth boundary.

C—53 to 60 inches; yellowish brown (10YR 5/4) very fine sandy loam; massive; very friable; few very fine roots; strongly acid.

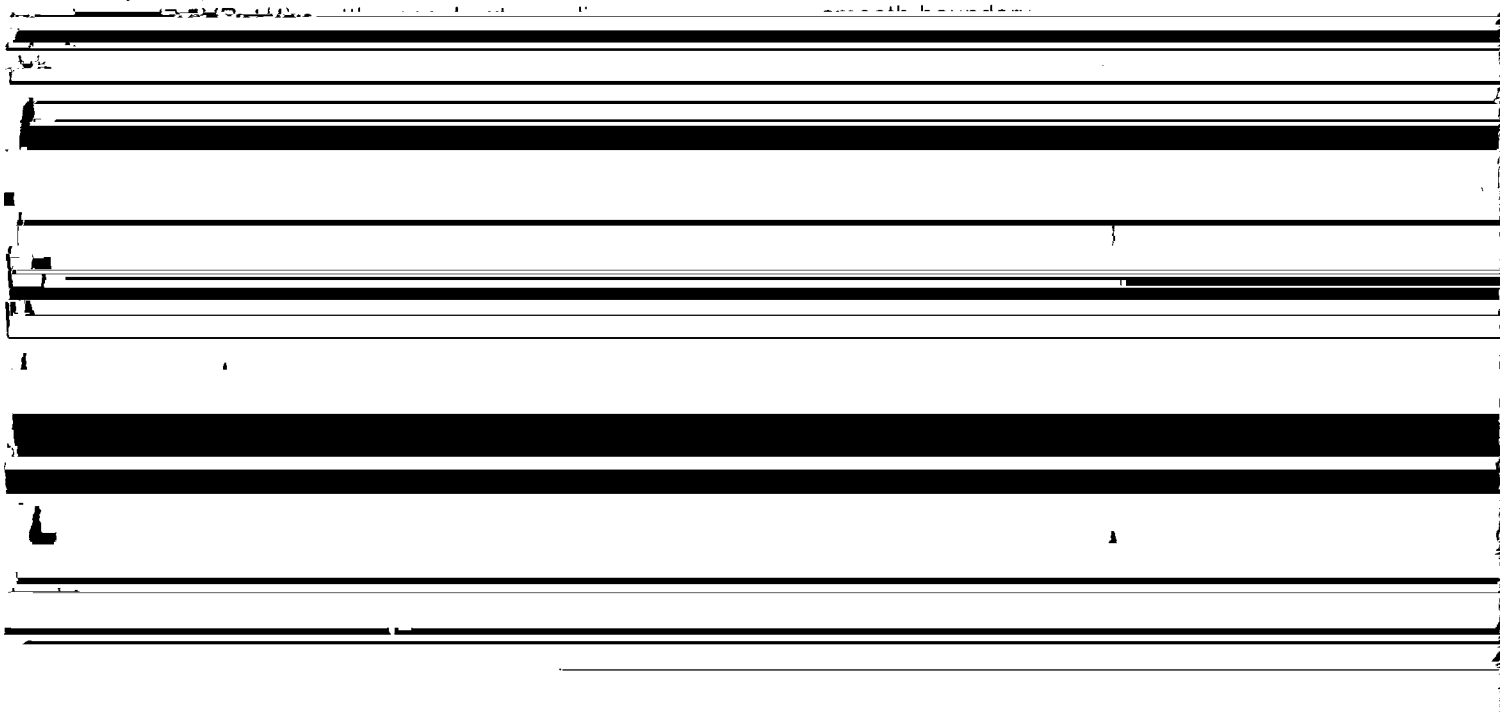
The solum ranges from 45 to more than 60 inches in thickness. The Ap or A horizon has value of 3 or 4 and chroma of 2 or 3. In uncultivated areas, an E horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 or 4. The Bt horizon has hue of 10YR or 7.5YR and chroma of 4 to 6. It is loam, very fine sandy loam, fine sandy loam, or sandy loam.

Ambraw Series



Bg1—14 to 28 inches; dark gray (10YR 4/1) clay loam; many fine prominent reddish brown (5YR 4/3) and

roots; many faint dark brown (10YR 3/3) organic coatings on faces of peds; mildly alkaline; abrupt



subangular blocky structure; friable; few very fine roots; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bg2—28 to 38 inches; dark gray (10YR 4/1) clay loam; few fine distinct dark yellowish brown (10YR 4/4) mottles; moderate medium subangular blocky structure; friable; few very fine roots; neutral; clear smooth boundary.

BCg—38 to 48 inches; gray (10YR 5/1) clay loam; many fine distinct strong brown (7.5YR 5/6) mottles and common fine faint light gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable; neutral; clear smooth boundary.

Cg—48 to 60 inches; mottled gray (10YR 5/1), strong brown (7.5YR 5/6), and light gray (10YR 6/1) stratified clay loam and loam; massive; friable; neutral.

The solum ranges from 40 to 60 inches in thickness. The mollic epipedon ranges from 10 to 24 inches in thickness.

The Ap and A horizons have value of 2 or 3 and chroma of 1 or 2. The Bg horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2. It is clay loam or loam. The Cg horizon is stratified clay loam to sandy loam.

C1—6 to 14 inches; brown (10YR 4/3) silt loam; massive; friable; few very fine roots; common faint dark brown (10YR 3/3) organic coatings on cleavage planes; mildly alkaline; gradual smooth boundary.

C2—14 to 36 inches; brown (10YR 4/3) and dark brown (10YR 3/3) silt loam; massive; friable; few very fine roots; few medium dark brown (7.5YR 4/4) stains (iron and manganese oxides); mildly alkaline; clear wavy boundary.

Ab1—36 to 45 inches; very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silt loam; common fine faint brown (10YR 4/3) mottles; weak fine and medium granular structure; friable; mildly alkaline; abrupt smooth boundary.

Ab2—45 to 56 inches; black (10YR 2/1) silt loam; weak very fine and fine subangular blocky structure; friable; mildly alkaline; clear smooth boundary.

Ab3—56 to 60 inches; black (10YR 2/1) silty clay loam; weak fine subangular blocky structure; firm; few medium brown (10YR 4/3) krotovina; mildly alkaline.

The depth to the Ab horizon ranges from 20 to 40 inches. The Ap or A horizon has chroma of 2 or 3. The C horizon has value of 3 to 5 and chroma of 2 or 3. The Ab horizon has chroma of 1 or 2.

Beardstown Series

medium granular; friable; few very fine and fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; medium acid; abrupt smooth boundary.

E—9 to 14 inches; dark grayish brown (10YR 4/2) loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak medium platy; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings and common distinct light brownish gray (10YR 6/2) dry silt coatings on faces of peds; common fine and medium dark stains (iron and manganese oxides); medium acid; clear smooth boundary.

BE—14 to 21 inches; brown (10YR 4/3) loam; few fine distinct strong brown (7.5YR 4/6) mottles; weak fine and medium subangular blocky structure; friable; few very fine roots; few faint dark grayish brown (10YR 4/2) clay films and common distinct light brownish gray (10YR 6/2) dry silt coatings on faces of peds; few fine dark stains (iron and manganese oxides); very strongly acid; clear smooth boundary.

Bt1—21 to 32 inches; brown (10YR 5/3) loam; common fine and medium distinct strong brown (7.5YR 4/6) mottles; moderate fine and medium subangular blocky structure; friable; few very fine roots; many faint grayish brown (10YR 5/2) clay films and distinct light gray (10YR 7/2) dry silt coatings on faces of peds; few fine dark concretions and stains (iron and manganese oxides); very strongly acid; clear smooth boundary.

Bt2—32 to 38 inches; grayish brown (10YR 5/2) clay loam; common medium and coarse distinct strong brown (7.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; very fine roots; common faint brown (7.5YR 5/2) clay films and common distinct light gray (10YR 7/2) dry silt coatings on faces of peds; very strongly acid; clear smooth boundary.

Bt3—38 to 41 inches; mottled brown (10YR 5/3), grayish brown (10YR 5/2), and strong brown (7.5YR faces of peds; strongly acid; clear smooth boundary.

C—48 to 60 inches; dark yellowish brown (10YR 4/4) stratified loamy sand and sandy loam; massive; very friable; strongly acid.

The solum ranges from 45 to 60 inches in thickness. The dark color surface layer ranges from 7 to 9 inches in thickness.

The Ap horizon has chroma of 1 or 2. The E horizon is loam or sandy loam. The Bt horizon has value of 4 or 5. It is loam, clay loam, or sandy loam. The C horizon is stratified loam, sandy loam, or loamy sand.

Beaucoup Series

The Beaucoup series consists of poorly drained, moderately slowly permeable soils on flood plains. These soils formed in alluvium. Slope ranges from 0 to 2 percent.

Beaucoup soils are similar to Ambraw and Sawmill soils and commonly are adjacent to Ambraw, Darwin, Dockery, and Sawmill soils. Ambraw and Sawmill soils are in positions similar to those of the Beaucoup soils. Ambraw soils are fine-loamy, and Sawmill soils have a thicker mollic epipedon. Darwin soils are fine textured and are slightly lower on the flood plain than the Beaucoup soils. Dockery soils are somewhat poorly drained and are in slightly higher positions.

Typical pedon of Beaucoup silty clay loam, frequently flooded; 890 feet north and 1,170 feet east of the southwest corner of sec. 32, T. 17 N., R. 12 W.

Ap—0 to 10 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to moderate very fine and fine granular; friable; few very fine roots; slightly acid; abrupt smooth boundary.

A—10 to 18 inches; very dark gray (10YR 3/1) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium subangular blocky structure; firm;

(10YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; many faint dark gray (10YR 4/1) coatings on faces of peds; neutral; clear smooth boundary.

Bg2—32 to 41 inches; mottled grayish brown (2.5Y 5/2), yellowish brown (10YR 5/6), and dark grayish brown (2.5Y 4/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular

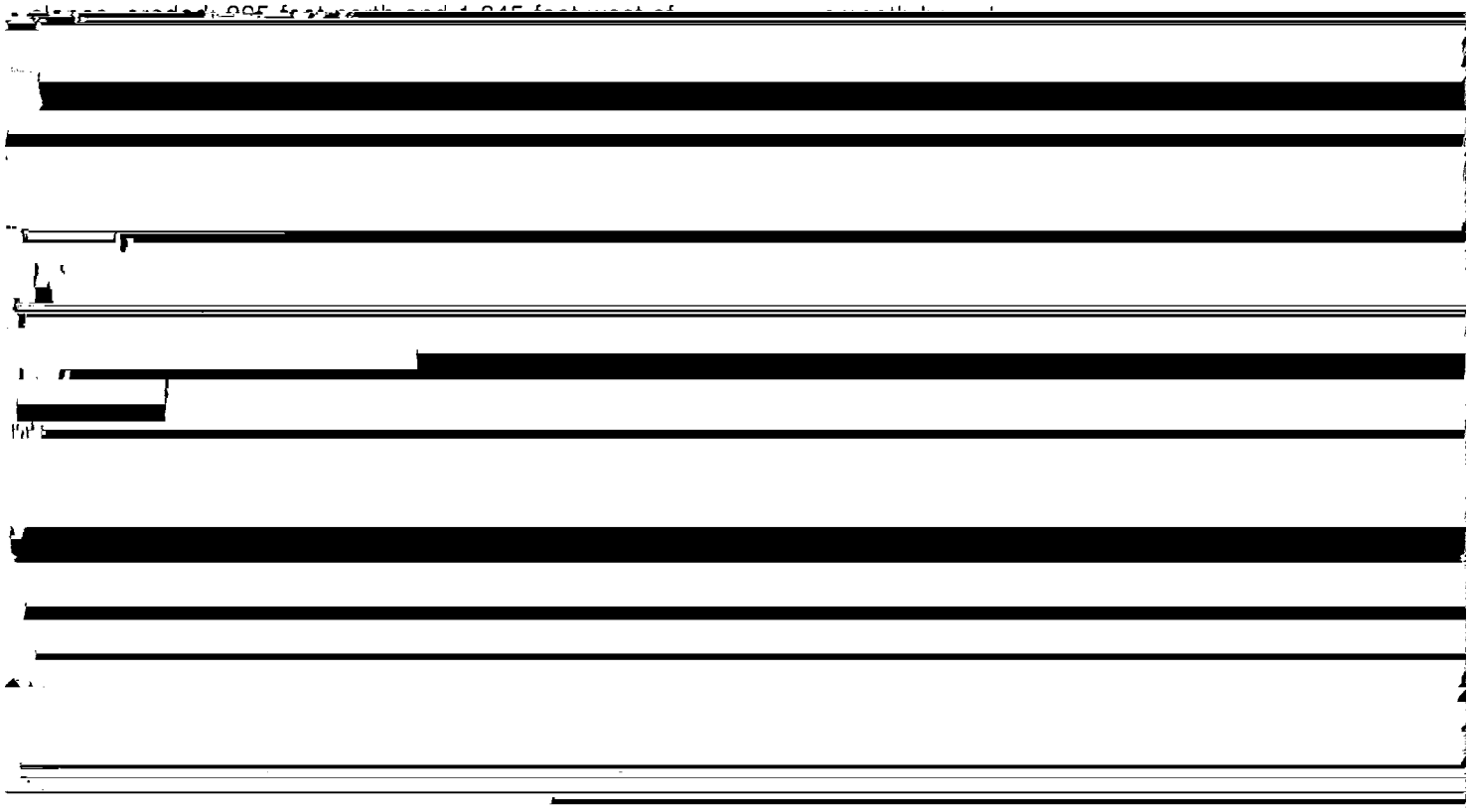
surface layer than that of the Bloomfield soils.

Typical pedon of Bloomfield fine sand, 1 to 7 percent slopes; 2,511 feet south and 612 feet west of the northeast corner of sec. 33, T. 18 N., R. 11 W.

Ap—0 to 9 inches; dark brown (10YR 4/3) fine sand, pale brown (10YR 6/3) dry; weak fine and medium subangular blocky structure parting to weak fine granular; very friable; few very fine roots; neutral;

and Tallula soils are not calcareous within a depth of 20 inches and are on side slopes at a higher elevation than the Bold soils.

Typical pedon of Bold silt loam, 7 to 15 percent [redacted]



the southeast corner of sec. 14, T. 17 N., R. 11 W.

Ap—0 to 8 inches; yellowish brown (10YR 5/4) silt loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure parting to weak fine granular; friable; few very fine roots; few fine and medium concretions (calcium carbonate); strong effervescence; mildly alkaline; abrupt smooth boundary.

C1—8 to 26 inches; light brownish gray (10YR 6/2) silt loam; common medium and coarse distinct yellowish brown (10YR 5/6) mottles; massive; friable; few very fine roots; few fine and medium dark stains (iron and manganese oxides); few fine and medium snail shells; strong effervescence; moderately alkaline; gradual smooth boundary.

C2—26 to 60 inches; light brownish gray (10YR 6/2) silt loam; common medium and coarse distinct yellowish brown (10YR 5/6) mottles and few medium and coarse prominent strong brown (7.5YR 5/6) mottles; massive; friable; few fine and medium snail shells; slight effervescence; mildly alkaline.

The A horizon ranges from 4 to 10 inches in

Ap—0 to 7 inches; black (10YR 2/1) clay loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure parting to weak fine granular; friable; few very fine roots; neutral; clear

A1—7 to 15 inches; black (10YR 2/1) clay loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to weak medium granular; friable; few very fine roots; neutral; clear smooth boundary.

A2—15 to 30 inches; mottled black (10YR 2/1) and very dark gray (10YR 3/1) clay loam, dark grayish brown (10YR 4/2) dry; weak fine and medium subangular blocky structure; friable; few very fine roots; neutral; clear smooth boundary.

Bg1—30 to 36 inches; mottled very dark gray (10YR 3/1) and dark grayish brown (2.5Y 4/2) clay loam; weak medium subangular blocky structure; firm; few very fine roots; common faint black (10YR 2/1) organic coatings on faces of peds; few fine dark stains (iron and manganese oxides); less than 2 percent fine and medium gravel; neutral; clear smooth boundary.

Bg2—36 to 46 inches; dark gray (10YR 4/1) clay loam; few fine distinct strong brown (7.5YR 4/6) mottles; weak medium subangular blocky structure; friable; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine and medium

clay loam. Strata of coarser textures are in some pedons.

Darwin Series

The Darwin series consists of poorly drained, very slowly permeable soils on flood plains. These soils formed in alluvium. Slope ranges from 0 to 2 percent.

Darwin soils commonly are adjacent to Ambraw and Beaucoup soils. Ambraw and Beaucoup soils are slightly higher on flood plains than the Darwin soils. Ambraw soils are fine-loamy, and Beaucoup soils are fine-silty.

Typical pedon of Darwin silty clay; 1,740 feet south and 1,380 feet west of the northeast corner of sec. 14, T. 17 N., R. 13 W.

Ap—0 to 12 inches; very dark gray (10YR 3/1) silty clay, dark grayish brown (10YR 4/2) dry; weak

[redacted]

medium subangular blocky structure parting to weak very fine and fine granular; firm; few very fine roots; neutral; abrupt smooth boundary.

A—12 to 21 inches; very dark gray (10YR 3/1) silty clay, gray (10YR 5/1) dry; common fine and medium distinct dark yellowish brown (10YR 4/4) mottles; weak fine and medium subangular blocky structure; firm; few very fine roots; few fine dark stains (iron and manganese oxides); neutral; clear smooth boundary.

Bg1—21 to 40 inches; dark gray (10YR 4/1) silty clay;

The mollic epipedon ranges from 15 to 24 inches in thickness.

The Ap or A horizon has value of 2 or 3. The Bg horizon has value of 4 to 6.

Dickinson Series

The Dickinson series consists of well drained soils on stream terraces. They are moderately rapidly permeable in the upper part of the profile and rapidly permeable in the lower part. These soils formed in loamy and sandy material. Slope ranges from 1 to 5 percent.

Dickinson soils commonly are adjacent to Ambraw, Orio, Raddle, and Sparta soils. The Ambraw and Orio soils are poorly drained and fine-loamy. Ambraw soils are on flood plains, and Orio soils are in shallow depressions. Raddle soils are fine-silty and are slightly lower on terraces than the Dickinson soils. Sparta soils are sandy and excessively drained. They are slightly higher on terraces than the Dickinson soils.

Typical pedon of Dickinson fine sandy loam, 1 to 5 percent slopes; 90 feet south and 450 feet east of the northwest corner of sec. 36, T. 17 W., R. 13 W.

Ap—0 to 12 inches; very dark grayish brown (10YR 3/2) fine sandy loam, dark brown (10YR 4/3) dry; weak medium subangular blocky structure parting to weak fine granular; friable; few very fine roots; medium acid; clear smooth boundary.

A—12 to 20 inches; dark brown (10YR 3/3) fine sandy

and yellowish brown (10YR 5/4) sand; single grained; loose; medium acid.

The solum ranges from 40 to 50 inches in thickness. The mollic epipedon ranges from 15 to 24 inches in thickness.

The Ap or A horizon has value of 2 or 3. It is fine sandy loam or sandy loam. The Bw horizon has value of 4 or 5. The C horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6. It is loamy sand or sand.

Dockery Series

The Dockery series consists of somewhat poorly drained, moderately permeable soils on flood plains. These soils formed in alluvium. Slope ranges from 0 to 2 percent.

Dockery soils commonly are adjacent to Beaucoup and Ross soils. Beaucoup soils are slightly lower on flood plains than the Dockery soils and are nearly

thickness. It has chroma of 2 to 4. The C horizon has chroma of 1 to 3 and is stratified silt loam and silty clay loam.

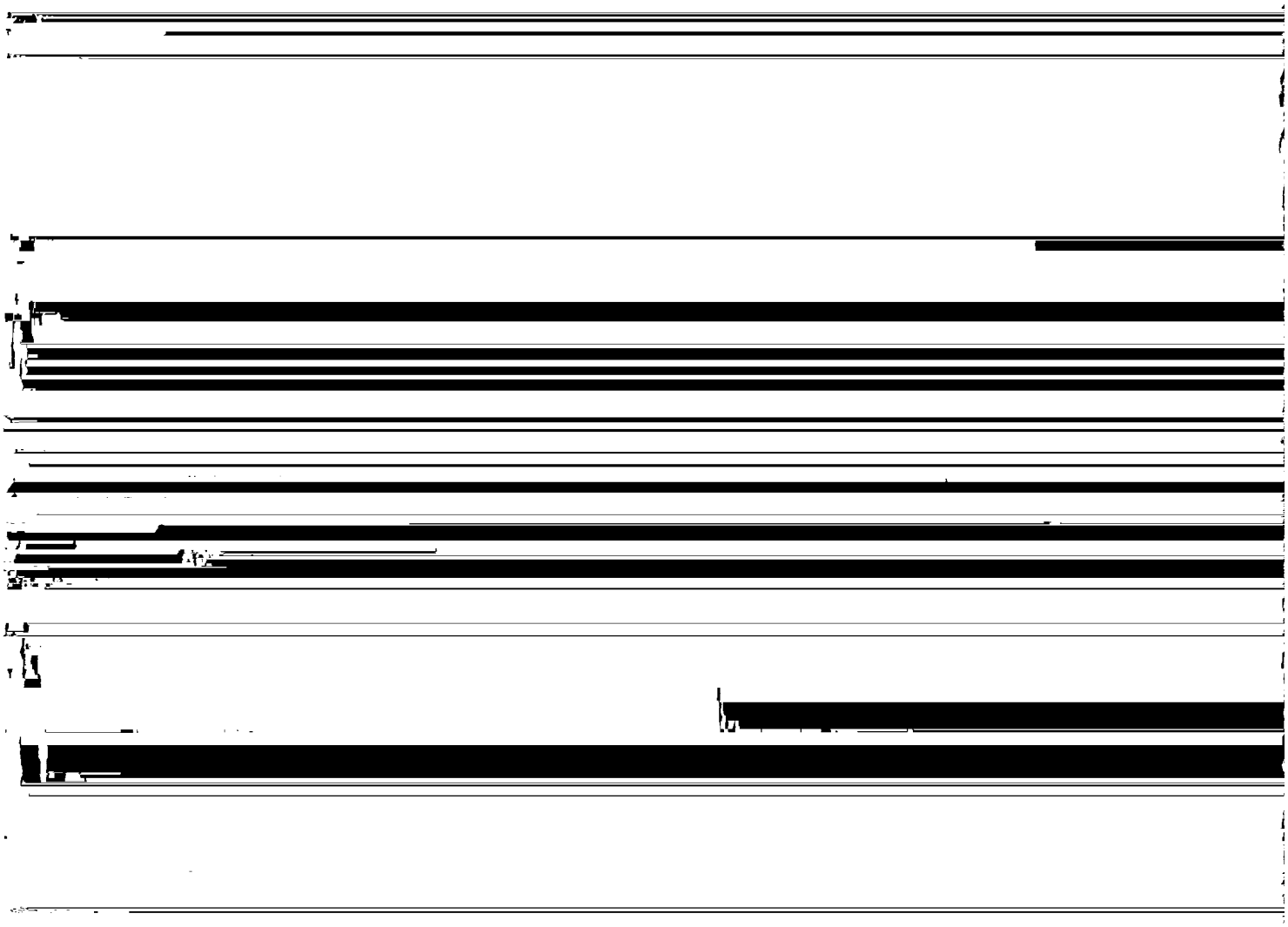
Elkhart Series

The Elkhart series consists of well drained, moderately permeable soils on uplands. These soils formed in loess. Slope ranges from 5 to 10 percent.

Elkhart soils are similar to Tama soils and commonly are adjacent to Ipava, Tallula, and Tama soils. Ipava and Tama soils have a thicker solum and are in less sloping positions at a higher elevation than the Elkhart soils. Tallula soils are coarse-silty and are in positions similar to those of the Elkhart soils.

Typical pedon of Elkhart silt loam, 5 to 10 percent slopes, eroded; 210 feet south and 108 feet east of the northwest corner of sec. 6, T. 17 N., R. 8 W.

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2)



The solum thickness and depth to carbonates range from 24 to 35 inches. The mollic epipedon ranges from 10 to 13 inches in thickness.

The Ap horizon has chroma of 2 or 3. The Bt horizon has chroma of 4 to 6. The C horizon has value of 4 to 6 and chroma of 2 to 6.

Fayette Series

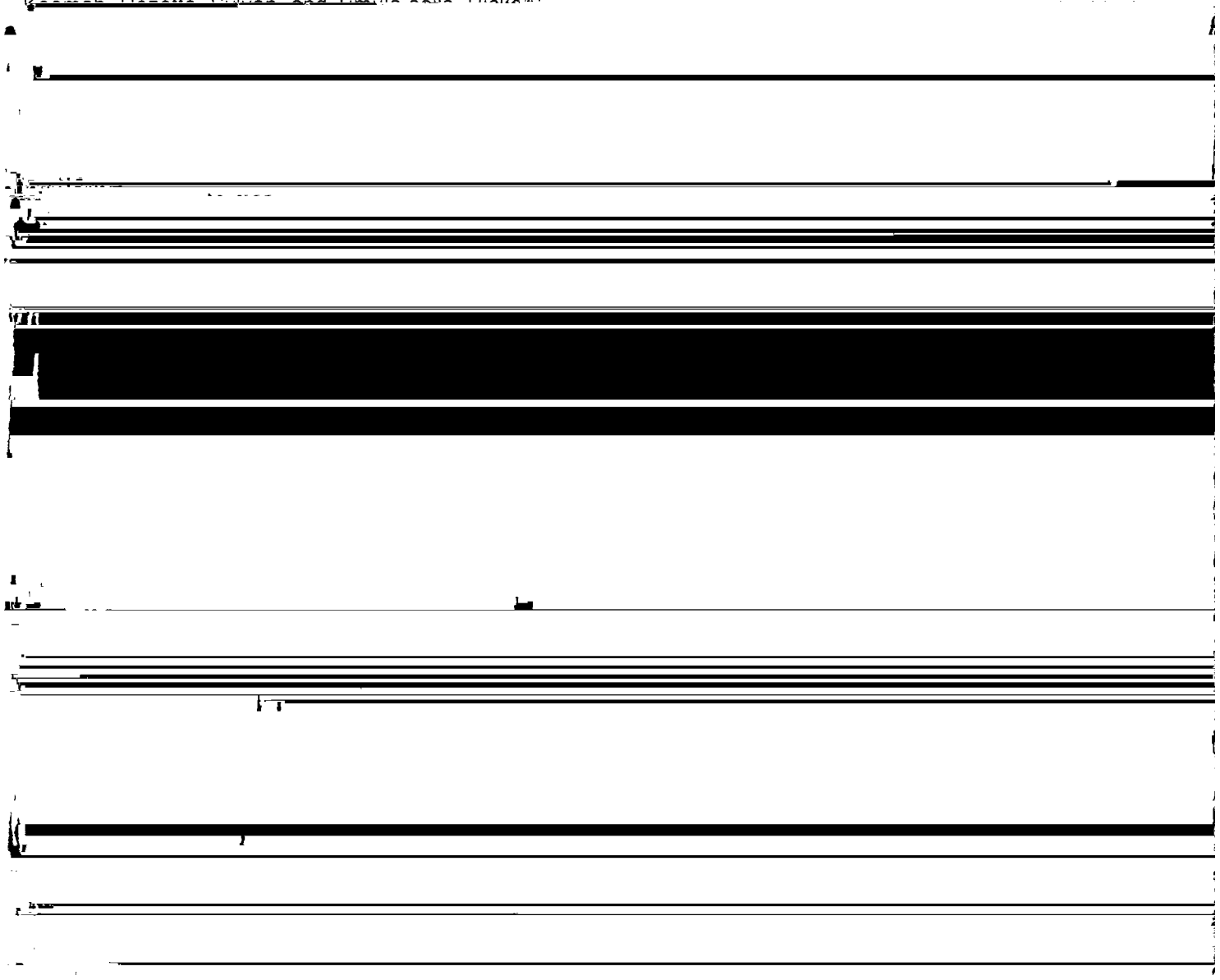
The Fayette series consists of deep, well drained, moderately permeable soils on uplands. These soils formed in loess. Slope ranges from 2 to 30 percent.

Fayette soils are similar to Rozetta, Seaton, and Sylvan soils and commonly are adjacent to Hickory, [illegible]

distinct dark brown (10YR 4/3) clay films and very pale brown (10YR 7/3) dry silt coatings on faces of peds; medium acid; clear smooth boundary.

Bt2—24 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular and angular blocky; firm; few very fine roots; many distinct dark brown (10YR 4/3) clay films and few distinct very pale brown (10YR 7/3) dry silt coatings on faces of peds; few fine dark stains (iron and manganese oxides); strongly acid; clear smooth boundary.

Bt3—37 to 43 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting



Hoopeston, Orio, Plainfield, and Sparta soils. Ambraw soils are fine-loamy. They are on flood plains and are poorly drained. Hoopeston soils are slightly higher on terraces than the Gilford soils and are somewhat poorly drained. Orio soils have a thinner, dark surface layer. They are in shallow depressions and are poorly drained. Plainfield and Sparta soils are sandy. They are higher on terraces than the Gilford soils and are excessively drained.

Typical pedon of Gilford sandy loam; 2,123 feet south and 325 feet west of the northeast corner of sec. 27, T. 18 N., R. 12 W.

Ap—0 to 10 inches; black (10YR 2/1) sandy loam, very dark grayish brown (10YR 3/2) dry; weak medium subangular blocky structure parting to weak fine granular; friable; few very fine roots; medium acid; abrupt smooth boundary.

A—10 to 18 inches; very dark grayish brown (10YR 3/2) sandy loam, dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) dry; common fine distinct dark brown (7.5YR 4/4) mottles; weak fine and

Hamburg Series

The Hamburg series consists of somewhat excessively drained, moderately permeable soils on uplands. These soils formed in loess. Slope ranges from 20 to 60 percent.

Hamburg soils are similar to Bold soils and commonly are adjacent to Fayette, Hickory, Seaton, and Timula soils. These soils are well drained and have a higher content of clay below the surface layer than the Hamburg soils. Fayette soils are on side slopes and ridges at a higher elevation then the Hamburg soils. Hickory soils formed in glacial till and are on side slopes at a lower elevation than the Hamburg soils. Seaton and Timula soils are in positions similar to those of the Hamburg soils.

Typical pedon of Hamburg silt loam, 35 to 60 percent slopes; 450 feet north and 810 feet west of the center of sec. 5, T. 18 N., R. 9 W.

A—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate

carbonates within a depth of 40 inches. Ipava and Tama soils are on ridges above the Hartsburg soils. Ipava soils are fine textured and somewhat poorly drained, and Tama soils are moderately well drained and well drained. Sable soils are slightly higher on the landscape than the Hartsburg soils.

Typical pedon of Hartsburg silty clay loam; 1,296 feet south and 354 feet west of the center of sec. 9, T. 17 N., R. 9 W.

Ap—0 to 6 inches; black (N 2/0) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

A—6 to 13 inches; black (N 2/0) silty clay loam, dark gray (10YR 4/1) dry; weak fine angular blocky structure; friable; few very fine roots; neutral; clear smooth boundary.

BA—13 to 17 inches; very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) dry; few fine distinct grayish brown (10YR 5/2) and yellowish brown (10YR 5/4) mottles; weak fine subangular blocky structure; friable; few very fine roots; mildly alkaline; clear smooth boundary.

Bg1—17 to 21 inches; dark grayish brown (2.5Y 4/2) [illegible]

BCg—34 to 40 inches; grayish brown (2.5Y 5/2) silt loam; many fine and medium prominent yellowish brown (10YR 5/4 and 5/6) mottles; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common faint dark grayish brown (10YR 4/2) coatings on faces of peds; few fine concretions (calcium carbonate); violent effervescence; mildly alkaline; clear smooth boundary.

Cg—40 to 60 inches; grayish brown (2.5Y 5/2) silt loam; many medium and coarse prominent yellowish brown (10YR 5/6 and 5/8) mottles; massive with some distinct vertical cleavage; friable; few faint dark grayish brown (10YR 4/2) coatings on cleavage planes; few fine concretions (calcium carbonate); violent effervescence; moderately alkaline.

The solum ranges from 30 to 40 inches in thickness. The depth to carbonates ranges from 17 to 35 inches. The mollic epipedon ranges from 12 to 20 inches in thickness.

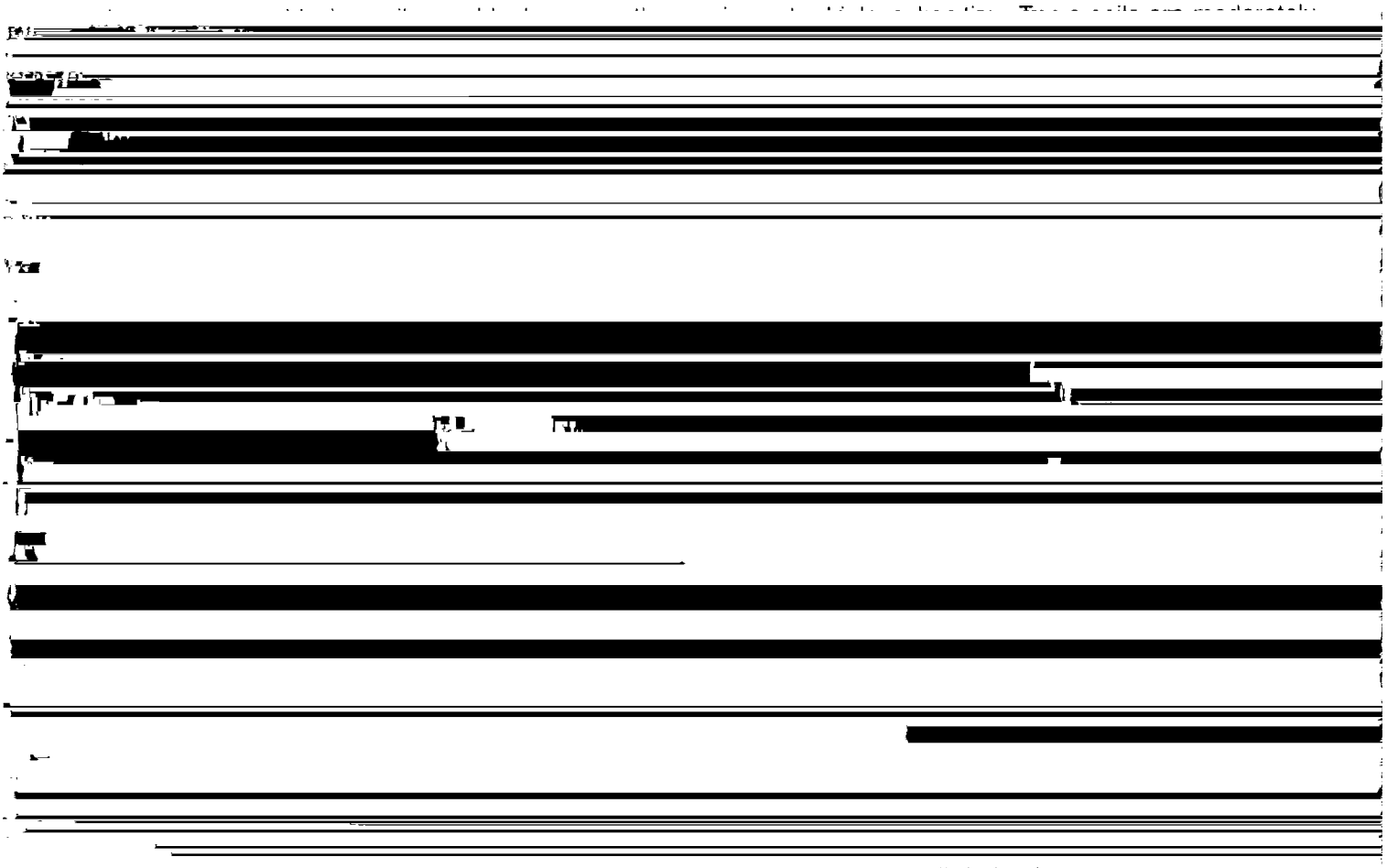
The Ap and A horizons have hue of 10YR, value of 2 or 3, and chroma of 1; or they are neutral and have value of 2 or 3. The Bg horizon has hue of 10YR, 2.5Y,

roots; medium acid; abrupt smooth boundary.

E1—4 to 8 inches; mixed brown (10YR 5/3) and dark grayish brown (10YR 4/2) loam, light gray (10YR 7/2) dry; moderate thin platy structure; friable; few very fine and fine roots; common prominent white (10YR 8/2) dry silt coatings on faces of peds; 2

and few distinct brown (10YR 4/3) clay films on faces of peds; few fine dark stains (iron and manganese oxides); 5 percent, by volume, fine and medium gravel; neutral.

The solum ranges from 42 to more than 60 inches in



boundary.

Bw1—18 to 26 inches; brown (10YR 5/3) sandy loam; few fine faint grayish brown (10YR 5/2) mottles; weak medium subangular blocky structure; friable; few very fine roots; common faint dark brown (10YR 4/3) and dark grayish brown (10YR 4/2) coatings on faces of peds; common fine and medium dark brown (7.5YR 4/4) concretions and stains (iron and manganese oxides); medium acid; clear smooth boundary.

Bw2—26 to 36 inches; brown (10YR 5/3) sandy loam; few fine faint grayish brown (10YR 5/2) mottles; weak fine and medium subangular blocky structure; friable; few very fine roots; few faint dark brown (10YR 4/3) coatings on faces of peds; common fine and medium dark brown (7.5YR 4/4) concretions and stains (iron and manganese oxides); medium acid; clear smooth boundary.

BC—36 to 41 inches; mottled yellowish brown (10YR 5/4) and pale brown (10YR 6/3) loamy sand; weak fine and medium subangular blocky structure; loose; few fine dark brown (7.5YR 4/4) concretions and stains (iron and manganese oxides); medium acid; well drained and well drained.

Typical pedon of Ipava silt loam, 0 to 2 percent slopes; 242 feet south and 74 feet east of the center of sec. 3, T. 17 N., R. 9 W.

Ap—0 to 10 inches; black (10YR 2/1) silt loam, gray (10YR 5/1) dry; weak fine and medium subangular blocky structure parting to weak fine granular; friable; few very fine roots; slightly acid; clear smooth boundary.

A—10 to 21 inches, very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; moderate very fine and fine subangular blocky structure; firm; few very fine roots; common faint black (10YR 2/1) organic coatings on faces of peds; slightly acid; clear smooth boundary.

BA—21 to 25 inches; mottled brown (10YR 4/3), dark grayish brown (10YR 4/2), and yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; fine dark stains

structure; firm; few very fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common distinct very dark grayish brown (10YR 3/2) organic coatings in root channels; common medium very dark gray (10YR 3/1) wormcasts; few fine dark stains (iron and manganese oxides); neutral; clear smooth boundary.

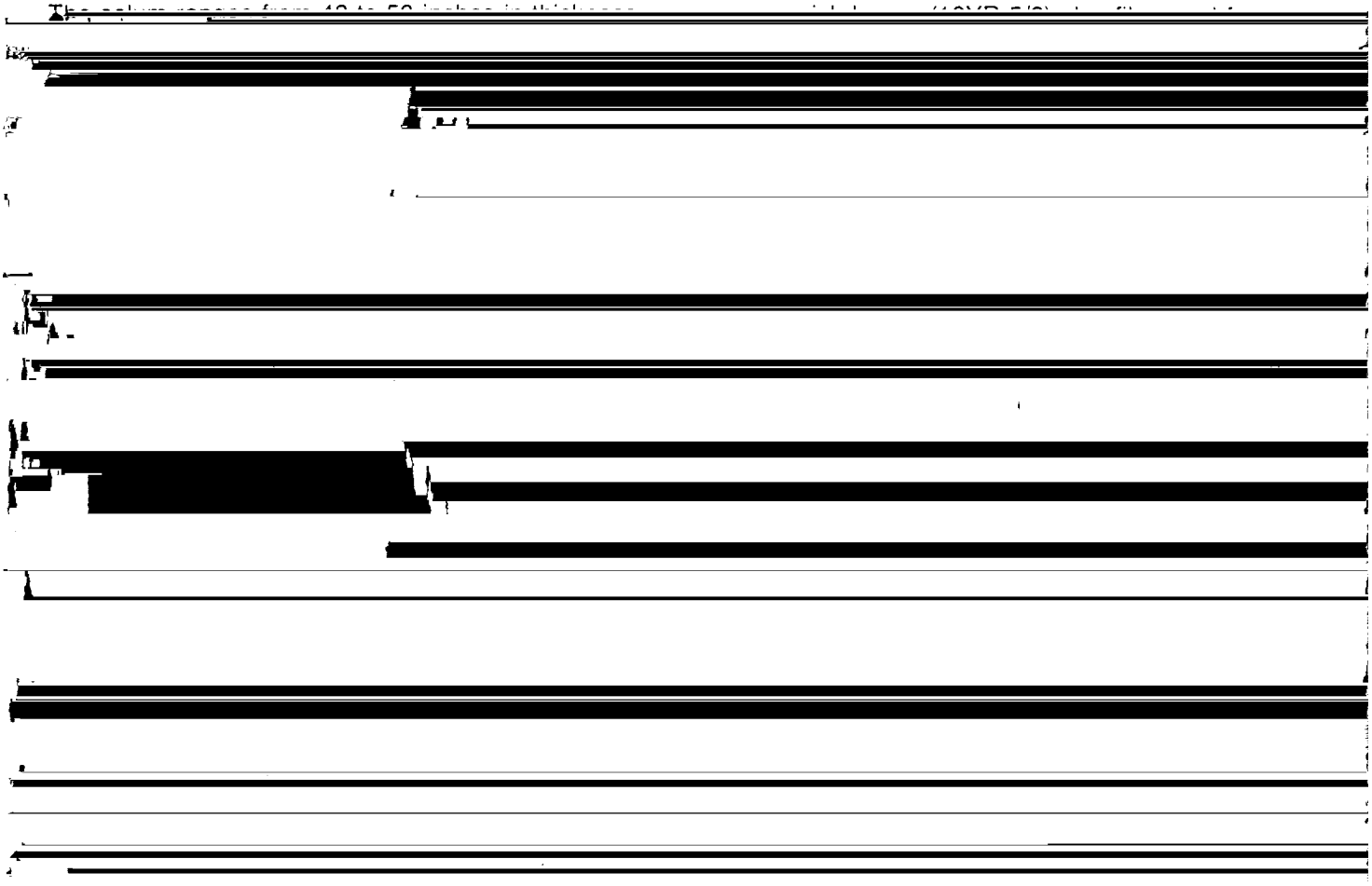
BCg—45 to 52 inches; mottled light brownish gray (2.5Y 6/2), light yellowish brown (2.5Y 6/4), brownish yellow (10YR 6/6), and strong brown (7.5YR 4/6) silt loam; weak medium and coarse subangular blocky structure; firm; few medium very dark gray (10YR 3/1) wormcasts; few fine dark stains (iron and manganese oxides); mildly alkaline; gradual smooth boundary.

Cg—52 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; few medium and coarse distinct brownish yellow (10YR 6/6) mottles and few medium prominent strong brown (7.5YR 4/6) mottles; massive; friable; slight effervescence; mildly alkaline.

E—8 to 12 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; few fine distinct yellowish brown (10YR 5/4) mottles; weak medium platy structure parting to weak fine subangular blocky; friable; few very fine roots; few faint dark grayish brown (10YR 4/2) coatings and common prominent white (10YR 8/1) dry silt coatings on faces of peds; few fine dark concretions and stains (iron and manganese oxides); slightly acid; abrupt smooth boundary.

EB—12 to 14 inches; brown (10YR 5/3) silt loam; common fine and medium distinct yellowish brown (10YR 5/6) mottles; moderate very fine and fine angular blocky structure; friable; few very fine roots; common faint grayish brown (10YR 5/2) coatings and common prominent white (10YR 8/1) dry silt coatings on faces of peds; few fine dark concretions and stains (iron and manganese oxides); medium acid; abrupt smooth boundary.

Bt1—14 to 18 inches; brown (10YR 5/3) silty clay loam; few fine faint yellowish brown (10YR 5/4) mottles; moderate very fine and fine subangular blocky structure; firm; few very fine roots; common distinct



few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) clay films in root channels; common fine dark stains (iron and manganese oxides); slightly acid; clear smooth boundary.

BC—52 to 60 inches; grayish brown (10YR 5/2) silt loam; many medium distinct yellowish brown (10YR 5/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine dark stains (iron and manganese oxides); slightly acid.

The solum ranges from 40 to more than 60 inches in thickness. The Ap or A horizon has chroma of 1 or 2. The E horizon has value of 4 or 5. The Bt horizon has value of 4 or 5 and chroma of 2 to 4.

Landes Series

The Landes series consists of well drained soils on flood plains. These soils are moderately rapidly permeable in the upper part of the profile and rapidly permeable in the lower part. They formed in loamy and

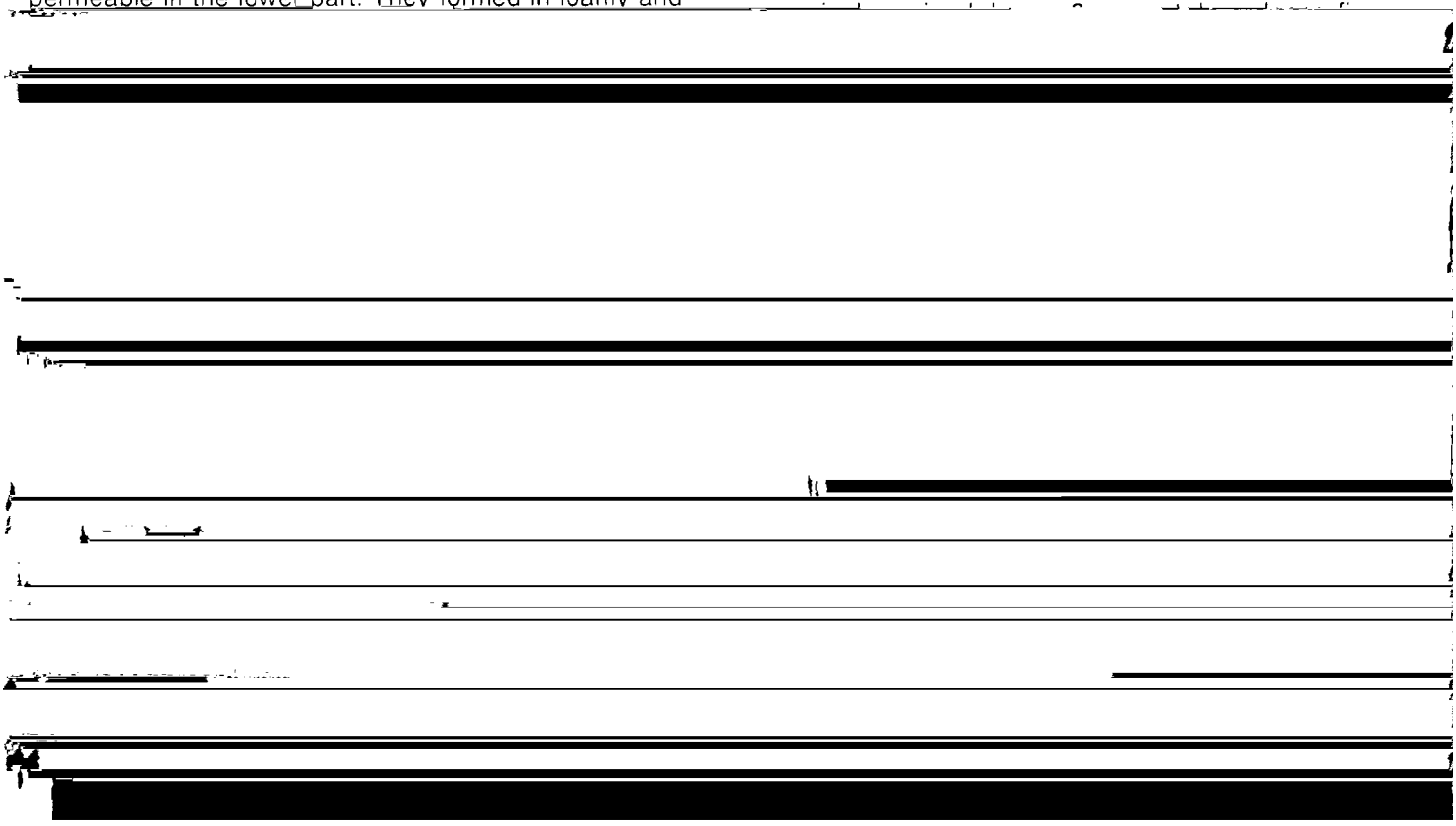
Bw1—19 to 23 inches; brown (10YR 4/3) loam; weak fine and medium subangular blocky structure; friable; few very fine roots; many faint dark brown (10YR 3/3) and few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw2—23 to 28 inches; brown (10YR 4/3) fine sandy loam; weak medium subangular blocky structure; friable; few very fine roots; common faint dark brown (10YR 3/3) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw3—28 to 32 inches; brown (10YR 4/3) and dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; very friable; few very fine roots; common faint dark brown (10YR 3/3) organic coatings on faces of peds; less than 2 percent, by volume, fine gravel; neutral; clear smooth boundary.

BC—32 to 36 inches; dark yellowish brown (10YR 4/4) and brown (10YR 4/3) loamy sand; weak medium subangular blocky structure; very friable; few very fine roots; 5 percent, by volume, fine gravel; neutral; clear smooth boundary.

C—36 to 60 inches; yellowish brown (10YR 5/4) sand;



grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure parting to weak fine and medium granular; friable; few very fine roots; slightly acid; abrupt smooth boundary.

A—9 to 27 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

C1—27 to 42 inches; very dark grayish brown (10YR 3/2) silt loam; few medium faint dark yellowish brown (10YR 3/4) mottles; massive; friable; few very fine roots; neutral; gradual smooth boundary.

C2—42 to 60 inches; very dark gray (10YR 3/1) silt loam; few medium distinct dark yellowish brown (10YR 4/4) mottles; massive; friable; mildly alkaline.

The solum and the mollic epipedon range from 24 to 32 inches in thickness. The Ap and A horizons have value of 2 or 3. The C horizon has value of 3 to 6 and chroma of 1 to 3. It is silt loam or silty clay loam and has loam strata in some pedons.

Littleton Series

The Littleton series consists of somewhat poorly

faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; gradual smooth boundary.

Bw—36 to 44 inches; mottled dark grayish brown (10YR 4/2), dark brown (10YR 4/3), and yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; gradual smooth boundary.

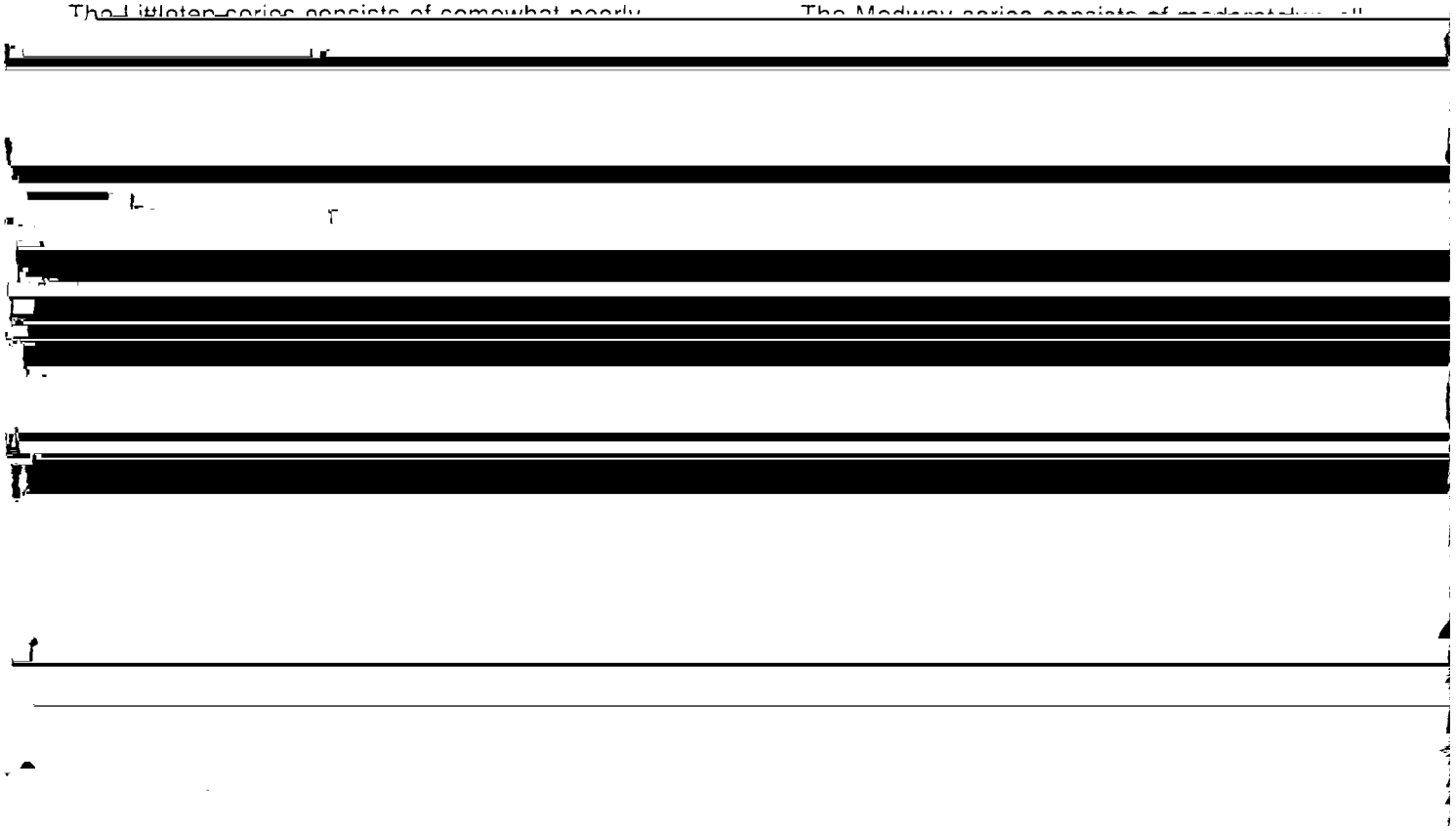
BC—44 to 60 inches; mottled dark brown (10YR 4/3), dark grayish brown (10YR 4/2), and yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral.

The solum ranges from 35 to more than 60 inches in thickness. The mollic epipedon ranges from 24 to 36 inches in thickness.

The Ap and A horizons have value of 2 or 3 and chroma of 1 or 2. The Bw horizon has value of 3 to 5.

Medway Series

The Medway series consists of moderately



very fine roots; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bw1—15 to 23 inches; dark brown (10YR 4/3) loam; few fine distinct brown (7.5YR 4/4) mottles; weak fine and medium subangular blocky structure; friable; few very fine roots; few faint dark grayish brown (10YR 4/2) coatings and common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine dark concretions (iron and manganese oxides); slightly acid; gradual smooth boundary.

Bw2—23 to 28 inches; brown (10YR 5/3) loam; few fine distinct brown (7.5YR 4/4) mottles; weak fine and medium subangular blocky structure; friable; few very fine roots; few faint dark grayish brown (10YR

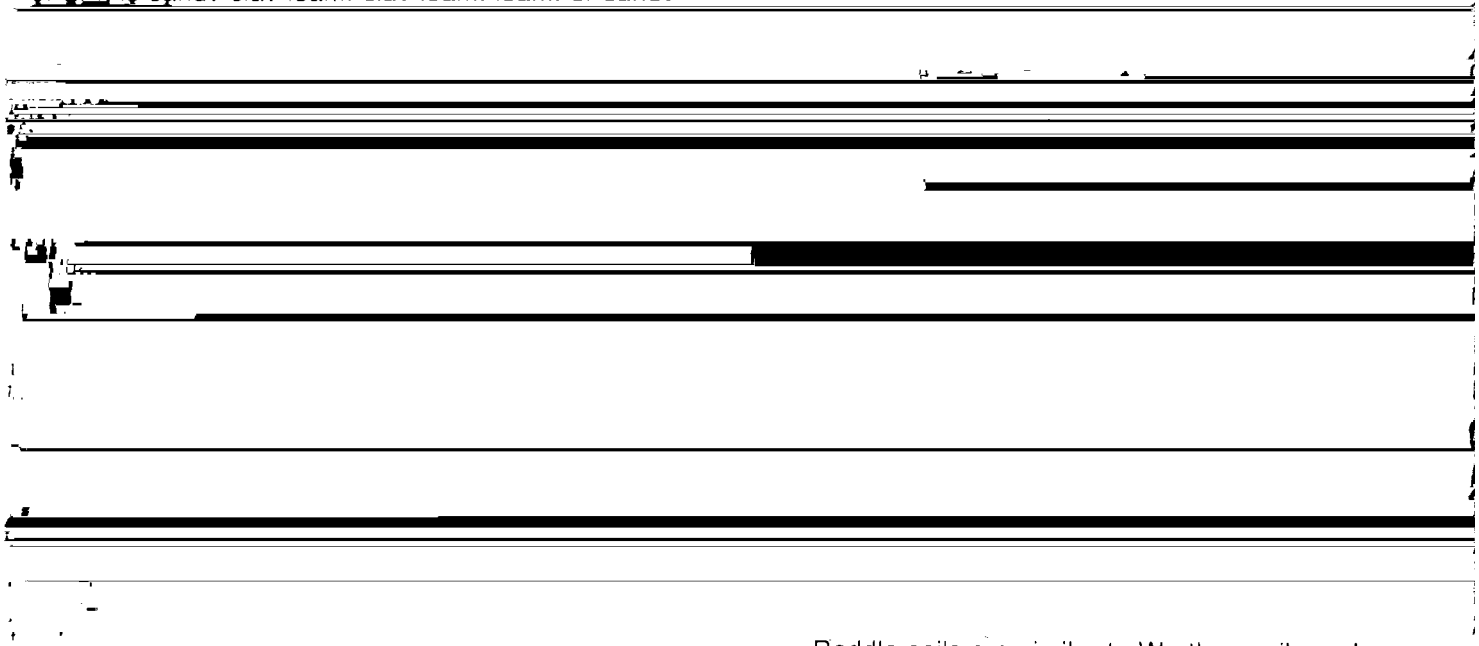
material. Slope ranges from 0 to 2 percent.

Orio soils are similar to Beardstown soils and commonly are adjacent to Beardstown, Hoopeston, Plainfield, and Sparta soils. Beardstown and Hoopeston soils are slightly higher on stream terraces than Orio soils and are somewhat poorly drained. Plainfield and Sparta soils are higher on terraces than the Orio soils and are sandy and excessively drained.

Typical pedon of Orio loam; 2,068 feet north and 1,400 feet east of the southwest corner of sec. 28, T. 18 N., R. 12 W.

Ap—0 to 9 inches; very dark gray (10YR 3/1) loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak fine granular; friable; few very fine roots; neutral; abrupt

1 or 2. The E horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2. It is loam, fine sandy loam, sandy loam, or loamy sand. The Btg horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2. It is sandy clay loam, clay loam, loam, or sandy



Plainfield Series

The Plainfield series consists of excessively drained, rapidly permeable soils on stream terraces and uplands. These soils formed in sandy material. Slope ranges from 1 to 30 percent.

Plainfield soils are similar to Bloomfield soils and commonly are adjacent to Bloomfield, Gilford, and Sparta soils. Bloomfield and Sparta soils are in positions similar to those of the Plainfield soils. Bloomfield soils are somewhat excessively drained and have an argillic horizon. Sparta and Gilford soils have a mollic epipedon. Gilford soils are lower on terraces and are very poorly drained.

Typical pedon of Plainfield sand, 1 to 7 percent slopes; 1,048 feet north and 320 feet west of the southeast corner of sec. 35, T. 18 N., R. 12 W.

Ap—0 to 8 inches; dark brown (10YR 3/3) sand, pale brown (10YR 6/3) dry; weak medium subangular blocky structure parting to weak fine granular; very friable; few very fine roots; medium acid; abrupt smooth boundary.

Bw1—8 to 16 inches; dark yellowish brown (10YR 4/4) sand; weak fine and medium subangular blocky structure; very friable; few very fine roots; common

Raddle Series

The Raddle series consists of well drained, moderately permeable soils on alluvial fans, foot slopes, and stream terraces. These soils formed in alluvium or

Raddle soils are similar to Worthen soils and commonly are adjacent to Littleton and Worthen soils. Littleton soils are in positions slightly lower than those of the Raddle soils and are somewhat poorly drained. Worthen soils are in nearly level areas at a lower elevation than the Raddle soils. Littleton and Worthen soils have a thicker mollic epipedon.

Typical pedon of Raddle silt loam, 2 to 5 percent slopes; 1,200 feet south and 195 feet east of the northwest corner of sec. 35, T. 19 N., R. 9 W.

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure parting to weak fine granular; friable; few very fine roots; few distinct very pale brown (10YR 7/3) dry silt coatings on faces of peds; neutral; clear smooth boundary.

A—11 to 16 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure parting to weak fine and medium granular; friable; few very fine roots; common faint very dark grayish brown (10YR 3/2) organic coatings and few distinct very pale brown (10YR 7/3) dry silt coatings on faces of peds; neutral; clear smooth boundary.

BA—16 to 22 inches; dark brown (10YR 4/3 and 3/3) silt loam; weak fine and medium subangular blocky structure; friable; few very fine roots; common faint

brown (10YR 4/3) coatings on faces of peds; slightly acid, gradual smooth boundary.

BC—52 to 60 inches; yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; few very fine roots; few faint brown (10YR 4/3) coatings on faces of peds; medium acid.

The solum ranges from 45 to more than 60 inches in thickness. The mollic epipedon ranges from 15 to 24 inches in thickness.

The Ap and A horizons have chroma of 1 to 3. The Bw horizon has value of 3 to 5.

Radford Series

The Radford series consists of somewhat poorly drained, moderately permeable soils on flood plains. These soils formed in alluvium. Slope ranges from 0 to 2 percent.

Radford soils commonly are adjacent to Arenzville, Bold, Hickory, and Tallula soils. Arenzville soils are in positions similar to those of the Radford soils, are moderately well drained, and do not have a mollic epipedon. Bold, Hickory, and Tallula soils are on side slopes of uplands and are well drained.

Typical pedon of Radford silt loam, frequently flooded; 1,470 feet north and 60 feet east of the center of sec. 2, T. 17 N., R. 9 W.

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; weak medium subangular blocky structure parting to moderate fine and medium granular; friable; few very fine roots; neutral; clear smooth boundary.

A—7 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; weak medium subangular blocky structure; friable; few very fine roots; few distinct dark brown (7.5YR 4/2) mottles; moderate medium subangular blocky structure; friable; few very fine roots; few distinct light gray (10YR 6/1) dry silt coatings on faces of peds; mildly alkaline.

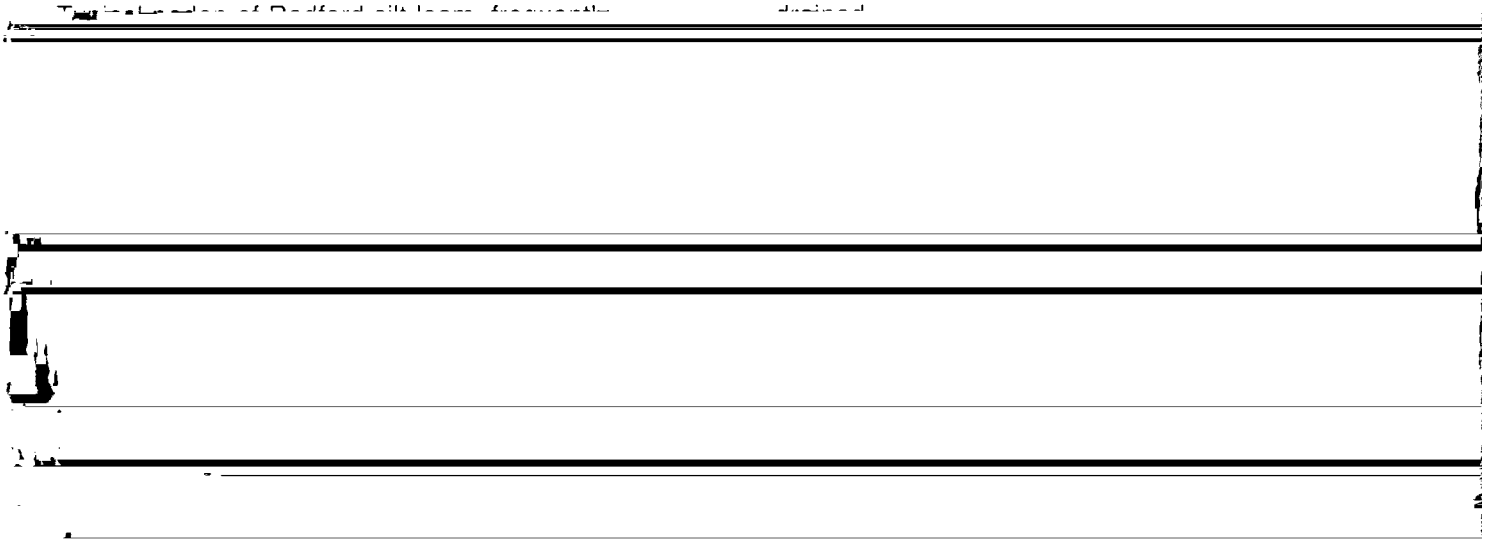
The mollic epipedon ranges from 10 to 22 inches in thickness. The depth to the Ab horizon ranges from 24 to 40 inches.

The Ap or A horizon has chroma of 1 or 2. The C horizon has chroma of 1 to 3. The Ab horizon has value of 2 or 3 and is silty clay loam or silt loam.

Ross Series

The Ross series consists of well drained soils on flood plains. These soils are moderately permeable in the upper part of the profile and moderately rapidly permeable or moderately permeable in the lower part. They formed in alluvium. Slope ranges from 0 to 3 percent.

Ross soils commonly are adjacent to Beaucoup and Dockery soils. The poorly drained Beaucoup and somewhat poorly drained Dockery soils are lower on flood plains than the Ross soils. Beaucoup soils are poorly drained, and Dockery soils are somewhat poorly drained.



Typical pedon of Ross loam, frequently flooded, 0 to 3 percent slopes; 390 feet south and 360 feet west of the northeast corner of sec. 33, T. 17 N., R. 13 W.

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure parting to weak fine granular; friable; few very fine and fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth

weak medium subangular blocky structure; friable; few very fine roots; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; gradual smooth boundary.

Bw2—38 to 45 inches; dark brown (10YR 4/3) loam; weak medium subangular blocky structure; friable; few very fine roots; common faint very dark grayish brown (10YR 3/3) organic coatings on faces of

(10YR 8/3) dry silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt1—15 to 22 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine angular and subangular blocky structure; firm; few very fine roots; many distinct dark brown (10YR 4/3) clay films and few distinct very pale brown (10YR 8/3) dry silt coatings on faces of

peds; slightly acid, gradual smooth boundary.

Bw3—45 to 53 inches; dark brown (10YR 4/3) and dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable; common faint dark brown (10YR 3/3) organic coatings on faces of peds; slightly acid; clear smooth boundary.

BC—53 to 60 inches; yellowish brown (10YR 5/4) loamy sand; weak medium subangular blocky structure; very friable; slightly acid.

stains (iron and manganese oxides); strongly acid; clear smooth boundary.

Bt2—22 to 33 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine roots; many distinct dark yellowish brown (10YR 4/4) clay films and few distinct very pale brown (10YR 8/3) dry silt coatings on faces of peds; common fine dark stains (iron and manganese oxides); medium acid, gradual smooth

moderately permeable soils on uplands. These soils formed in loess. Slope ranges from 0 to 2 percent.

Sable soils are similar to Hartsburg soils and commonly are adjacent to Hartsburg, Ipava, and Tama soils. Hartsburg soils have carbonates within a depth of 35 inches and are in positions slightly lower than those of the Sable soils. Ipava and Tama soils are in positions higher than those of the Sable soils. Ipava soils are somewhat poorly drained, and Tama soils are moderately well drained and well drained.

Typical pedon of Sable silty clay loam, 66 feet north and 420 feet east of the center of sec. 17, T. 17 N., R. 10 W.

Ap—0 to 6 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium granular structure; firm; few very fine roots; neutral; abrupt smooth boundary.

A—6 to 13 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and

few faint dark gray (10YR 4/1) clay films and few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine dark concretions and stains (iron and manganese oxides); neutral; clear smooth boundary.

Btg3—38 to 44 inches; light brownish gray (2.5Y 6/2) silty clay loam; many medium and coarse prominent yellowish brown (10YR 5/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; few very fine roots; few faint grayish brown (2.5Y 5/2) clay films on faces of

root channels; few fine dark concretions and stains (iron and manganese oxides); neutral; clear smooth boundary.

BCg—44 to 50 inches; light brownish gray (2.5Y 6/2) silt loam; common medium distinct light olive brown (2.5Y 5/6) mottles; weak medium prismatic structure; friable; few very fine roots; few distinct dark gray (10YR 4/1) clay films in root channels;

Typical pedon of Sawmill silty clay loam, rarely flooded; 400 feet south and 2,485 feet east of the northwest corner of sec. 31, T. 17 N., R. 11 W.

Ap—0 to 11 inches; black (N 2/0) silty clay loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to weak fine granular; firm; few very fine roots; slightly acid; clear smooth boundary.

A1—11 to 21 inches; black (N 2/0) silty clay loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure; firm; few very fine roots; mildly alkaline; clear smooth boundary.

A2—21 to 34 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; common fine and medium distinct strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; firm; few very fine roots; common faint black (10YR 2/1) organic coatings on faces of peds; mildly alkaline; abrupt smooth boundary.

Bg—34 to 48 inches; mottled grayish brown (2.5Y 5/2), strong brown (7.5YR 5/8), and light brownish gray (2.5Y 6/2) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine dark stains (iron and manganese oxides); mildly alkaline; abrupt smooth boundary.

BCg—48 to 57 inches; gray (5Y 5/1) silty clay loam; common medium and coarse prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure; firm; common faint dark gray (5Y 4/1) coatings on faces of peds; few fine dark stains (iron and manganese oxides); mildly alkaline; clear smooth boundary.

Cg—57 to 60 inches; gray (5Y 5/1) silt loam; few fine

formed in loess. Slope ranges from 15 to 60 percent.

Seaton soils are similar to Fayette, Rozetta, and Sylvan soils and commonly are adjacent to Arenzville, Hamburg, Hickory, and Timula soils. Arenzville soils are on flood plains and are moderately well drained. Fayette, Rozetta, and Sylvan soils have more clay in the argillic horizon. The Hamburg soils are in positions similar to those of the Seaton soils and are coarse-silty and somewhat excessively drained. Hickory soils formed in glacial till and are on side slopes at a lower elevation than the Seaton soils. Timula soils are coarse-silty and are on side slopes at a higher elevation than the Seaton soils.

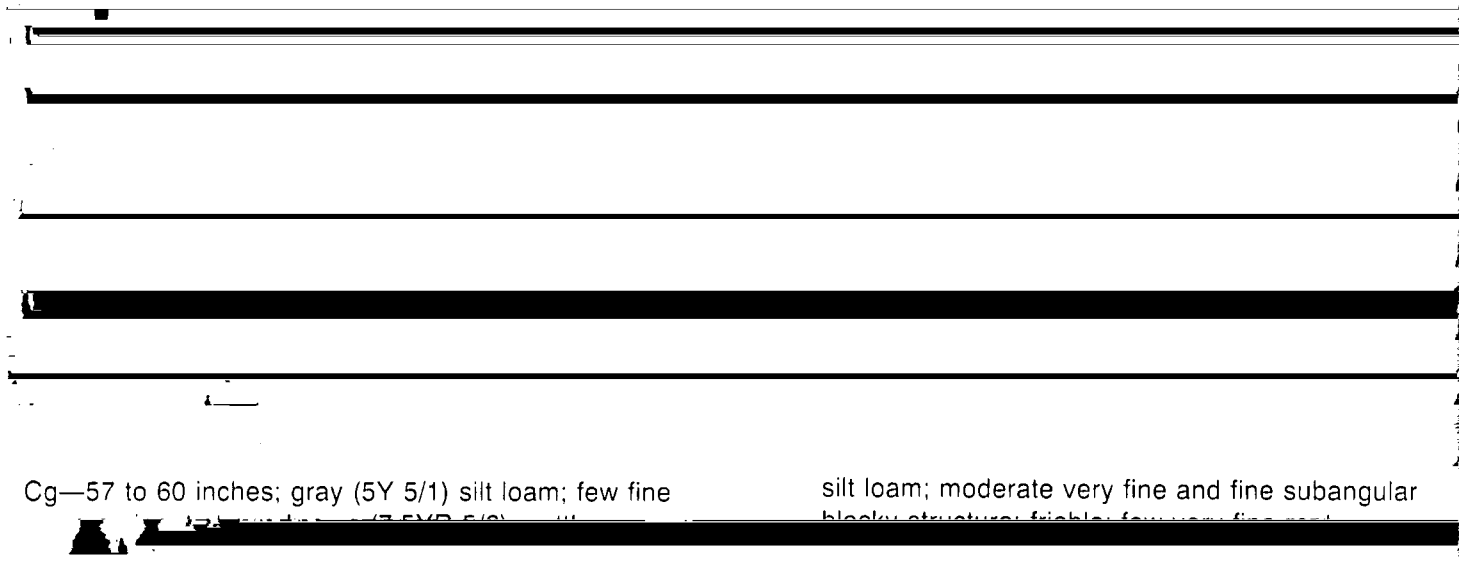
Typical pedon of Seaton silt loam, from an area of Seaton-Timula silt loams, 30 to 60 percent slopes; 450 feet north and 110 feet west of the center of sec. 27, T. 18 N., R. 11 W.

A—0 to 3 inches; mixed very dark grayish brown (10YR 3/2) and dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

E—3 to 6 inches; dark brown (10YR 4/3) silt loam, pale brown (10YR 6/3) and light brownish gray (10YR 6/2) dry; weak thin platy structure; friable; few very fine roots; few faint dark grayish brown (10YR 4/2) coatings on faces of peds; medium acid; abrupt smooth boundary.

BE—6 to 12 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable; few very fine roots; common faint dark brown (10YR 4/3) clay films on faces of peds; medium acid; clear smooth boundary.

Bt1—12 to 24 inches; dark yellowish brown (10YR 4/4)



silt loam; moderate very fine and fine subangular

silt loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common faint dark brown (7.5YR 4/4) clay films on faces of peds; slightly acid; clear smooth boundary.

BC—54 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure; firm; few very fine roots; slightly acid.

The solum ranges from 45 to more than 60 inches in thickness. The A horizon has chroma of 2 or 3. The E horizon has value of 4 or 5 and chroma of 2 to 4. The Bt horizon has value of 4 or 5 and chroma of 3 or 4.

[redacted]

The Sparta series consists of excessively drained, rapidly permeable soils on stream terraces. These soils formed in sandy material. Slope ranges from 1 to 7 percent.

Sparta soils commonly are adjacent to Ambraw, [redacted]

structure; very friable; few very fine roots; common faint brown (10YR 4/3) coatings on faces of peds; medium acid; clear smooth boundary.

BC—30 to 39 inches; yellowish brown (10YR 5/4) sand; weak medium subangular blocky structure; very friable; few very fine roots; common faint dark yellowish brown (10YR 4/4) coatings on faces of peds; medium acid; clear smooth boundary.

C—39 to 60 inches; yellowish brown (10YR 5/6) sand; single grained; loose; medium acid.

The solum ranges from 25 to 40 inches in thickness. The mollic epipedon ranges from 10 to 21 inches in thickness.

[redacted]

horizon has value of 4 or 5 and is loamy sand or sand. The C horizon is fine sand or sand.

Sylvan Series

The Sylvan series consists of well drained, [redacted]

very fine roots; slightly acid; clear smooth boundary.

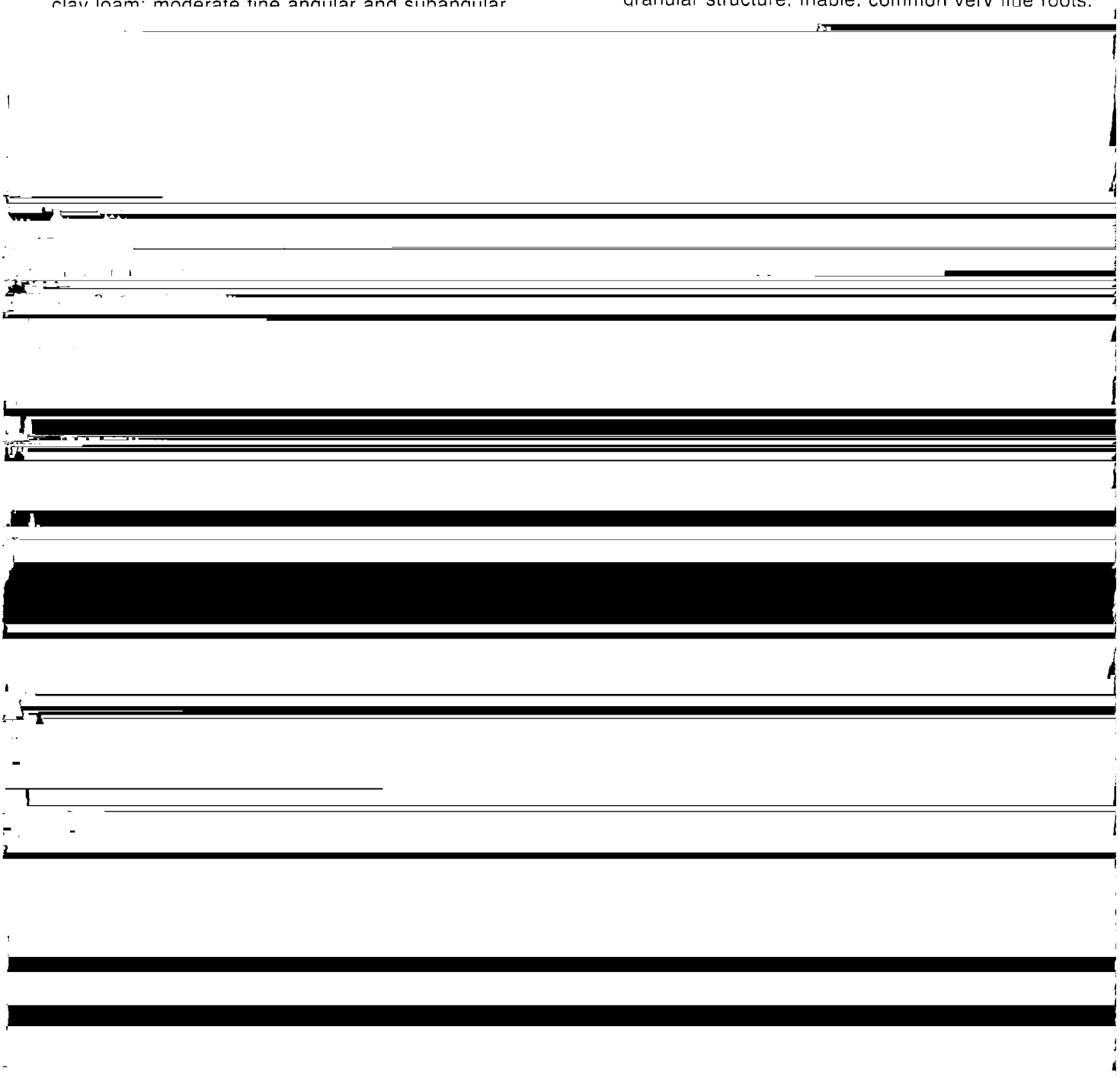
Bt1—10 to 17 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure; firm; very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—17 to 23 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine angular and subangular

are on flood plains and are somewhat poorly drained.

Typical pedon of Tallula silt loam, 7 to 15 percent slopes; 1,330 feet south and 154 feet east of the northwest corner of sec. 4, T. 17 N., R. 10 W.

A1—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; strong fine granular structure; friable; common very fine roots;



generally in less sloping areas at a lower elevation than the Tama soils. Ipava soils are somewhat poorly drained, and Sable soils are poorly drained.

Typical pedon of Tama silt loam, 2 to 5 percent slopes; 1,200 feet north and 282 feet west of the southeast corner of sec. 4, T. 17 N., R. 9 W.

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak fine and medium granular; friable; few very fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; abrupt smooth boundary.

A—11 to 17 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure parting to weak very fine and fine granular; friable; few very fine roots; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—17 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; few very fine roots; common faint dark brown (10YR 3/3 and 4/3) clay films and many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; medium acid; clear smooth boundary.

Bt2—24 to 30 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; many distinct dark brown (10YR 4/3) clay films and few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; medium acid; clear smooth boundary.

Bt3—30 to 38 inches; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct dark brown (10YR 4/3) clay films on faces of peds; few fine dark stains (iron and manganese oxides); medium acid; clear smooth boundary.

Bt4—38 to 49 inches; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few very fine roots; common distinct dark brown (10YR 4/3) clay films on faces of peds; few fine dark stains (iron and manganese oxides); medium acid; gradual smooth boundary.

BC—49 to 60 inches; yellowish brown (10YR 5/4) silt loam; weak medium and coarse subangular blocky structure; friable; few very fine roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine very dark gray (10YR 3/1) wormcasts; few fine dark stains (iron and manganese oxides); medium acid.

The solum ranges from 40 to more than 60 inches in thickness. The mollic epipedon ranges from 10 to 22 inches in thickness.

The Ap or A horizon has chroma of 1 or 2. The Bt horizon has chroma of 3 or 4.

Thorp Series

The Thorp series consists of poorly drained, slowly permeable soils on stream terraces. These soils formed in loess and the underlying loamy material. Slope ranges from 0 to 2 percent.

Thorp soils commonly are adjacent to Beardstown, Littleton, Raddle, and Worthen soils. Beardstown, Littleton, Raddle, and Worthen soils are higher on terraces than the Thorp soils. Beardstown and Littleton soils are somewhat poorly drained, and Raddle and Worthen soils are well drained.

Typical pedon of Thorp silt loam; 465 feet north and 1,200 feet west of the southeast corner of sec. 25, T. 17 N., R. 13 W.

Ap—0 to 11 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak medium granular; friable; few very fine roots; neutral; abrupt smooth boundary.

E1—11 to 15 inches; mottled light brownish gray (2.5Y 6/2), grayish brown (2.5Y 5/2), and dark yellowish brown (10YR 4/6) silt loam, light gray (10YR 7/2) dry; weak medium subangular blocky structure parting to weak fine and medium platy; friable; few very fine roots; common prominent very dark gray (10YR 3/1) organic coatings and white (10YR 8/1) dry silt coatings on faces of peds; neutral; clear smooth boundary.

E2—15 to 19 inches; mottled light brownish gray (2.5Y 6/2), grayish brown (2.5Y 5/2), and brown (7.5YR 4/4) silt loam; weak medium subangular blocky structure; friable; few very fine roots; few faint dark grayish brown (2.5Y 4/2) coatings, few distinct very dark gray (10YR 3/1) organic coatings, and common prominent white (10YR 8/1) dry silt coatings on faces of peds; slightly acid; clear smooth boundary.

Btg1—19 to 23 inches; dark grayish brown (2.5Y 4/2) silty clay loam; many medium and coarse prominent

brown (7.5YR 4/4) mottles and few medium and coarse prominent strong brown (7.5YR 5/6) mottles; moderate fine subangular blocky structure; friable; few very fine roots; common distinct dark gray (10YR 4/1) clay films, few distinct very dark gray (10YR 3/1) organic coatings, and common prominent white (10YR 8/1) dry silt coatings on faces of peds; few fine dark stains (iron and manganese oxides); medium acid; clear smooth boundary.

Btg2—23 to 30 inches; mottled dark gray (10YR 4/1), gray (10YR 5/1), and strong brown (7.5YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct dark gray (10YR 4/1) clay films, few distinct very dark gray (10YR 3/1) organic coatings, and common prominent white (10YR 8/1) dry silt coatings on faces of peds; few fine and medium dark concretions and stains (iron and manganese oxides); medium acid; clear smooth boundary.

Btg3—30 to 38 inches; mottled dark gray (10YR 4/1), gray (10YR 5/1), and strong brown (7.5YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium and coarse subangular blocky; firm; few very fine roots; common distinct dark gray (10YR 4/1) clay films and very dark gray (10YR 3/1) organic coatings, and few prominent white (10YR 8/1) dry silt coatings on faces of peds; few fine and medium dark concretions and stains (iron and manganese oxides); medium acid; clear smooth boundary.

Btg4—38 to 50 inches; mottled grayish brown (2.5Y 5/2), light brownish gray (2.5Y 6/2), and strong brown (7.5YR 5/6) silty clay loam; weak medium and coarse subangular blocky structure; firm; few very fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings in root channels; few fine and medium dark concretions and stains (iron and manganese oxides); slight

thickness. The loess ranges from 45 to 54 inches in thickness. The mollic epipedon ranges from 10 to 14 inches in thickness.

The Ap horizon has value of 2 or 3. The E horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. The 2BCg horizon has hue of 10YR or 2.5Y and value of 5 or 6.

Tice Series

The Tice series consists of somewhat poorly drained, moderately permeable soils on flood plains. These soils formed in alluvium. Slope ranges from 0 to 2 percent.

Tice soils commonly are adjacent to Beaucoup, Medway, and Sawmill soils. Beaucoup and Sawmill soils are slightly lower on the flood plains than the Tice soils and are poorly drained. Medway soils are slightly higher on the flood plains and are moderately well drained.

Typical pedon of Tice silty clay loam, frequently flooded; 1,189 feet north and 878 feet west of the southeast corner of sec. 4, T. 18 N., R. 11 W.

Ap—0 to 9 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak medium granular; firm; few very fine roots; common faint black (10YR 2/1) organic coatings on faces of peds; neutral; clear smooth boundary.

A—9 to 14 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak medium granular; firm; few very fine roots; few fine and medium dark concretions and stains (iron and manganese oxides); neutral; clear smooth boundary.

AB—14 to 19 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; common fine and medium faint dark grayish brown (10YR 4/2) mottles; weak fine and medium subangular blocky structure; firm; few very fine

stains (iron and manganese oxides); neutral; clear smooth boundary.

Bw2—24 to 37 inches; mottled grayish brown (10YR 5/2), brown (10YR 5/3), and yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few very dark gray (10YR 3/1) krotovina; few fine and medium dark concretions and stains (iron and manganese oxides); neutral; clear smooth boundary.

Bw3—37 to 53 inches; grayish brown (10YR 5/2) silty [illegible] many medium and coarse distinct

silt loam, light brownish gray (10YR 6/2) dry; some mixing of dark brown (10YR 4/3); moderate medium granular structure; friable; common very fine and few medium roots; neutral; abrupt smooth boundary.

E1—5 to 7 inches; dark brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak thin platy structure; friable; common very fine roots; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; abrupt smooth boundary.

E2—7 to 9 inches; dark brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium platy structure; friable; common very fine roots; few faint

These soils formed in sandy material. Slope ranges from 0 to 2 percent.

Watseka soils are similar to Hoopeston soils and commonly are adjacent to Gilford, Hoopeston, Orio, Plainfield, and Sparta soils. Gilford and Hoopeston soils are coarse-loamy. Gilford soils are lower on the terraces than the Watseka soils and are very poorly drained. Hoopeston soils are in positions similar to those of the Watseka soils. Orio soils are in shallow depressions at a lower elevation and are poorly drained. Plainfield and Sparta soils are higher on the terraces than the Watseka soils and are excessively drained.

Typical pedon of Watseka sand; 258 feet south and 204 feet east of the center of sec. 4, T. 17 N., R. 12 W.

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) sand, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; few very fine roots; slightly acid; clear smooth boundary.

A—7 to 17 inches; very dark grayish brown (10YR 3/2) [illegible]

subangular blocky structure parting to weak very fine and fine granular; very friable; few very fine roots; few faint very dark brown (10YR 2/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

BA—17 to 22 inches; dark grayish brown (10YR 4/2) sand; weak fine and medium subangular blocky [illegible]

The Ap and A horizons have value of 2 or 3 and chroma of 1 or 2. They are sand or loamy sand. The Bw horizon has value of 4 to 6 and chroma of 2 or 3. It is sand or loamy sand.

Worthen Series

The Worthen series consists of well drained, moderately permeable soils on alluvial fans and stream terraces. These soils formed in alluvium. Slope ranges from 0 to 2 percent.

Worthen soils are similar to Raddle soils and commonly are adjacent to Littleton, Raddle, and Sparta soils. Littleton soils are in positions slightly lower than those of the Worthen soils and are somewhat poorly drained. Raddle soils have a thinner mollic epipedon and are in more sloping areas at a higher elevation. Sparta soils are sandy and are higher on the terraces than the Worthen soils.

Typical pedon of Worthen silt loam; 2,070 feet south and 1,185 feet east of the northwest corner of sec. 28, [illegible]

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to weak fine and medium granular; friable; few very fine roots; neutral; abrupt smooth boundary.

A—7 to 24 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine

loam; weak medium subangular blocky structure; friable; few very fine roots; neutral; gradual smooth boundary.

C—58 to 60 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; slight effervescence; mildly alkaline.

The solum ranges from 35 to 60 inches in thickness. The mollic epipedon ranges from 24 to 40 inches in thickness.

The Ap and A horizons have value of 2 or 3 and chroma of 1 to 3. The Bw horizon has value of 3 or 4 and chroma of 2 to 4.

Formation of the Soils

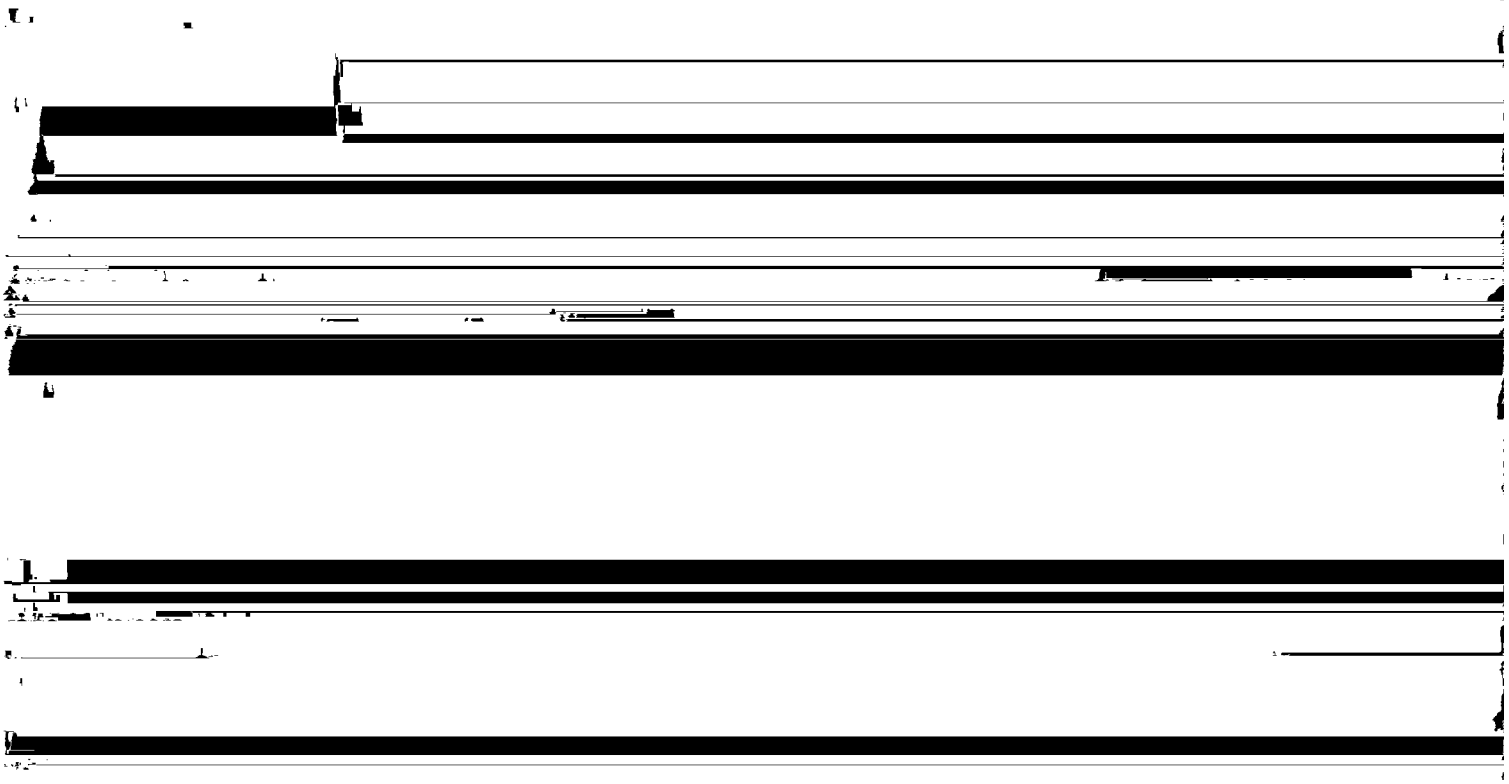
Soil forming processes act on parent material deposited by geologic agents, such as wind, water, or glacial ice. The characteristics of a soil at any given point are determined by the physical and mineralogical composition of the parent material, the plant and the animal life on or in the soil, the climate under which the soil material has accumulated and existed since accumulation, the topography, and the length of time the processes of soil formation have acted on the soil material. These factors of soil formation are so closely interrelated in their effects on the soil that few generalizations can be made regarding the effect of any one unless conditions are specified for the other four *(5)*.

Parent Material

Parent material is the unconsolidated geologic material in which a soil forms. It determines the particles of similar size, such as loam, sandy loam, sand, and other coarse particles. When the water slowed down, the coarser particles were deposited. The finer particles, such as very fine sand, silt, and clay were carried by the more slowly moving water. The Dickinson, Gilford, and Orio soils formed in outwash deposits.

Through the melting of the Wisconsin glacier, the climate alternated between cold and temperate stages. During the colder spells when the ice was not melting, the mud flats of the river bottom dried. When these flats were exposed to the action of wind, the fine sediment was blown into the air and deposited on the upland. The wind sorted the particles and deposited the coarser particles, such as sand, nearest the source and the finer particles, such as silt, farther away.

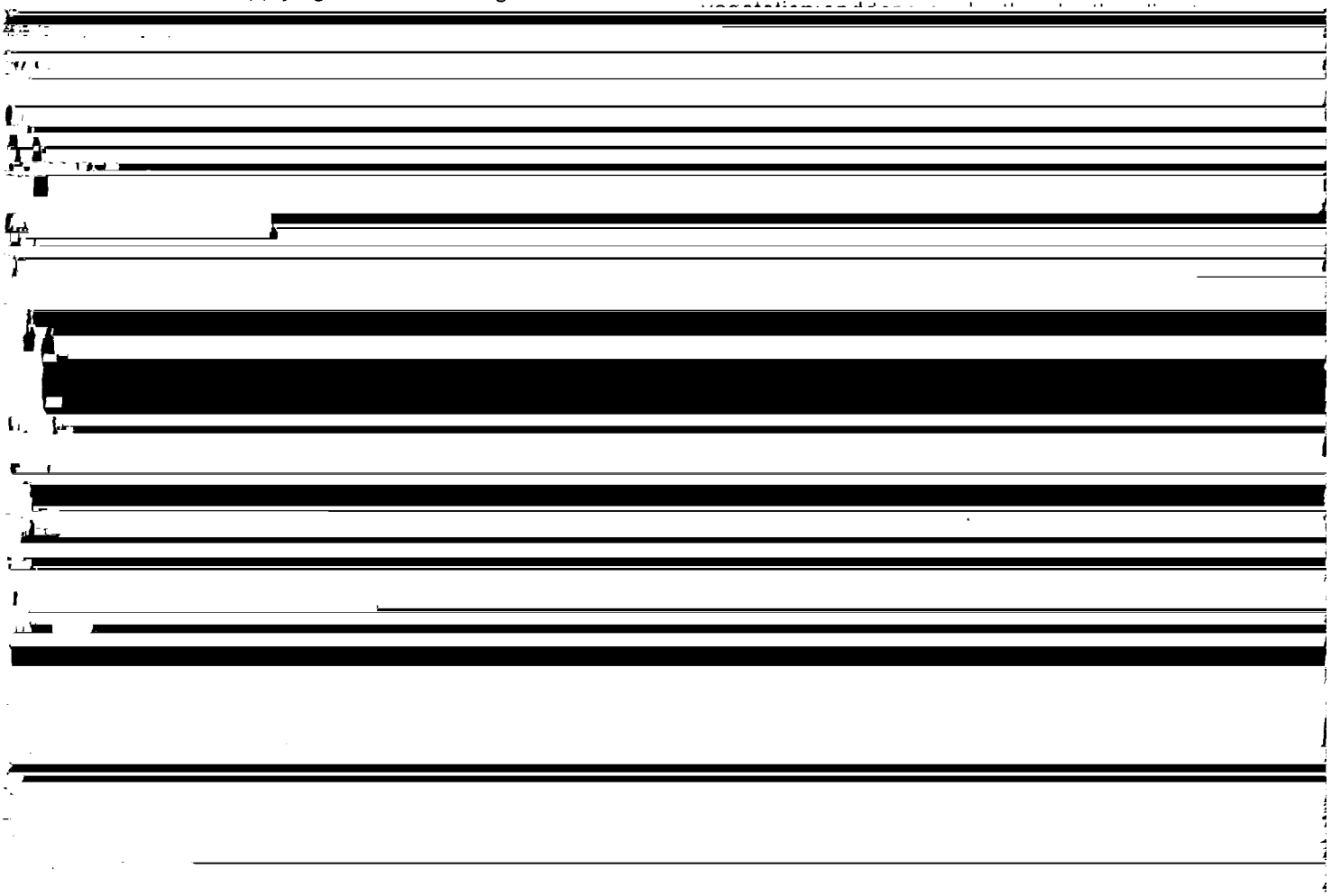
Sand dunes formed from the windblown sand particles. They are most extensive in the western part



Plant and Animal Life

Living organisms are important to soil formation. Vegetation is generally responsible for the amount of organic matter and nutrients in the soil and for the color of the surface layer. Plant roots provide channels for the movement of water and air through the soil and also add organic matter as they decay. Earthworms, insects, and burrowing animals help keep the soil open and porous, and they incorporate organic matter into the soil. As micro-organisms, such as bacteria and fungi, decompose dead vegetation and animals in and on the soil, nutrients are released for use by other plants. The role of animals in supplying the soil with organic matter into the subsoil. It has also dissolved minerals and moved them downward through the profile. As a result, most of the upland soils of the county have considerably more clay in the subsoil than in the surface layer. In addition, the free calcium carbonate has been removed from the upper layers of many of the soils, leaving these layers slightly acid or medium acid.

Climate also influences soil formation by stimulating the growth of living organisms, particularly plants. Well distributed rainfall and seasonal freezing temperatures promote the accumulation of organic matter in most of the soils that are under grasses. Soils that formed under forest vegetation were influenced more by the



The soils that formed under grasses have a thick, black to dark brown surface layer. The Ipava and Tama soils developed on the broad prairies under wildflowers and grasses, such as big bluestem, indiangrass, and prairie dropseed *(4)* (fig. 17). In the drier areas, such as those where Sparta soils formed, little bluestem and porcupinegrass were dominant. In the wetter areas, such as those where Hartsburg and Sable soils formed,

Topography

Variations in the slope of the land surface affect the natural drainage, erosion, runoff, and deposition of soil.

A comparison between soils that formed in similar parent material but under different drainage conditions indicates the effect of slope on soil formation. Sable and Elkhart soils formed in loess. Sable soils are nearly

Figure 17.—The Ipava and Tama soils formed under native prairie weeds and grasses.

Time

Time greatly affects the degree of profile development in a soil. The influence of time, however, can be modified by erosion, deposition of material, topography, and kind of parent material.

On some of the steeper soils, erosion removes the surface soil material as soon as the soil forms. These soils are immature even though the slopes have been exposed to weathering for thousands of years. Hamburg soils are an example.

The soils on flood plains receive alluvial material during each flood. This repeated deposition slows soil formation. Arenzville soils are an example of soils formed in alluvial material.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

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

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

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

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Badland. Steep or very steep, commonly nonstony, [illegible] land dissected by [illegible] intermittent

semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Bedding planes. Fine stratifications, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediments.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bottom land. The normal flood plain of a stream, subject to flooding.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catwalks. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard compacted layers to a depth below normal plow depth.

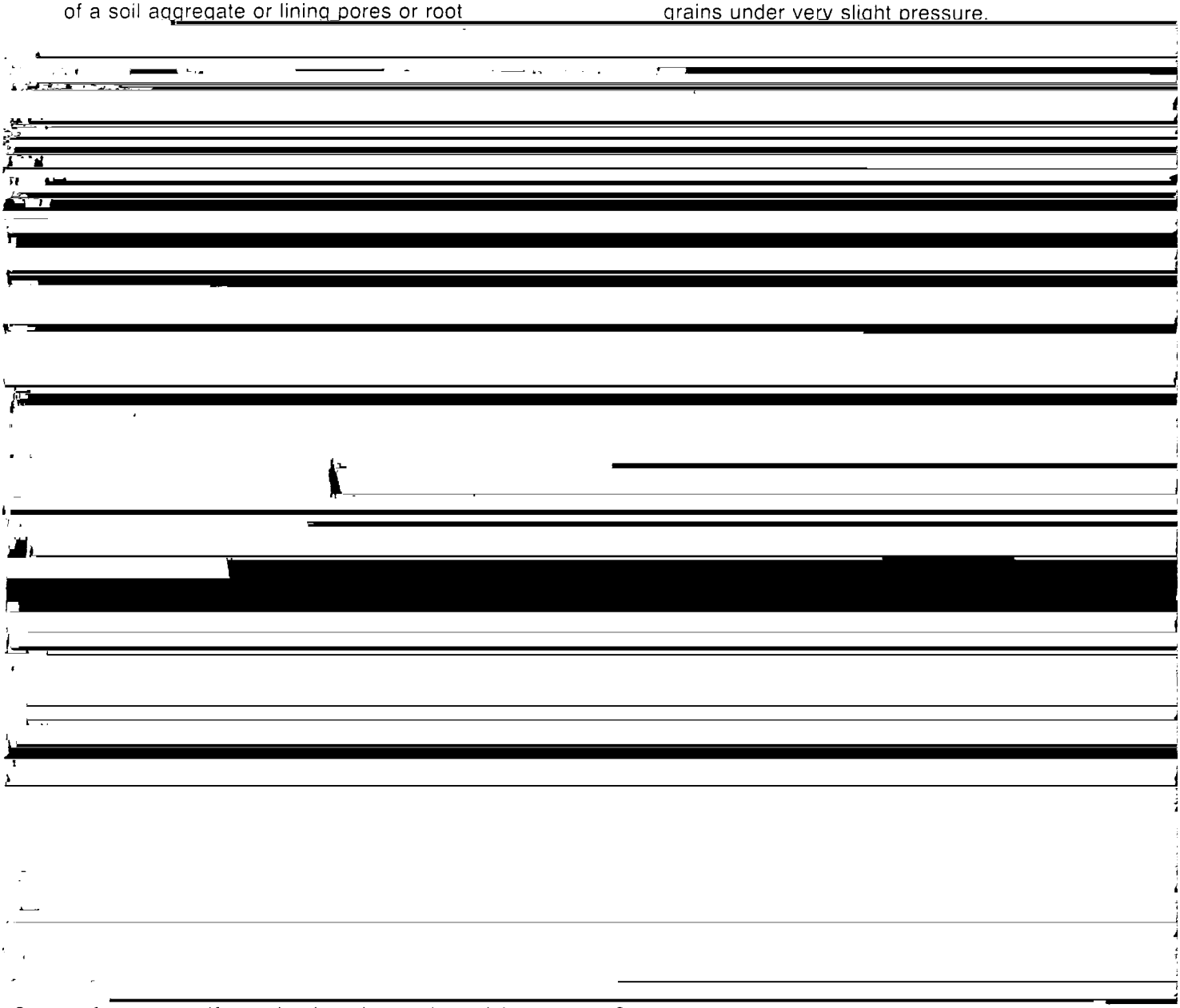
Clay. As a soil separate, the mineral soil particles less [illegible]

less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root

pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.



Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled

(flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Colluvium. Soil material, rock fragments, or both

crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that

throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously [illegible] directly below plow depth. Poor

to sandy material in dunes or to loess in blankets on the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, for example, fire, that exposes the surface.

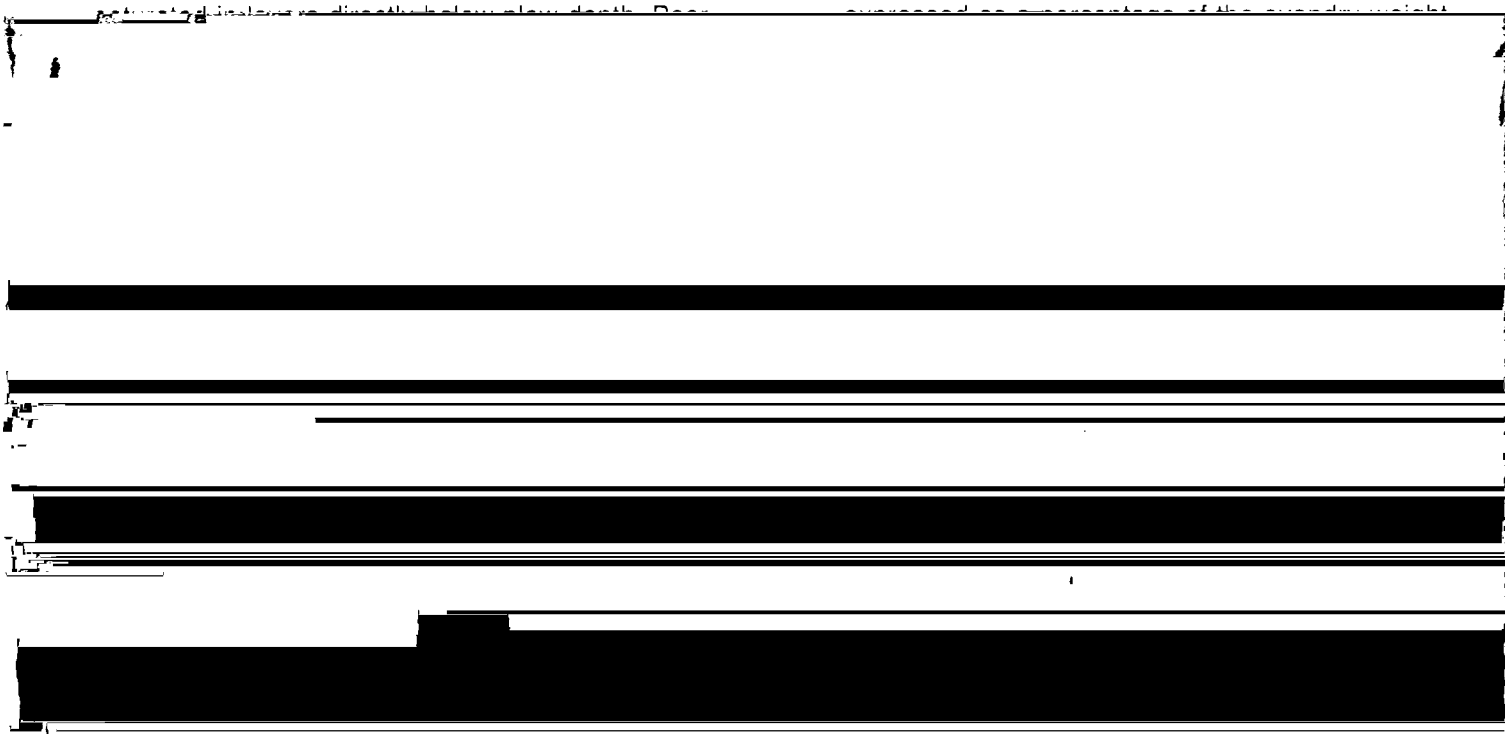
Excess alkali (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess fines (in tables). Excess silt and clay in the soil. The soil is not a source of gravel or sand for construction purposes.

Fast intake (in tables). The rapid movement of water into the soil.

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

Field moisture capacity. The moisture content of a soil, [illegible] expressed as a percentage of the oven-dry weight



deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash (geology). Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

[redacted]

Glacial till (geology). Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other

[redacted]

underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) granular, prismatic, or blocky structure; (3) redder or browner [redacted] than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil forming processes and does not [redacted]

[redacted]

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake in inches per hour is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

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.

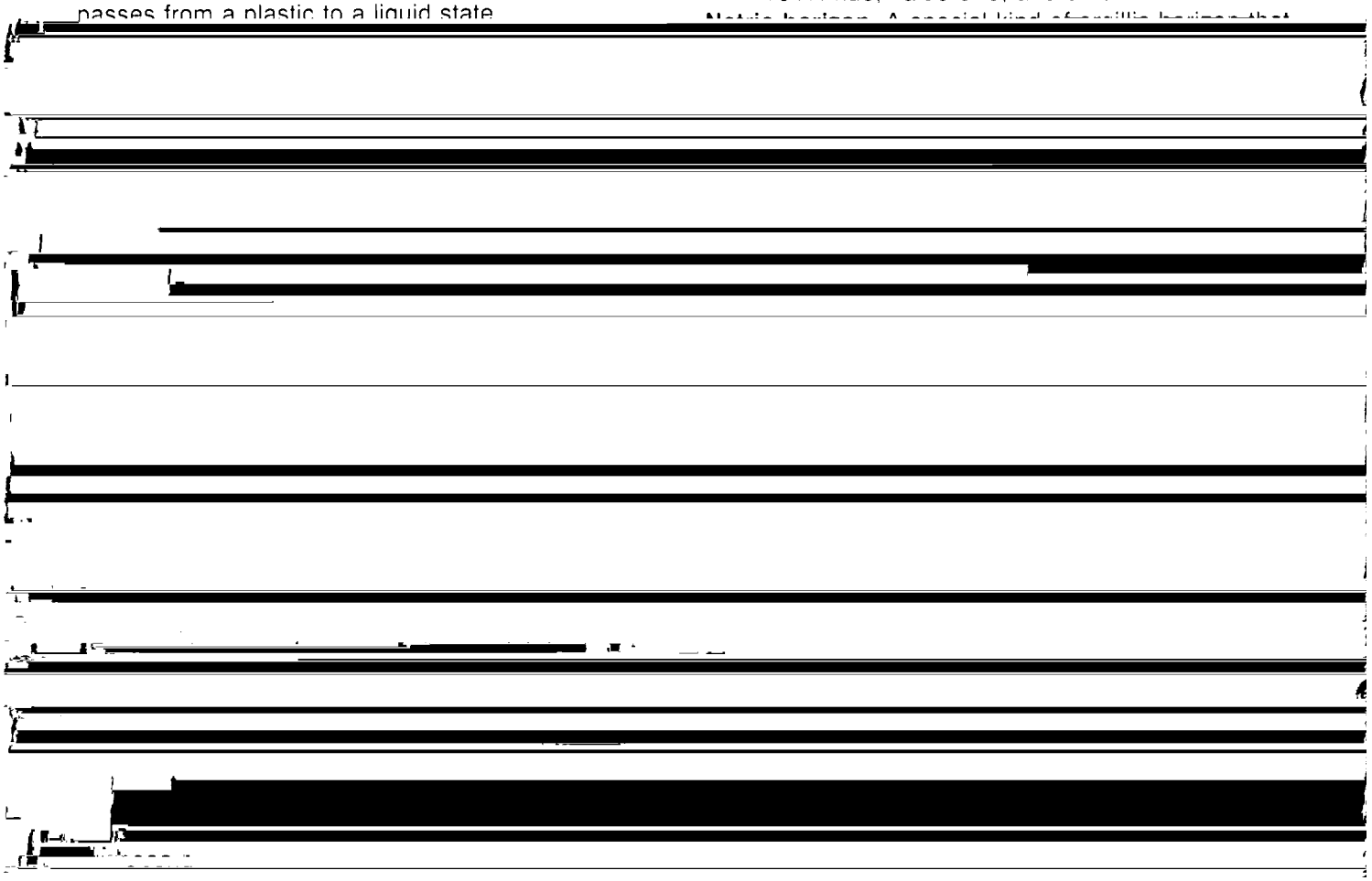
including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Muck. Dark colored, finely divided, well decomposed organic soil material. (See Sapric soil material.)

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

Natric horizon. A special kind of argillic horizon that



Percs slowly (in tables). The slow movement of water through the soil, adversely affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

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

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by [illegible] or evapotranspiration.

degrees of acidity or alkalinity, expressed as pH values, are—

Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

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

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

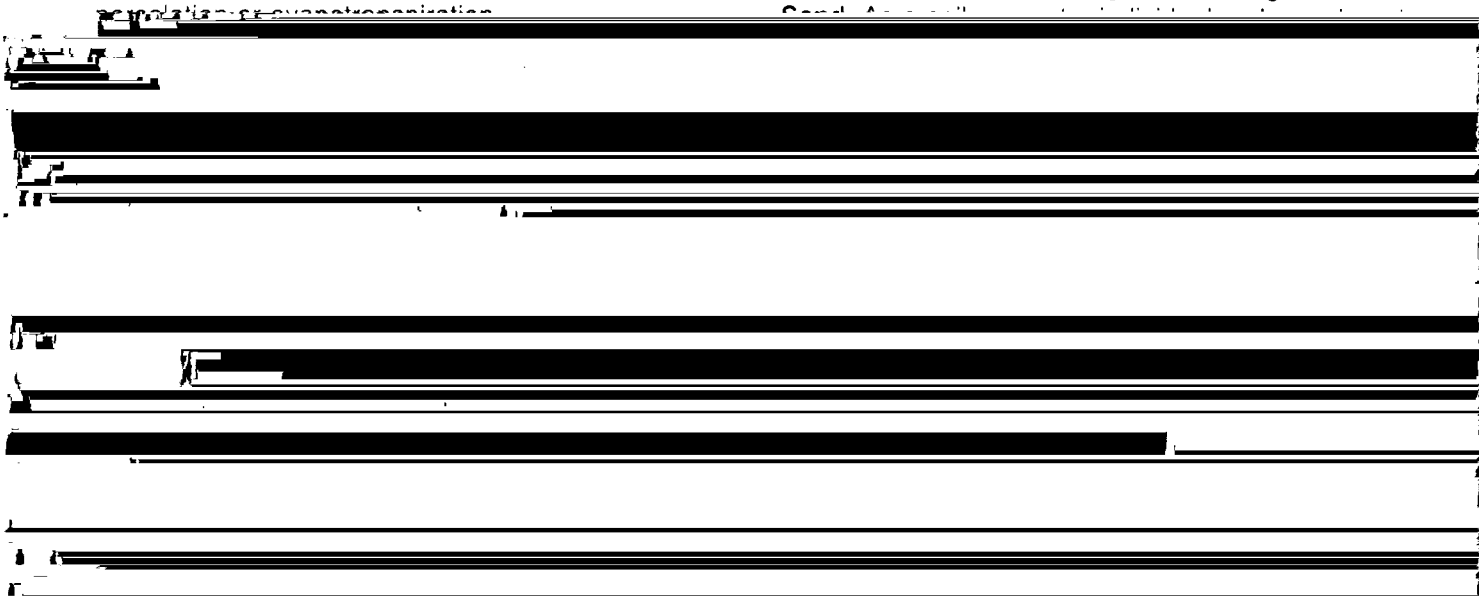
Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

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

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil [illegible]



of a series have horizons that are similar in composition, thickness, and arrangement.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special

States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stripcropping. Growing crops in a systematic arrangement of strips or bands which provide vegetative barriers to soil blowing and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from soil blowing and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of

consequence in interpreting their use and behavior.

Terrace. An embankment or ridge constructed across

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, are in soils

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1951-80 at Jacksonville, Illinois)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	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*	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-----	34.3	16.4	25.4	39	12	0	1.46	0.66	2.43	4	5.0
February----	39.4	20.7	30.1	45	16	0	1.61	.76	2.60	4	5.5
March-------	52.3	27.8	40.1	55	25	0	3.14	1.55	4.64	6	4.0
April-------	65.0	42.3	53.7	67	39	170	3.99	2.25	6.37	7	.2
May---------	74.9	52.0	63.5	79	48	418	4.47	2.46	7.10	7	.0
June--------	83.9	61.0	72.5	88	59	698	4.05	1.28	6.47	6	.0
July--------	87.3	64.6	76.0	90	62	806	3.95	1.47	5.62	6	.0

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1951-80 at Jacksonville, Illinois)

Probability	Temperature		
	24° F or lower	28° F or lower	32° F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 14	Mar. 23	Mar. 25
2 years in 10 later than--	Mar. 18	Mar. 30	Apr. 5
5 years in 10 later than--	Mar. 31	Apr. 9	Apr. 22
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 19	Oct. 10	Oct. 5
2 years in 10 earlier than--	Oct. 28	Oct. 14	Oct. 8
5 years in 10 earlier than--	Nov. 3	Oct. 27	Oct. 16

TABLE 3.--GROWING SEASON

(Recorded in the period 1951-80 at Jacksonville, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24° F	Higher than 28° F	Higher than 32° F
	Days	Days	Days
9 years in 10	194	187	157
8 years in 10	211	193	173
5 years in 10	220	202	181
2 years in 10	233	216	192
1 year in 10	247	222	198

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
8E	Hickory loam, 15 to 30 percent slopes	3,041	1.3
8G	Hickory loam, 30 to 60 percent slopes	2,793	1.1
17A	Keomah silt loam, 0 to 3 percent slopes	2,934	1.2
19C3	Sylvan silty clay loam, 5 to 10 percent slopes, severely eroded	1,952	0.8
19D2	Sylvan silt loam, 10 to 15 percent slopes, eroded	1,208	0.5

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
965E	Tallula-Bold silt loams, 15 to 30 percent slopes	509	0.2
3070	Beaucoup silty clay loam, frequently flooded, undrained	11,696	4.7
3073A	Ross loam, frequently flooded, 0 to 3 percent slopes	647	0.3
3115	Dockery silt loam, frequently flooded	4,778	2.0
4776	Comfrey loam, ponded	715	0.3
7070	Beaucoup silty clay loam, rarely flooded	1,864	0.8
7078	Arenzville silt loam, rarely flooded	2,928	1.2
7107	Sawmill silty clay loam, rarely flooded	1,724	0.7
7284	Tice silty clay loam, rarely flooded	497	0.2
7302	Ambraw clay loam, rarely flooded	6,643	2.7
7682	Medway loam, rarely flooded	902	0.4
	Water	6,952	2.9
	Total	243,200	100.0

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE

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

Soil name and map symbol	Land capability	Corn	Soybeans	Winter wheat	Oats	Orchardgrass-alfalfa hay	Bromegrass-alfalfa
		Bu	Bu	Bu	Bu	Tons	AUM*
8E---------- Hickory	VIe	---	---	---	---	2.4	4.0
8G---------- Hickory	VIIe	---	---	---	---	---	2.4
17A---------- Keomah	IIw	129	39	52	72	5.2	8.5
19C3---------- Sylvan	IVe	97	30	46	57	4.3	7.2
19D2---------- Sylvan	IIIe	101	32	48	59	4.4	7.5
19D3---------- Sylvan	IVe	93	29	44	55	4.1	6.9
19E---------- Sylvan	VIe	---	---	---	---	3.7	6.6
30F, 30G-------- Hamburg	VIIe	---	---	---	---	---	2.7
34D---------- Tallula	IIIe	113	37	48	67	4.5	7.4
35D2---------- Bold	IIIe	67	20	31	41	3.0	5.0
35E2---------- Bold	VIe	---	---	---	---	2.5	4.2
36A---------- Tama	I	155	46	62	89	5.9	9.8
36B---------- Tama	IIe	153	46	61	88	5.8	9.7
36C2---------- Tama	IIIe	146	43	58	84	5.5	9.2
37---------- Worthen	I	151	46	62	88	5.9	9.8
43A---------- Ipava	I	163	52	66	91	6.1	10.2
43B---------- Ipava	IIe	161	51	65	90	6.0	10.1
49---------- Watseka	IIIs	92	31	43	62	3.7	6.2
53B---------- Bloomfield	IIIs	79	31	41	51	3.2	5.3

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

map symbol	capability	Corn	Soybeans	Winter wheat	Oats	Orchardgrass-bromegrass	Bromegrass-alfalfa
		Bu	Bu	Bu	Bu	Tons	AUM*
53D---------- Bloomfield	IVe	73	29	38	47	2.9	4.8
54B, 54D-------- Plainfield	VIs	---	---	---	---	2.3	3.6
54E---------- Plainfield	VIIs	---	---	---	---	---	---
68---------- Sable	IIw	156	51	61	85	---	---
70---------- Beaucoup	IVw	90	30	---	---	---	---
71---------- Darwin	IIIw	90	32	38	---	---	---
74---------- Radford	IIIw	100	32	---	---	3.9	6.5
78---------- Arenzville	IIw	105	35	---	---	4.0	6.6
81---------- Littleton	I	159	50	63	90	6.1	10.2
87B---------- Dickinson	IIe	98	37	45	76	3.9	6.4
88B---------- Sparta	IVs	84	29	37	52	3.3	5.4
107---------- Sawmill	IVw	96	35	---	---	---	---
131B----------	IIe	97	37	48	66	4.1	6.8

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Winter wheat	Oats	Orchardgrass-alfalfa hay	Bromegrass-alfalfa
		Bu	Bu	Bu	Bu	Tons	AUM*
244---------- Hartsburg	IIw	145	47	56	79	---	---
279A---------- Rozetta	I	131	40	54	73	5.2	8.7
279B---------- Rozetta	IIe	130	40	53	72	5.1	8.6
280B---------- Fayette	IIe	128	39	52	72	5.1	8.6
280C2---------- Fayette	IIIe	121	37	50	69	4.9	8.1
280D2---------- Fayette	IIIe	119	36	49	67	4.8	8.0
280E---------- Fayette	VIe	---	---	---	---	4.5	6.8
284---------- Tice	IVw	97	30	---	---	---	4.7
302---------- Ambraw	IVw	87	28	---	---	---	---
304A---------- Landes	IIIw	67	23	---	---	2.5	4.1
430B---------- Raddle	IIe	148	45	58	82	5.7	9.6
430C---------- Raddle	IIIe	145	44	57	81	5.6	9.4
451---------- Lawson	IIIw	120	39	---	---	---	---
567C2---------- Elkhart	IIIe	123	37	49	68	4.7	7.9
682---------- Medway	IIIw	87	27	---	---	---	---
776---------- Comfrey	IIIw	90	33	---	---	---	---
943E---------- Seaton-Timula	VIe	---	---	---	---	3.4	5.7
943G---------- Seaton-Timula	VIIe	---	---	---	---	---	3.6
962C3---------- Sylvan-Bold	IVe	83	25	40	49	3.7	6.2
962D3----------	IVe	78	19	36	46	3.5	5.9

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Winter wheat	Oats	Orchardgrass-alfalfa hay	Bromegrass-alfalfa
		Bu	Bu	Bu	Bu	Tons	AUM*
962E2--- Sylvan-Bold	VIe	---	---	---	---	3.1	5.2
962E3--- Bold-Sylvan	VIIe	---	---	---	---	2.7	4.5
965D2--- Tallula-Bold	IIIe	86	29	40	54	3.7	6.2
965E--- Tallula-Bold	VIe	---	---	---	---	3.2	5.4
3070--- Beaucoup	Vw	---	---	---	---	---	---
3073A--- Ross	IIw	70	30	---	---	4.5	7.5
3115--- Dockery	IVw	---	---	---	---	---	---
4776--- Comfrey	VIIIw	---	---	---	---	---	---
7070--- Beaucoup	IIw	138	46	55	75	---	---
7078--- Arenzville	I	138	42	56	79	5.4	9.0
7107--- Sawmill	IIw	147	47	54	76	---	---
7284--- Tice	I	153	47	61	84	5.7	9.5
7302--- Ambraw	IIw	132	43	52	70	---	---
7682--- Medway	I	132	42	53	72	5.3	8.8

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

TABLE 6.--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	Windthrow hazard	Common trees	Site index	Volume*	
8E---------- Hickory	5R	Moderate	Moderate	Slight	Slight	White oak---------- Northern red oak---- Black oak---------- Green ash---------- Bitternut hickory--- Yellow poplar--------	85 85 --- --- --- 95	67 67 --- --- --- 98	Eastern white pine, red pine, yellow poplar, sugar maple, white oak, black walnut.
8G---------- Hickory	5R	Severe	Severe	Slight	Slight	White oak---------- Northern red oak---- Black oak---------- Green ash---------- Bitternut hickory--- Yellow poplar--------	85 85 --- --- --- 95	67 67 --- --- --- 98	Eastern white pine, red pine, yellow poplar, sugar maple, white oak, black walnut.
19D2, 19D3------ Sylvan	6A	Slight	Slight	Slight	Slight	Yellow poplar------- White oak---------- Northern red oak---- Black walnut--------	90 80 80 ---	90 62 62 ---	White oak, black walnut, northern red oak, green ash, eastern white pine, red pine, sugar maple.
19E---------- Sylvan	6R	Moderate	Moderate	Moderate	Slight	Yellow poplar------- White oak---------- Northern red oak---- Black walnut--------	90 80 80 ---	90 62 62 ---	White oak, black walnut, northern red oak, green ash, eastern white pine, red pine, sugar maple.
30F---------- Hamburg	2R	Moderate	Moderate	Moderate	Slight	White oak---------- Bur oak---------- Eastern redcedar---- Post oak---------- Black oak----------	45 --- --- --- ---	30 --- --- --- ---	Bur oak, eastern redcedar, white oak.
30G---------- Hamburg	2R	Severe	Severe	Severe	Slight	White oak---------- Bur oak---------- Eastern redcedar---- Post oak---------- Black oak----------	45 --- --- --- ---	30 --- --- --- ---	Bur oak, eastern redcedar, white oak.
53B, 53D-------- Bloomfield	4S	Slight	Slight	Moderate	Slight	Black oak---------- White oak---------- Scarlet oak--------- Shagbark hickory----	70 --- --- ---	52 --- --- ---	Eastern white pine, Scotch pine, red pine, eastern redcedar, jack pine.

See footnote at end of table.

TABLE 6.--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	Windthrow hazard	Common trees	Site index	Volume*	
54B, 54D-------- Plainfield	4S	Slight	Slight	Moderate	Slight	Black oak---------- White oak---------- Black cherry-------- Scarlet oak--------- Northern red oak----	70 55 --- 68 ---	52 38 --- 50 ---	Red pine, eastern white pine, jack pine.
54E---------- Plainfield	4R	Moderate	Severe	Moderate	Slight	Black oak---------- White oak---------- Black cherry-------- Scarlet oak--------- Northern red oak----	70 55 --- 68 ---	52 38 --- 50 ---	Red pine, eastern white pine, jack pine.
78---------- Arenzville	3A	Slight	Slight	Slight	Slight	Northern red oak---- Bur oak---------- Silver maple--------	65 --- ---	48 --- ---	Red pine, eastern white pine, white spruce, northern red oak, black walnut.
131B, 131C2, 131D---------- Alvin	4A	Slight	Slight	Slight	Slight	White oak---------- Northern red oak---- Black walnut-------- Yellow poplar-------	80 80 --- 90	62 62 --- 90	Green ash, black walnut, yellow poplar, white oak, eastern white pine, American sycamore, sugar maple.
279A, 279B------ Rozetta	4A	Slight	Slight	Slight	Slight	White oak---------- Northern red oak---- Yellow poplar------- Black walnut--------	80 80 90 ---	62 62 90 ---	Eastern white pine, northern red oak, green ash, Scotch pine, yellow poplar.
280B, 280C2, 280D2---------- Fayette	4A	Slight	Slight	Slight	Slight	White oak---------- Northern red oak---- Yellow poplar------- Black walnut--------	80 80 90 ---	62 62 90 ---	Eastern white pine, northern red oak, green ash, yellow poplar.
280E---------- Fayette	4R	Moderate	Moderate	Slight	Slight	White oak---------- Northern red oak---- Yellow poplar------- Black walnut--------	80 80 90 ---	62 62 90 ---	Eastern white pine, northern red oak, green ash, yellow poplar.
943E: Seaton----------	6R	Moderate	Moderate	Moderate	Slight	Yellow poplar------- White oak---------- Northern red oak---- Black walnut--------	90 90 80 ---	90 72 62 ---	White oak, black walnut, northern red oak, green ash, red pine, sugar maple.

See footnote at end of table.

TABLE 6.--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	Windthrow hazard	Common trees	Site index	Volume*	
943E:									
Timula	4R	Moderate	Moderate	Moderate	Slight	White oak	70	52	Eastern white pine, red pine, Scotch pine, white oak.
						Northern red oak	---	---	
						Green ash	---	---	
						Bur oak	---	---	
943G:									
Seaton	6R	Severe	Severe	Severe	Slight	Yellow poplar	90	90	White oak, black walnut, northern red oak, green ash, red pine, sugar maple.
						White oak	90	72	
						Northern red oak	80	62	
						Black walnut	---	---	
Timula	4R	Severe	Severe	Severe	Slight	White oak	70	52	Eastern white pine, red pine, Scotch pine, white oak.
						Northern red oak	---	---	
						Green ash	---	---	
						Bur oak	---	---	
962D3:									
Sylvan	6A	Slight	Slight	Slight	Slight	Yellow poplar	90	90	White oak, black walnut, northern red oak, green ash, eastern white pine, red pine, sugar maple.
						White oak	80	62	
						Northern red oak	80	62	
						Black walnut	---	---	
Bold.									
962E2:									
Sylvan	6R	Moderate	Moderate	Moderate	Slight	Yellow poplar	90	90	White oak, black walnut, northern red oak, green ash, eastern white pine, red pine, sugar maple.
						White oak	80	62	
						Northern red oak	80	62	
						Black walnut	---	---	
Bold.									
962E3:									
Bold.									
Sylvan	6R	Moderate	Moderate	Moderate	Slight	Yellow poplar	90	90	White oak, black walnut, northern red oak, green ash, eastern white pine, red pine, sugar maple.
						White oak	80	62	
						Northern red oak	80	62	
						Black walnut	---	---	

See footnote at end of table.

TABLE 6.--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	Windthrow hazard	Common trees	Site index	Volume*	
3070---------- Beaucoup	5W	Slight	Severe	Moderate	Moderate	Pin oak----------	90	72	Eastern cottonwood, red maple, American sycamore, sweetgum, pin oak.
						Eastern cottonwood--	100	128	
						Sweetgum----------	---	---	
						Cherrybark oak------	---	---	
						American sycamore---	---	---	
3073A---------- Ross	5A	Slight	Slight	Slight	Slight	Northern red oak----	86	68	Eastern white pine, black
						Yellow poplar-------	96	100	

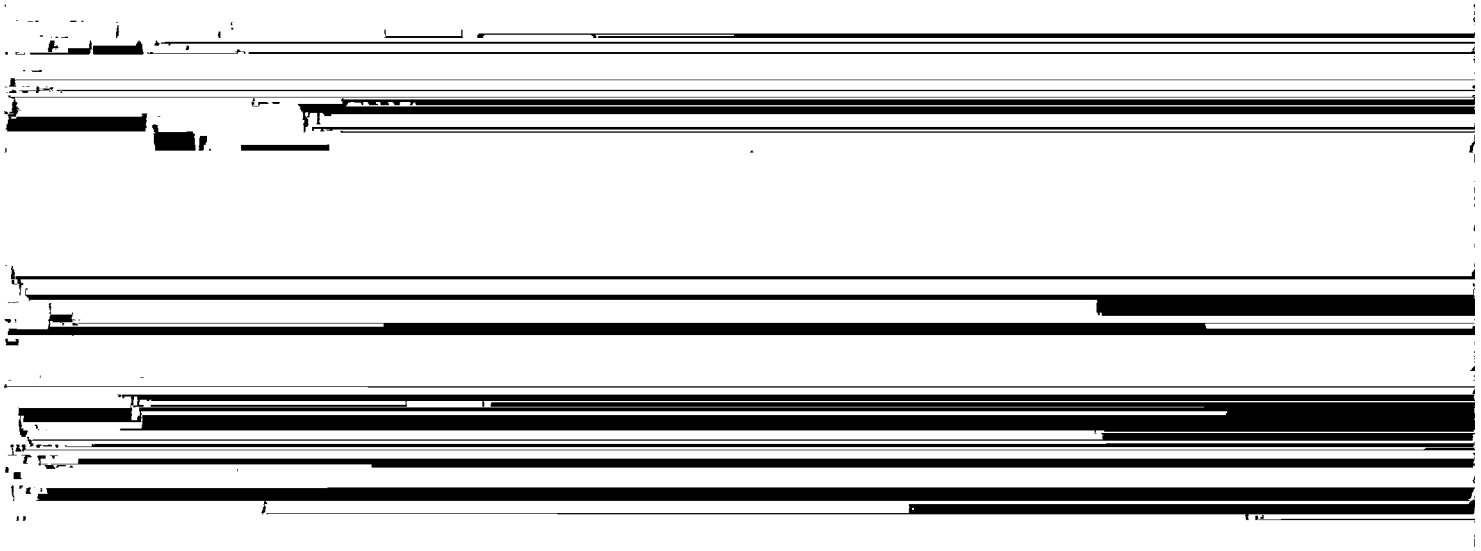


TABLE 7.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS

(The symbol < means less than; > means more than. Absence of an entry indicates that trees generally do not grow to the given height on that soil)

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8E, 8G---------- Hickory	---	Silky dogwood, American cranberrybush, Amur honeysuckle, Amur privet.	White fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce, Austrian pine.	Eastern white pine, pin oak.
17A---------- Keomah	---	Silky dogwood, Amur honeysuckle, Amur privet, American cranberrybush.	Austrian pine, white fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce-----	Eastern white pine, pin oak.
19C3, 19D2, 19D3, 19E---------- Sylvan	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	White fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce, Austrian pine.	Eastern white pine, pin oak.
30F, 30G---------- Hamburg	Siberian peashrub	Osageorange, Russian olive, eastern redcedar, Washington hawthorn.	Honeylocust, northern catalpa, bur oak, black locust, green ash.	Siberian elm------	---
34D---------- Tallula	---	Amur privet, Amur honeysuckle, American cranberrybush, [illegible]	White fir, blue spruce, northern whitecedar, Washington [illegible]	Norway spruce, Austrian pine.	Eastern white pine, pin oak.
35D2, 35E2-------- Bold	Siberian peashrub	Osageorange, jack pine, eastern redcedar, Washington hawthorn, Russian olive.	Northern catalpa, honeylocust.	---	---
36A---------- Tama	---	American cranberrybush, Amur honeysuckle, Amur privet, silky dogwood.	Blue spruce, northern whitecedar, Washington hawthorn, white fir.	Norway spruce, Austrian pine.	Eastern white pine, pin oak.
36B, 36C2--------- Tama	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	White fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce, Austrian pine.	Eastern white pine, pin oak.
37---------- [illegible]	---	Silky dogwood, [illegible]	Washington [illegible]	Austrian pine, [illegible]	Pin oak, eastern [illegible]

TABLE 7.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
43A, 43B---------- Ipava	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	Austrian pine, white fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce-----	Eastern white pine, pin oak.
49---------- Watseka	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	Austrian pine, white fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce-----	Eastern white pine, pin oak.
53B, 53D---------- Bloomfield	Siberian peashrub	Radiant crabapple, eastern redcedar, autumn olive, Washington hawthorn, Amur honeysuckle, lilac.	Austrian pine, jack pine, red pine.	Eastern white pine	---
54B, 54D, 54E----- Plainfield	Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn, autumn olive, Amur honeysuckle, lilac.	Red pine, Austrian pine, jack pine.	Eastern white pine	---
68---------- Sable	---	Silky dogwood, American cranberrybush, Amur honeysuckle, Amur privet.	Washington hawthorn, white fir, blue spruce, northern whitecedar, Austrian pine, Norway spruce.	Eastern white pine	Pin oak.
70---------- Beaucoup	---	Silky dogwood, Amur privet, American cranberrybush, Amur honeysuckle.	Norway spruce, Austrian pine, northern whitecedar, blue spruce, white fir, Washington hawthorn.	Eastern white pine	Pin oak.
71---------- Darwin	---	Amur privet, silky dogwood, Amur honeysuckle, American cranberrybush.	Norway spruce, Austrian pine, northern whitecedar, blue spruce, Washington hawthorn, white fir.	Eastern white pine	Pin oak.
74---------- Radford	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	Austrian pine, white fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce-----	Eastern white pine, pin oak.

TABLE 7.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
78---------- Arenzville	---	Amur privet, Amur honeysuckle, silky dogwood, American cranberrybush.	Austrian pine, white fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce-----	Pin oak, eastern white pine.
81---------- Littleton	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	Eastern white pine, Austrian pine, white fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce-----	Pin oak.
87B---------- Dickinson	Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn, autumn olive, Amur honeysuckle, lilac.	Eastern white pine, Austrian pine, red pine, jack pine.	---	---
88B---------- Sparta	Siberian peashrub	Amur honeysuckle, lilac, eastern redcedar, radiant crabapple, Washington hawthorn, autumn olive.	Red pine, jack pine, Austrian pine.	Eastern white pine	---
107---------- Sawmill	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	Norway spruce, Austrian pine, northern whitecedar, blue spruce, white	Eastern white pine	Pin oak.

TABLE 7.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
200---------- Orio	---	American cranberrybush, Amur honeysuckle, Amur privet, silky dogwood.	Blue spruce, Norway spruce, northern whitecedar, Austrian pine, white fir, Washington hawthorn.	Eastern white pine	Pin oak.
201---------- Gilford	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush.	Norway spruce, northern whitecedar, Washington hawthorn, blue spruce, white fir, Austrian pine.	Eastern white pine	Pin oak.
206---------- Thorp	---	Silky dogwood, American cranberrybush, Amur honeysuckle, Amur privet.	Washington hawthorn, white fir, blue spruce, northern whitecedar, Austrian pine, Norway spruce.	Eastern white pine	Pin oak.
244---------- Hartsburg	---	Silky dogwood, American cranberrybush, Amur honeysuckle, Amur privet.	Washington hawthorn, white fir, blue spruce, northern whitecedar, Austrian pine, Norway spruce.	Eastern white pine	Pin oak.
279A, 279B-------- Rozetta	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	White fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce, Austrian pine.	Eastern white pine, pin oak.
280B, 280C2, [illegible]	---	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 7.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
304A---------- Landes	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush.	Austrian pine, white fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce-----	Eastern white pine, pin oak.
430B, 430C-------- Raddle	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	White fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce, Austrian pine.	Eastern white pine, pin oak.
451---------- Lawson	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	Austrian pine, white fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce-----	Eastern white pine, pin oak.
567C2---------- Elkhart	---	Amur privet, Amur honeysuckle,	White fir, blue spruce, northern	Norway spruce, Austrian pine.	Eastern white pine, pin oak.

TABLE 7.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
962C3, 962D3, 962E2: Bold	Siberian peashrub	Osageorange, jack pine, eastern redcedar, Washington hawthorn, Russian olive.	Northern catalpa, honeylocust.	---	---
962E3: Bold	Siberian peashrub	Osageorange, jack pine, eastern redcedar, Washington hawthorn, Russian olive.	Northern catalpa, honeylocust.	---	---
Sylvan	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	White fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce, Austrian pine.	Eastern white pine, pin oak.
965D2, 965E: Tallula	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	White fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce, Austrian pine.	Eastern white pine, pin oak.
Bold	Siberian peashrub	Osageorange, jack pine, eastern redcedar, Washington hawthorn, Russian olive.	Northern catalpa, honeylocust.	---	---
3070 Beaucoup	---	Silky dogwood, Amur privet, American cranberrybush, Amur honeysuckle.	Norway spruce, Austrian pine, northern whitecedar, blue spruce, white fir, Washington hawthorn.	Eastern white pine	Pin oak.
3073A Ross	---	Silky dogwood, American cranberrybush, Amur honeysuckle, Amur privet.	Washington hawthorn, northern whitecedar, blue spruce, white fir, Austrian pine.	Norway spruce	Pin oak, eastern white pine.
3115 Dockery	---	Silky dogwood, Amur honeysuckle, American cranberrybush, Amur privet.	Washington hawthorn, northern whitecedar, blue spruce, white fir, Austrian pine.	Norway spruce	Eastern white pine, pin oak.

TABLE 7.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
4776. Comfrey					
7070---------- Beaucoup	---	Silky dogwood, Amur privet, American cranberrybush, Amur honeysuckle.	Norway spruce, Austrian pine, northern whitecedar, blue spruce, white fir, Washington hawthorn.	Eastern white pine	Pin oak.
7078---------- Arenzville	---	Amur privet, Amur honeysuckle, silky dogwood, American cranberrybush.	Austrian pine, white fir, blue spruce, northern whitecedar, Washington hawthorn.	Norway spruce-----	Pin oak, eastern white pine.
7107---------- Sawmill	---	Amur privet, Amur honeysuckle, American cranberrybush, silky dogwood.	Norway spruce, Austrian pine, northern whitecedar, blue spruce, white	Eastern white pine	Pin oak.
7284---------- Tice	Redosier dogwood, gray dogwood.	Silky dogwood, autumn olive.	Amur maple, Russian olive, baldcypress.	Eastern white pine, Norway spruce.	Eastern cottonwood, American sycamore, red maple.

TABLE 8.--RECREATIONAL 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	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
8E---------- Hickory	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
8G---------- Hickory	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
17A---------- Keomah	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Slight----------	Slight.
19C3---------- Sylvan	Slight----------	Slight----------	Severe: slope.	Slight----------	Slight.
19D2, 19D3----------	Moderate:	Moderate:	Severe:	Severe:	Moderate:
Sylvan	slope.	slope.	slope.	erodes easily.	slope.
19E---------- Sylvan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
30F, 30G---------- Hamburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
34D----------	Moderate:	Moderate:	Severe:	Slight	Moderate:

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
53D--- Bloomfield	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope.
54B--- Plainfield	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
54D--- Plainfield	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
54E--- Plainfield	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty, slope.
68--- Sable	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
70--- Beaucoup	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
71--- Darwin	Severe: flooding, ponding, percs slowly.	Severe: ponding, too clayey, percs slowly.	Severe: too clayey, ponding, percs slowly.	Severe: ponding, too clayey.	Severe: ponding, too clayey.
74--- Radford	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
78--- Arenzville	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
81--- Littleton	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
87B--- Dickinson	Slight---	Slight---	Moderate: slope.	Slight---	Slight.
88B--- Sparta	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, small stones.	Moderate: too sandy.	Moderate: droughty.
107--- Sawmill	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
131B--- Alvin	Slight---	Slight---	Moderate: slope.	Slight---	Moderate: droughty.
131C2--- Alvin	Slight---	Slight---	Severe: slope.	Slight---	Moderate: droughty.
131D--- Alvin	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight---	Moderate: slope, droughty.
172--- Hoopeston	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
188A---------- Beardstown	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
200---------- Orio	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
201---------- Gilford	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
206---------- Thorp	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
244---------- Hartsburg	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
279A---------- Rozetta	Slight----------	Slight----------	Slight----------	Slight----------	Slight.
279B---------- Rozetta	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
280B---------- Fayette	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
280C2---------- Fayette	Slight----------	Slight----------	Severe: slope.	Slight----------	Slight.
280D2---------- Fayette	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
280E---------- Fayette	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tice	flooding.	flooding, wetness.	flooding.	wetness, flooding.	flooding.
302---------- Ambraw	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
304A---------- Landes	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
430B---------- Raddle	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
430C---------- Raddle	Slight----------	Slight----------	Severe: slope.	Slight----------	Slight.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
776--Comfrey	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
943E:					
Seaton	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Timula	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
943G:					
Seaton	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
Timula	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
962C3:					
Sylvan	Slight	Slight	Severe: slope.	Slight	Slight.
Bold	Slight	Slight	Severe: slope.	Slight	Slight.
962D3:					
Sylvan	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
Bold	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
962E2:					
Sylvan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Bold	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
962E3:					
Bold	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Sylvan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
965D2:					
Tallula	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
Bold	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
965E:					
Tallula	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Bold	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
3070---------- Beaucoup	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
3073A---------- Ross	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dockery	flooding.	flooding, wetness.	flooding.	flooding.	flooding.
4776---------- Comfrey	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
7070---------- Beaucoup	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
7078---------- Arenzville	Severe: flooding.	Slight----------	Slight----------	Slight----------	Slight.
7107---------- [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 9.--WILDLIFE HABITAT

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

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
8E---------- Hickory	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
8G---------- Hickory	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
17A---------- Keomah	Good	Good	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair.
19C3, 19D2, 19D3--- Sylvan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
19E---------- Sylvan	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
30F, 30G---------- Hamburg	Very poor.	Poor	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
34D---------- Tallula	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
35D2---------- Bold	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
35E2---------- Bold	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
36A---------- Tama	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
36B---------- Tama	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
36C2---------- Tama	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
37---------- Worthen	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
43A----------	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.

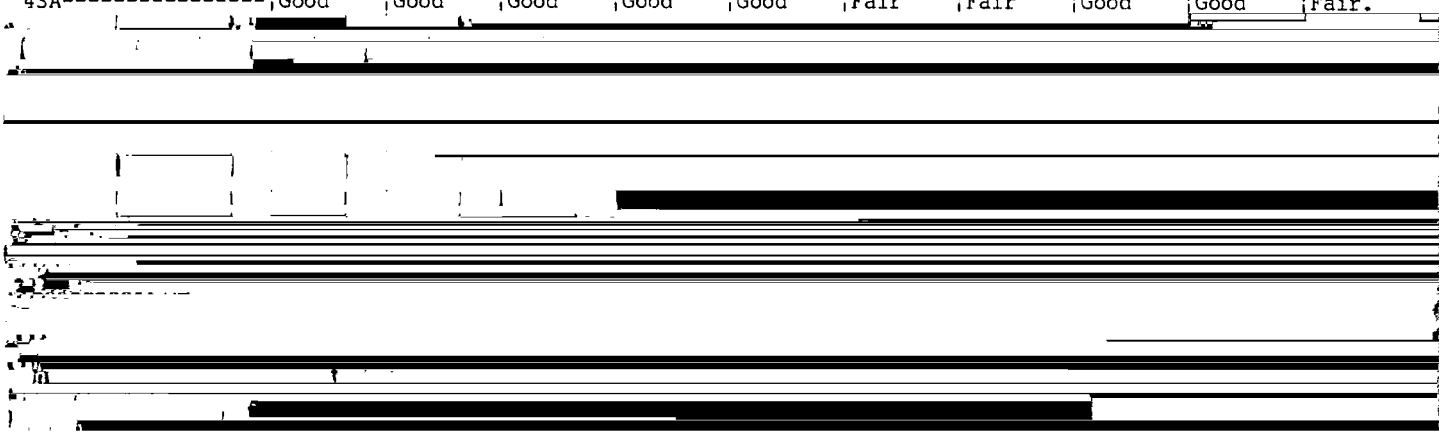


TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
68---------- Sable	Fair	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good.
70---------- Beaucoup	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
71---------- Darwin	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Fair.
74---------- Radford	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
78---------- Arenzville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
81---------- Littleton	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
87B---------- Dickinson	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
88B---------- Sparta	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
107---------- Sawmill	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
131B---------- Alvin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
131C2, 131D-------- Alvin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
172---------- Hoopeston	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.

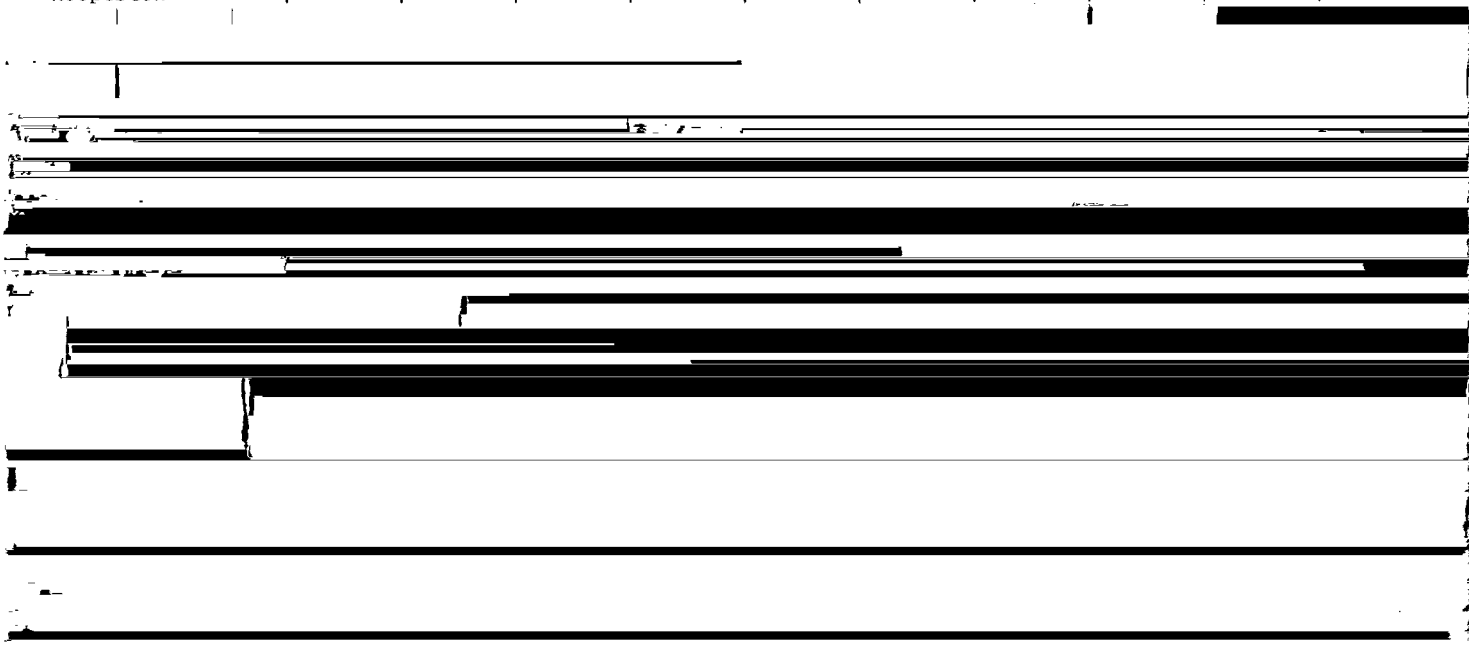


TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
284---------- Tice	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
302---------- Ambraw	Good	Fair	Good	Good	Fair	Good	Good	Good	Good	Good.
304A---------- Landes	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
430B, 430C---------- Raddle	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
451---------- Lawson	Good	Good	Fair	Good	Good	Fair	Fair	Good	Good	Fair.
567C2---------- Elkhart	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
682---------- Medway	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
776---------- Comfrey	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Poor	Good.
943E:										
Seaton----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Timula----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
943G:										
Seaton----------	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.

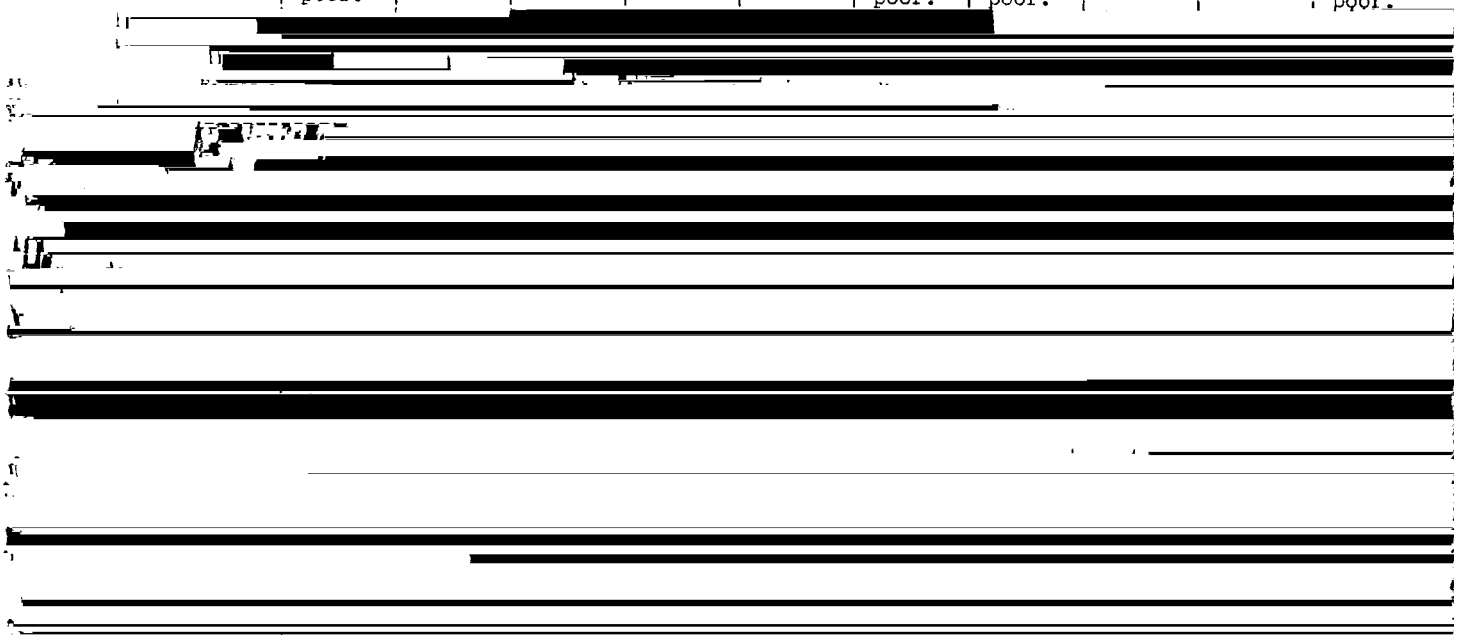


TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
965D2:										
Tallula	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Bold	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
965E:										
Tallula.										
Bold	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
3070 Beaucoup	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3073A Ross	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
3115 Dockery	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
4776 Comfrey	Very poor.	Poor	Poor	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
7070 Beaucoup	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good.
7078 Arenzville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
7107 Sawmill	Good	Good	Good	Fair	Fair	Good	Fair	Good	Fair	Fair.
7284 Tice	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
7302 Ambraw	Good	Fair	Good	Good	Fair	Good	Good	Good	Good	Good.
7682 Medway	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

TABLE 10.--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. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
8E, 8G---------- Hickory	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
17A---------- Keomah	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, frost action, low strength.	Slight.
19C3---------- Sylvan	Slight---------	Moderate: shrink-swell.	Slight---------	Moderate: shrink-swell, slope.	Severe: low strength, frost action.	Slight.
19D2, 19D3-------- Sylvan	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
19E---------- Sylvan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
30F, 30G---------- Hamburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
34D---------- Tallula	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
35D2---------- Bold	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
35E2---------- Bold	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
49---------- Watseka	Severe: wetness, cutbanks cave.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness, frost action.	Moderate: too sandy, wetness, droughty.
53B---------- Bloomfield	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
53D---------- Bloomfield	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
54B---------- Plainfield	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Severe: droughty.
54D---------- Plainfield	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
54E---------- Plainfield	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
68---------- Sable	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding, frost action.	Severe: ponding.
70---------- Beaucoup	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, ponding, flooding.	Severe: ponding, flooding.
71---------- Darwin	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: low strength, ponding, shrink-swell.	Severe: ponding, too clayey.
74---------- Radford	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding, frost action.	Severe: flooding.
78---------- Arenzville	Moderate: wetness, flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding, frost action.	Severe: flooding.
81---------- Littleton	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, frost action.	Moderate: wetness.
87B---------- Dickinson	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Moderate: frost action.	Slight.
88B---------- Sparta	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
107---------- Sawmill	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
131B---------- Alvin	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Moderate: frost action.	Moderate: droughty.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
131C2---------- Alvin	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Moderate: frost action.	Moderate: droughty.
131D---------- Alvin	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, droughty.
172---------- Hoopeston	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action.	Moderate: wetness.
188A---------- Beardstown	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action.	Moderate: wetness.
200---------- Orio	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding, frost action.	Severe: ponding.
201---------- Gilford	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding, frost action.	Severe: ponding.
206---------- Thorp	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding, frost action.	Severe: ponding.
244---------- Hartsburg	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding, frost action.	Severe: ponding.
279A, 279B-------- Rozetta	Moderate: wetness.	Moderate: shrink-swell.	Moderate: wetness, shrink-swell.	Moderate: shrink-swell.	Severe: low strength, frost action.	Slight.
280B---------- Fayette	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: frost action, low strength.	Slight.
280C2---------- Fayette	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: slope, shrink-swell.	Severe: frost action, low strength.	Slight.
280D2---------- Fayette	Moderate: slope.	Moderate: slope, shrink-swell.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: frost action, low strength.	Moderate: slope.
280E---------- Fayette	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: frost action, low strength, slope.	Severe: slope.
284---------- Tice	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding, frost action.	Severe: flooding.
302---------- Ambraw	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
304A---------- Landes	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
430B---------- Raddle	Slight---------	Slight---------	Slight---------	Slight---------	Severe: frost action.	Slight.
430C---------- Raddle	Slight---------	Slight---------	Slight---------	Moderate: slope.	Severe: frost action.	Slight.
451---------- Lawson	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action.	Severe: flooding.
567C2---------- Elkhart	Slight---------	Moderate: shrink-swell.	Slight---------	Moderate: shrink-swell, slope.	Severe: low strength, frost action.	Slight.
682---------- Medway	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding, frost action, low strength.	Severe: flooding.
776---------- Comfrey	Severe: wetness, excess humus.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: flooding, wetness, low strength.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
943E, 943G: Seaton----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
Timula----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
962C3: Sylvan----------	Slight---------	Moderate: shrink-swell.	Slight---------	Moderate: shrink-swell, slope.	Severe: low strength, frost action.	Slight.
Bold----------	Slight---------	Slight---------	Slight---------	Moderate: slope.	Severe: frost action.	Slight.
962D3: Sylvan----------	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
Bold----------	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
962E2: Sylvan----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
962E2:						
Bold	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
962E3:						
Bold	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Sylvan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
965D2:						
Tallula	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength, frost action.	Moderate: slope.
Bold	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
965E:						
Tallula	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
Bold	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
3070 Beaucoup	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, ponding, flooding.	Severe: ponding, flooding.
3073A Ross	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding	Severe: flooding	Severe: flooding

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
7107---------- Sawmill	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness.
7284---------- Tice	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, frost action.	Moderate: wetness.
7302---------- Ambraw	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness.
7682---------- Medway	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: frost action, low strength.	Moderate: wetness.

TABLE 11.--SANITARY FACILITIES

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
8E, 8G---------- Hickory	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
17A---------- Keomah	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
19C3---------- Sylvan	Slight----------	Severe: slope.	Slight----------	Slight----------	Good.
19D2, 19D3---------- Sylvan	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
19E---------- Sylvan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
30F, 30G---------- Hamburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
34D---------- Tallula	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
35D2---------- Bold	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
35E2---------- Bold	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
36A---------- Tama	Moderate: wetness.	Moderate: seepage, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
36B---------- Tama	Slight----------	Moderate: slope, seepage.	Moderate: too clayey.	Slight----------	Fair: too clayey.
36C2---------- Tama	Slight----------	Severe: slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
37---------- Worthen	Slight----------	Moderate: seepage.	Slight----------	Slight----------	Good.
43A, 43B---------- Ipava	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
49---------- Watseka	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, seepage, too sandy.	Severe: seepage, wetness.	Poor: too sandy, wetness, seepage.
53B---------- Bloomfield	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.

TABLE 11.--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
53D---------- Bloomfield	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
54B---------- Plainfield	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy, seepage.
54D---------- Plainfield	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy, seepage.
54E---------- Plainfield	Severe: slope, poor filter.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: too sandy, slope, seepage.
68---------- Sable	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: hard to pack, ponding.
70---------- Beaucoup	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Poor: ponding.
71---------- Darwin	Severe: ponding, percs slowly.	Slight----------	Severe: ponding, too clayey.	Severe: ponding.	Poor: too clayey, hard to pack, ponding.
74---------- Radford	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
78---------- Arenzville	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
81---------- Littleton	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
87B---------- Dickinson	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
88B---------- Sparta	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
107---------- Sawmill	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
131B---------- Alvin	Slight----------	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage.
131C2---------- Alvin	Slight----------	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage.

TABLE 11.--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
131D---------- Alvin	Moderate: slope.	Severe: seepage,	Severe: seepage,	Severe: seepage.	Poor: seepage.

TABLE 11.--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
304A---------- Landes	Severe: flooding, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage, too sandy.	Severe: flooding, seepage.	Poor: seepage, too sandy.
430B---------- Raddle	Slight----------	Moderate: seepage, slope.	Slight----------	Slight----------	Good.
430C---------- Raddle	Slight----------	Severe: slope.	Slight----------	Slight----------	Good.
451---------- Lawson	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
567C2---------- Elkhart	Slight----------	Severe: slope.	Slight----------	Slight----------	Good.
682---------- Medway	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness, seepage.	Fair: wetness.
776---------- Comfrey	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
943E, 943G:					
Seaton----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Timula----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
962C3:					
Sylvan----------	Slight----------	Severe: slope.	Slight----------	Slight----------	Good.
Bold----------	Slight----------	Severe: slope.	Slight----------	Slight----------	Good.
962D3:					
Sylvan----------	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Bold----------	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
962E2:					
Sylvan----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Bold----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
962E3:					
Bold----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.

TABLE 11.--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
962E3:					
Sylvan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
965D2:					
Tallula	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Bold	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
965E:					
Tallula	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Bold	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
3070--- Beaucoup	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Poor: ponding.
3073A--- Ross	Severe: flooding.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage.	Good.
3115--- Dockery	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
4776--- Comfrey	Severe: flooding, ponding.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: too sandy, ponding.
7070--- Beaucoup	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.
7078--- Arenzville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
7107--- Sawmill	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
7284--- Tice	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: hard to pack.
7302--- Ambraw	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
7682--- Medway	Severe: wetness.	Severe: wetness, seepage.	Severe: seepage, wetness.	Severe: wetness, seepage.	Fair: wetness.

TABLE 12.--CONSTRUCTION MATERIALS

[redacted]

"good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
8E---------- Hickory	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
8G---------- Hickory	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
17A---------- Keomah	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.
19C3---------- Sylvan	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
19D2---------- Sylvan	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
19D3---------- Sylvan	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
19E---------- Sylvan	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
30F, 30G---------- Hamburg	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
34D---------- Tallula	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
35D2---------- Bold	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
35E2----------	Fair:	Improbable:	Improbable:	Poor:

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
68--- Sable	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
70--- Beaucoup	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
71--- Darwin	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
74--- Radford	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
78--- Arenzville	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
81--- Littleton	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
87B--- Dickinson	Good	Probable	Improbable: too sandy.	Good.
88B--- Sparta	Good	Probable	Improbable: too sandy.	Poor: too sandy.
107--- Sawmill	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
131B, 131C2, 131D--- Alvin	Good	Probable	Improbable: too sandy.	Poor: too sandy.
172--- Hoopeston	Fair: wetness.	Probable	Improbable: too sandy.	Fair: small stones, thin layer.
188A--- Beardstown	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
200--- Orio	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
201--- Gilford	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
206--- Thorp	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
244---	Poor:	Improbable:	Improbable:	Poor:

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
280F---------- [redacted]	Poor: [redacted]	Improbable: [redacted]	Improbable: [redacted]	Poor: [redacted]

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
962E2:				
Sylvan	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Bold	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
962E3:				
Bold	Fair:	Improbable:	Improbable:	Poor:

TABLE 13.--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 evaluated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
8F, 8G----------	Severe:	Moderate:	Deep to water	Slope.	Slope,	Slope,
17A---------- Keomah	Slight---------	Severe: hard to pack.	Frost action, percs slowly.	Wetness, percs slowly.	Wetness, erodes easily, percs slowly.	Erodes easily, percs slowly.
19C3---------- Sylvan	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
19D2, 19D3, 19E---	Severe:	Severe:	Deep to water	Slope,	Slope,	Slope,

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
54D, 54E---------- Plainfield	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, soil blowing.	Slope, too sandy, soil blowing.	Droughty, slope.
68---------- Sable	Moderate: seepage.	Severe: ponding.	Ponding, frost action.	Ponding--------	Ponding--------	Wetness.
70---------- Beaucoup	Slight---------	Severe: ponding.	Ponding, flooding, frost action.	Ponding, flooding.	Ponding--------	Wetness.
71---------- Darwin	Slight---------	Severe: hard to pack, ponding.	Ponding, percs slowly.	Ponding, slow intake, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
74---------- Radford	Moderate: seepage.	Severe: wetness.	Flooding, frost action.	Wetness, flooding.	Wetness--------	Wetness.
78---------- Arenzville	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily, flooding.	Erodes easily	Erodes easily.
81---------- Littleton	Moderate: seepage.	Severe: wetness, piping.	Frost action---	Wetness--------	Erodes easily, wetness.	Wetness, erodes easily.
87B---------- Dickinson	Severe: seepage.	Severe: seepage.	Deep to water	Soil blowing, slope.	Soil blowing, too sandy.	Favorable.
88B---------- Sparta	Severe: seepage.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
107---------- Sawmill	Moderate: seepage.	Severe: wetness.	Flooding, frost action.	Wetness, flooding.	Wetness--------	Wetness.
131B, 131C2------- Alvin	Severe: seepage.	Severe: piping, seepage.	Deep to water	Slope, soil blowing, droughty.	Soil blowing---	Droughty.
131D---------- Alvin	Severe: seepage, slope.	Severe: piping, seepage.	Deep to water	Slope, soil blowing, droughty.	Slope, soil blowing.	Slope, droughty.
172---------- Hoopeston	Severe: seepage.	Severe: seepage, piping, wetness.	Frost action, cutbanks cave.	Wetness, soil blowing, rooting depth.	Wetness, too sandy, soil blowing.	Wetness, rooting depth.
188A---------- Beardstown	Severe: seepage.	Severe: piping, wetness.	Frost action---	Wetness--------	Wetness--------	Wetness.
200---------- Orio	Moderate: seepage.	Severe: seepage, piping, ponding.	Ponding, frost action, cutbanks cave.	Ponding--------	Ponding, too sandy.	Wetness.
201---------- Gilford	Severe: seepage.	Severe: seepage, piping, ponding.	Ponding, frost action, cutbanks cave.	Ponding, soil blowing.	Ponding, too sandy, soil blowing.	Wetness.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
206--------- Thorp	Severe: seepage.	Severe: ponding.	Ponding, percs slowly, frost action.	Ponding, percs slowly, erodes easily.	Erodes easily, ponding, percs slowly.	Wetness, erodes easily, percs slowly.
244--------- Hartsburg	Moderate: seepage.	Severe: ponding.	Ponding, frost action.	Ponding--------	Ponding--------	Wetness.
279A--------- Rozetta	Moderate: seepage.	Slight---------	Deep to water	Erodes easily	Erodes easily	Erodes easily.
279B--------- Rozetta	Moderate: seepage, slope.	Slight---------	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
280B, 280C2------- Fayette	Moderate: slope, seepage.	Slight---------	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
280D2, 280E------- Fayette	Severe: slope.	Slight---------	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
284--------- Tice	Moderate: seepage.	Severe: wetness.	Flooding, frost action.	Wetness--------	Wetness--------	Favorable.
302--------- Ambraw	Moderate: seepage.	Severe: wetness.	Flooding, frost action.	Wetness, flooding.	Wetness--------	Wetness.
304A--------- Landes	Severe: seepage.	Severe: seepage, piping.	Deep to water	Favorable------	Too sandy, soil blowing.	Rooting depth.
430B, 430C-------- Raddle	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope----------	Erodes easily	Erodes easily.
451--------- Lawson	Moderate: seepage.	Severe: wetness.	Flooding, frost action.	Wetness, flooding.	Erodes easily, wetness.	Wetness, erodes easily.
567C2--------- Elkhart	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope----------	Erodes easily	Erodes easily.
682--------- Medway	Severe: seepage.	Severe: piping, wetness.	Frost action, flooding.	Wetness, flooding.	Wetness--------	Favorable.
776--------- Comfrey	Moderate: seepage.	Severe: wetness.	Flooding, frost action.	Wetness, flooding.	Wetness--------	Wetness.
943E, 943G: Seaton----------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Timula----------	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
962C3: Sylvan----------	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
962C3: Bold	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
962D3, 962E2: Sylvan	Severe:	Severe:	Deep to water	Slope.	Slope.	Slope.

TABLE 14.--ENGINEERING INDEX PROPERTIES

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

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
8E, 8G----------	0-12	Loam----------	CL	A-6, A-4	0-5	95-100	90-100	90-100	75-95	20-35	8-15
Hickory	12-53	Clay loam, silty clay loam, gravelly clay loam.	CL	A-6, A-7	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	53-60	Sandy loam, loam, gravelly clay loam.	CL-ML, CL	A-4, A-6	0-5	85-100	75-95	70-95	60-80	20-40	5-20
17A----------	0-14	Silt loam--------	CL-ML, CL	A-4, A-6	0	100	100	100	95-100	25-35	5-15
Keomah	14-36	Silty clay loam, silty clay.	CH, CL	A-7	0	100	100	100	95-100	45-60	30-45
	36-60	Silty clay loam,	CL	A-7, A-6	0	100	100	100	95-100	35-50	15-30

TABLE 14.--ENGINEERING INDEX PROPERTIES--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	
36B, 36C2-------- Tama	0-17	Silt loam---------	ML	A-6, A-7	0	100	100	100	95-100	35-50	10-20
	17-38	Silty clay loam	CL	A-7	0	100	100	100	95-100	40-50	15-25
	38-60	Silty clay loam, silt loam.	CL	A-6, A-7	0	100	100	100	95-100	35-45	15-25
37--------------- Worthen	0-31	Silt loam---------	CL	A-4, A-6	0	100	100	95-100	80-100	25-40	7-21
	31-60	Silt loam---------	CL	A-4, A-6	0	100	100	95-100	80-100	25-40	7-21
43A, 43B--------- Ipava	0-10	Silt loam---------	ML, CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-40	10-20
	10-45	Silty clay loam	CH, CL	A-7	0	100	100	95-100	90-100	45-70	25-40
	45-60	Silt loam---------	CL, CL-ML	A-6, A-4	0	100	100	95-100	90-100	25-40	5-20
49--------------- Watseka	0-17	Sand--------------	SP, SM, SP-SM	A-3, A-2	0	100	95-100	60-80	3-15	---	NP
	17-60	Sand, loamy sand	SP, SM, SP-SM	A-3, A-2	0	90-100	90-100	60-80	3-25	<20	NP-4
53B, 53D--------- Bloomfield	0-9	Fine sand---------	SM, SP, SP-SM	A-2-4, A-3	0	100	100	60-90	4-20	---	NP
	9-36	Fine sand, loamy fine sand, sand.	SP, SM, SP-SM	A-2-4, A-3	0	100	100	70-90	4-35	---	NP
	36-60	Fine sand, loamy fine sand, fine sandy loam.	SM, SP, SP-SM	A-2-4, A-3	0	100	100	65-90	4-35	<20	NP-3
54B, 54D, 54E---- Plainfield	0-8	Sand--------------	SP-SM, SM, SP	A-3, A-2, A-1	0	75-100	75-100	40-80	3-35	---	NP
	8-32	Sand--------------	SP, SM, SP-SM	A-3, A-1, A-2	0	75-100	75-100	40-70	1-15	---	NP
	32-60	Sand, fine sand	SP, SM, SP-SM	A-3, A-1, A-2	0	75-100	75-100	40-90	1-15	---	NP
68--------------- Sable	0-19	Silty clay loam	CL, CH, ML, MH	A-7	0	100	100	95-100	95-100	41-65	15-35
	19-50	Silty clay loam, silt loam.	CL, CH	A-7	0	100	100	95-100	95-100	40-55	20-35
	50-60	Silt loam, silty clay loam.	CL	A-6	0	100	100	95-100	95-100	30-40	10-20
70--------------- Beaucoup	0-18	Silty clay loam	CL	A-6, A-7	0	100	100	90-100	85-100	30-45	15-25
	18-50	Silty clay loam	CL	A-6, A-7	0	100	100	90-100	85-100	30-45	15-30
	50-60	Stratified very fine sandy loam to silty clay loam.	CL, CL-ML	A-6, A-4	0	100	100	90-100	60-95	20-40	5-20
71--------------- Darwin	0-21	Silty clay--------	CH, CL	A-7	0	100	100	100	90-100	45-85	25-55
	21-53	Silty clay, clay	CH, CL	A-7	0	100	100	100	85-100	45-85	25-55
	53-60	Silty clay loam, silty clay.	CL, CH	A-7, A-6	0	100	100	95-100	90-100	35-70	20-45
74--------------- Radford	0-12	Silt loam---------	ML, CL	A-4, A-6	0	100	100	95-100	80-100	30-40	5-15
	12-33	Silt loam---------	CL, ML	A-4, A-6	0	100	100	95-100	80-100	25-35	5-15
	33-60	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	95-100	80-95	35-50	15-25
78--------------- Arenzville	0-34	Silt loam---------	ML, CL-ML, CL	A-4	0	100	100	95-100	80-95	20-30	4-10
	34-60	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	90-100	85-95	30-45	10-20

TABLE 14.--ENGINEERING INDEX PROPERTIES--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	
81----------	0-10	Silt loam--------	CL	A-4, A-6	0	100	100	95-100	90-100	25-40	7-20
Littleton	10-36	Silt loam--------	CL	A-4, A-6	0	100	100	95-100	90-100	25-40	7-20
	36-60	Silt loam--------	CL-ML, CL	A-4, A-6, A-7	0	100	100	95-100	80-100	20-45	5-20
87B----------	0-12	Fine sandy loam	SM, SC, SM-SC	A-4, A-2	0	100	100	85-95	30-50	15-30	NP-10
Dickinson											
	12-38	Fine sandy loam, sandy loam.	SM, SC, SM-SC	A-4	0	100	100	85-95	35-50	15-30	NP-10
	38-48	Loamy sand, loamy fine sand, fine sand.	SM, SP-SM, SM-SC	A-2, A-3	0	100	100	80-95	5-20	10-20	NP-5
	48-60	Sand, loamy fine sand, loamy sand.	SM, SP-SM	A-3, A-2	0	100	100	70-90	5-20	---	NP
88B----------	0-17	Loamy sand-------	SM	A-2, A-4	0	85-100	85-100	50-95	15-50	---	NP
Sparta	17-30	Loamy sand, sand	SP-SM, SM	A-2, A-3, A-4	0	85-100	85-100	50-95	5-50	---	NP
	30-60	Sand, fine sand	SP-SM, SM, SP	A-2, A-3	0	85-100	85-100	50-95	2-30	---	NP
107----------	0-10	Silty clay loam	CL	A-6, A-7	0	100	100	95-100	85-100	30-50	15-30
Sawmill	10-29	Silty clay loam	CL	A-6, A-7	0	100	100	95-100	85-100	30-50	15-30

TABLE 14.--ENGINEERING INDEX PROPERTIES--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	
201---------- Gilford	0-18	Sandy loam-------	SC, SM-SC	A-4, A-2-4	0	95-100	90-100	60-70	30-40	20-30	4-10
	18-31	Sandy loam, fine sandy loam.	SM, SC, SM-SC	A-2-4	0	90-100	90-100	55-70	20-35	15-30	NP-8
	31-60	Loamy sand, sand	SM, SP, SP-SM	A-3, A-1-b, A-2-4	0	90-100	85-100	18-60	3-20	---	NP
206---------- Thorp	0-19	Silt loam--------	CL	A-6, A-4	0	95-100	95-100	90-100	75-95	20-40	8-19
	19-50	Silty clay loam	CL	A-7, A-6	0	95-100	95-100	90-100	75-95	35-50	13-27
	50-60	Silt loam, clay loam, loam.	CL	A-6, A-4, A-7	0	90-100	90-100	90-100	70-90	20-50	8-26
244---------- Hartsburg	0-17	Silty clay loam	CL, ML	A-7, A-6	0	100	100	100	95-100	35-50	10-25
	17-34	Silty clay loam	CL, CH	A-7	0	100	100	95-100	95-100	40-55	20-30
	34-60	Silt loam, loam	CL	A-6	0	95-100	90-100	90-100	70-100	25-40	11-20
279A, 279B------- Rozetta	0-10	Silt loam--------	CL	A-4, A-6	0	100	100	95-100	95-100	24-35	8-15
	10-15	Silt loam--------	CL-ML, CL	A-4, A-6	0	100	100	95-100	95-100	20-30	5-15
	15-33	Silty clay loam	CL	A-7, A-6	0	100	100	95-100	95-100	35-50	15-30
	33-60	Silt loam--------	CL	A-6, A-4	0	100	100	95-100	85-100	25-40	7-20
280B, 280C2, 280D2, 280E----- Fayette	0-12	Silt loam--------	CL-ML, CL	A-4, A-6	0	100	100	100	95-100	25-35	5-15
	12-56	Silty clay loam, silt loam.	CL	A-6, A-7	0	100	100	100	95-100	35-45	15-25
	56-60	Silt loam--------	CL	A-6	0	100	100	100	95-100	30-40	10-20
284---------- Tice	0-19	Silty clay loam	CL	A-6, A-7	0	100	100	90-100	80-95	30-45	10-20
	19-53	Silty clay loam, silt loam.	CL, CH	A-7	0	100	100	95-100	85-95	40-55	15-30
	53-60	Stratified silty clay loam to loam.	CL-ML, CL	A-4, A-6, A-7	0	100	100	60-95	55-80	25-45	5-20
302---------- Ambraw	0-17	Clay loam--------	CL	A-6, A-7	0	100	100	85-95	70-95	30-45	10-20
	17-30	Clay loam--------	CL, CH	A-6, A-7	0	100	100	80-90	60-80	35-55	15-30
	30-35	Clay loam, loam	CL	A-7, A-6	0	100	100	85-95	50-85	30-50	10-25
	[illegible]										

TABLE 14.--ENGINEERING INDEX PROPERTIES--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	
682---------- Medway	0-15	Loam----------	ML, CL, CL-ML	A-4, A-6	0	100	100	90-100	70-80	20-40	3-15
	15-38	Loam, silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6, A-7	0	95-100	80-95	75-90	70-90	20-45	4-20
	38-60	Stratified loamy sand to silty clay loam.	ML, CL, SM-SC, SM	A-4, A-2, A-6	0	90-100	75-100	45-95	25-75	15-30	NP-15
776---------- Comfrey	0-7	Clay loam--------	OH, ML, CL, CH	A-7	0	100	100	90-100	65-95	40-55	15-25
	7-30	Clay loam, loam	OL, OH, MH, ML	A-7	0	100	100	85-100	65-85	45-60	12-25
	30-60	Clay loam, loam	CL	A-7, A-6	0	100	100	80-100	60-85	35-50	12-25
943E, 943G: Seaton----------	0-6	Silt loam--------	CL, CL-ML, ML	A-4, A-6, A-7	0	100	100	100	95-100	20-45	5-20
	6-60	Silt loam--------	CL, CL-ML	A-6, A-4	0	100	100	100	90-100	25-40	5-20
Timula----------	0-21	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	85-100	25-35	NP-10
	21-60	Silt loam, silt	ML, CL-ML	A-4	0	100	100	95-100	85-100	25-35	NP-10
962C3, 962D3: Sylvan----------	0-8	Silty clay loam	CL	A-7, A-6	0	100	100	100	95-100	35-50	20-30
	8-27	Silty clay loam, silt loam.	CL	A-7, A-6	0	100	100	100	95-100	35-50	20-30
	27-60	Silt loam--------	CL, CL-ML	A-6, A-4	0	100	100	95-100	95-100	20-40	5-20
Bold----------	0-9	Silt loam--------	ML, CL, CL-ML	A-4, A-6	0	100	100	100	90-100	20-35	3-15
	9-60	Silt loam, silt	ML, CL, CL-ML	A-4, A-6	0	100	100	100	90-100	20-35	3-15
962E2: Sylvan----------	0-6	Silt loam--------	CL-ML, CL	A-4, A-6	0	100	100	100	95-100	25-35	5-15
	6-28	Silty clay loam,	CL	A-6, A-7	0	100	100	100	95-100	35-50	20-30

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and	Depth	USDA texture	Classification		Frag- ments	Percentage passing sieve number--			Liquid	Plas-
			Unified	AASHTO						

TABLE 14.--ENGINEERING INDEX PROPERTIES--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	
7302---------- Ambraw	0-14	Clay loam--------	CL	A-6, A-7	0	100	100	85-95	70-95	30-45	10-20
	14-28	Clay loam--------	CL, CH	A-6, A-7	0	100	100	80-90	60-80	35-55	15-30
	28-38	Clay loam, loam	CL	A-7, A-6	0	100	100	85-95	50-85	30-50	10-25
	38-60	Stratified clay loam to sandy loam.	SC, ML, CL, SM	A-6, A-4	0	100	90-100	80-90	40-80	20-40	NP-17
7682---------- Medway	0-17	Loam----------	ML, CL, CL-ML	A-4, A-6	0	100	100	90-100	70-80	20-40	3-15
	17-54	Loam, silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6, A-7	0	95-100	80-95	75-90	70-90	20-45	4-20
	54-60	Stratified gravelly sandy loam to silty clay loam.	ML, CL, SM, SC	A-2, A-4, A-6, A-1-b	0-5	80-100	65-100	35-95	20-75	15-30	NP-15

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

(The symbol < means less than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
8E, 8G	0-12	19-25	1.30-1.50	0.6-2.0	0.20-0.22	4.5-7.3	Low	0.37	5	6	1-2
Hickory	12-53	27-35	1.45-1.65	0.6-2.0	0.15-0.19	4.5-6.0	Moderate	0.37			
	53-60	15-32	1.50-1.70	0.6-2.0	0.11-0.19	5.1-8.4	Low	0.37			
17A	0-14	16-22	1.30-1.40	0.6-2.0	0.22-0.24	4.5-7.3	Low	0.37	5	6	1-2
Keomah	14-36	27-42	1.30-1.45	0.06-0.6	0.18-0.20	4.5-5.5	High	0.37			
	36-60	24-38	1.40-1.55	0.2-0.6	0.18-0.20	5.1-6.5	Moderate	0.37			
19C3	0-8	27-32	1.25-1.45	0.6-2.0	0.20-0.22	5.6-7.3	Moderate	0.37	4	7	<1
Sylvan	8-29	25-35	1.30-1.50	0.6-2.0	0.18-0.20	5.6-7.3	Moderate	0.37			
	29-60	18-27	1.30-1.50	0.6-2.0	0.20-0.22	6.6-8.4	Low	0.37			
19D2	0-9	20-27	1.20-1.40	0.6-2.0	0.20-0.22	5.6-7.3	Low	0.37	5	6	1-2
Sylvan	9-31	25-35	1.30-1.50	0.6-2.0	0.18-0.20	5.6-7.3	Moderate	0.37			
	31-60	18-27	1.30-1.50	0.6-2.0	0.20-0.22	6.6-8.4	Low	0.37			
19D3	0-4	27-32	1.25-1.45	0.6-2.0	0.20-0.22	5.6-7.3	Moderate	0.37	4	7	<1
Sylvan	4-27	25-35	1.30-1.50	0.6-2.0	0.18-0.20	5.6-7.3	Moderate	0.37			
	27-60	18-27	1.30-1.50	0.6-2.0	0.20-0.22	6.6-8.4	Low	0.37			
19E	0-4	18-27	1.20-1.40	0.6-2.0	0.22-0.24	5.6-7.3	Low	0.37	5	6	1-2
Sylvan	4-10	15-25	1.25-1.45	0.6-2.0	0.20-0.22	5.6-7.3	Low	0.37			
	10-27	25-35	1.30-1.50	0.6-2.0	0.18-0.20	5.6-7.3	Moderate	0.37			
	27-60	18-27	1.30-1.50	0.6-2.0	0.20-0.22	6.6-8.4	Low	0.37			
30F, 30G	0-7	6-12	1.20-1.30	0.6-2.0	0.20-0.24	6.6-8.4	Low	0.43	5	4L	.5-2
Hamburg	7-60	6-12	1.20-1.30	0.6-2.0	0.17-0.22	7.4-8.4	Low	0.43			
34D	0-10	10-20	1.10-1.30	0.6-2.0	0.22-0.24	6.6-7.8	Low	0.32	5	5	2-3
Tallula	10-26	12-18	1.10-1.30	0.6-2.0	0.20-0.22	6.6-7.8	Low	0.43			
	26-60	8-18	1.10-1.50	0.6-2.0	0.20-0.22	7.4-8.4	Low	0.43			

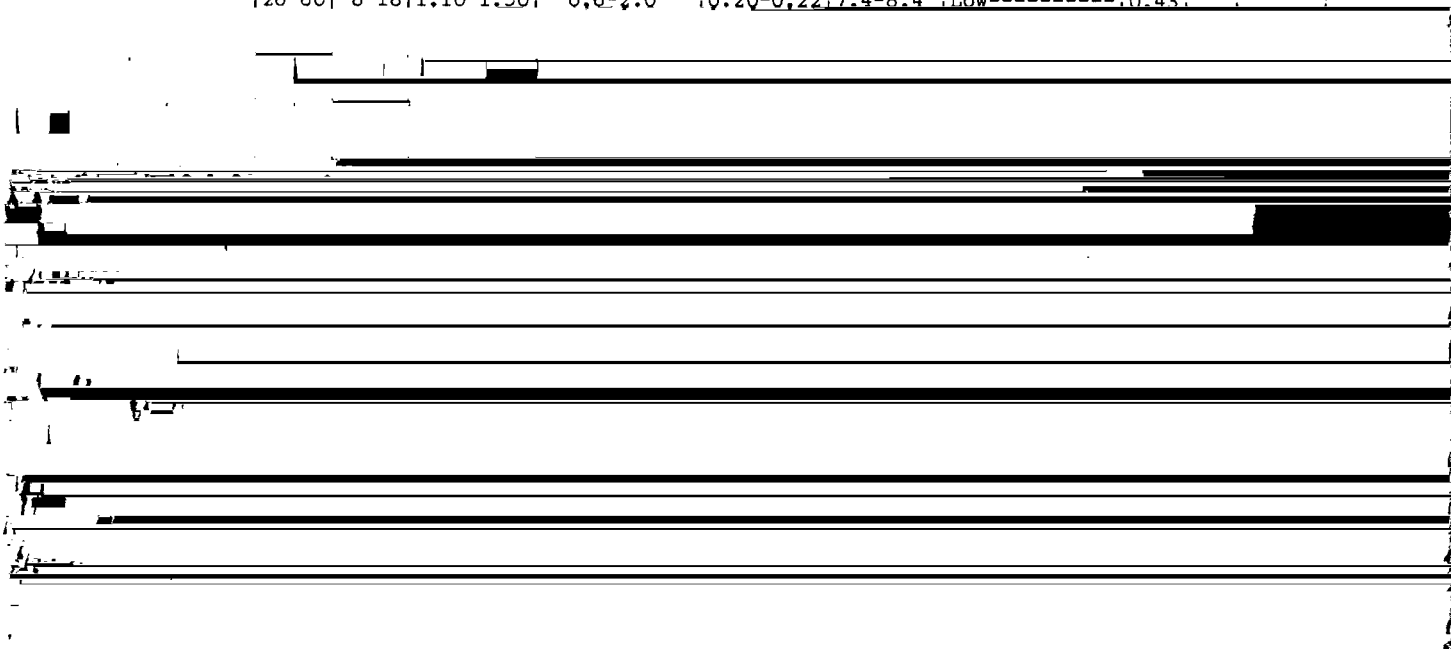


TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
54B, 54D, 54E----	0-8	2-5	1.50-1.65	6.0-20	0.04-0.09	4.5-7.3	Low----------	0.15	5	1	<1
Plainfield	8-32	0-4	1.50-1.65	6.0-20	0.04-0.07	4.5-6.5	Low----------	0.17			
	32-60	0-4	1.50-1.70	6.0-20	0.04-0.07	4.5-6.5	Low----------	0.17			
68----------	0-19	27-35	1.15-1.35	0.6-2.0	0.21-0.23	5.6-7.3	Moderate-----	0.28	5	6	5-6
Sable	19-50	24-35	1.30-1.50	0.6-2.0	0.18-0.20	5.6-7.8	Moderate-----	0.28			
	50-60	20-28	1.30-1.50	0.6-2.0	0.20-0.22	6.6-8.4	Low----------	0.28			
70----------	0-18	27-35	1.25-1.45	0.2-0.6	0.21-0.23	5.6-7.8	Moderate-----	0.32	5	7	5-6
Beaucoup	18-50	27-35	1.30-1.50	0.2-0.6	0.18-0.20	5.6-7.8	Moderate-----	0.32			
	50-60	10-30	1.40-1.65	0.2-0.6	0.18-0.22	6.1-8.4	Moderate-----	0.32			
71----------	0-21	40-45	1.20-1.40	<0.06	0.11-0.14	6.1-7.8	Very high----	0.28	3	4	4-5
Darwin	21-53	45-60	1.30-1.50	<0.06	0.11-0.14	6.1-7.8	Very high----	0.28			
	53-60	30-55	1.40-1.60	0.06-0.2	0.10-0.20	6.6-8.4	High---------	0.28			
74----------	0-12	18-27	1.40-1.60	0.6-2.0	0.22-0.24	5.6-7.8	Low----------	0.28	5	6	2-4
Radford	12-33	18-27	1.40-1.60	0.6-2.0	0.20-0.22	6.1-7.8	Low----------	0.28			
	33-60	24-35	1.35-1.55	0.6-2.0	0.18-0.20	6.6-7.8	Moderate-----	0.28			
78----------	0-34	10-18	1.20-1.55	0.6-2.0	0.20-0.24	5.6-7.8	Low----------	0.37	5	5	1-3
Arenzville	34-60	10-30	1.25-1.45	0.6-2.0	0.18-0.22	5.6-7.8	Moderate-----	0.37			
81----------	0-10	18-27	1.20-1.45	0.6-2.0	0.20-0.24	5.6-7.8	Low----------	0.32	5	6	3-4
Littleton	10-36	22-27	1.20-1.40	0.6-2.0	0.22-0.24	5.6-7.8	Low----------	0.32			
	36-60	18-27	1.20-1.40	0.6-2.0	0.20-0.22	5.6-7.8	Low----------	0.43			
87B----------	0-12	10-18	1.50-1.55	2.0-6.0	0.12-0.15	5.6-7.3	Low----------	0.20	4	3	1-2
Dickinson	12-38	10-15	1.45-1.55	2.0-6.0	0.12-0.15	5.1-6.5	Low----------	0.20			
	38-48	4-10	1.55-1.65	6.0-20	0.08-0.10	5.1-6.5	Low----------	0.20			
	48-60	4-10	1.60-1.70	6.0-20	0.02-0.04	5.6-6.5	Low----------	0.15			
88B----------	0-17	3-10	1.20-1.40	2.0-6.0	0.09-0.12	5.1-7.3	Low----------	0.17	5	2	1-2
Sparta	17-30	1-8	1.40-1.60	6.0-20	0.05-0.11	5.1-6.5	Low----------	0.17			
	30-60	0-5	1.50-1.70	6.0-20	0.04-0.07	5.1-6.0	Low----------	0.17			
107----------	0-10	27-35	1.20-1.40	0.6-2.0	0.21-0.23	6.1-7.8	Moderate-----	0.28	5	7	4-5
Sawmill	10-29	27-35	1.20-1.40	0.6-2.0	0.21-0.23	6.1-7.8	Moderate-----	0.28			
	29-52	25-35	1.30-1.45	0.6-2.0	0.17-0.20	6.1-7.8	Moderate-----	0.28			
	52-60	18-35	1.35-1.50	0.6-2.0	0.15-0.19	6.1-8.4	Moderate-----	0.28			
131B, 131C2, 131D----------	0-11	10-15	1.45-1.65	2.0-6.0	0.14-0.20	4.5-7.3	Low----------	0.24	5	3	.5-1
Alvin	11-53	15-18	1.45-1.65	0.6-2.0	0.12-0.20	4.5-6.0	Low----------	0.24			
	53-60	3-10	1.55-1.75	2.0-6.0	0.05-0.13	5.1-7.8	Low----------	0.24			
172----------	0-13	8-18	1.35-1.70	2.0-6.0	0.12-0.15	5.1-6.5	Low----------	0.20	4	3	2-3
Hoopeston	13-36	12-18	1.45-1.75	2.0-6.0	0.12-0.17	5.1-7.8	Low----------	0.28			
	36-60	2-10	1.50-1.80	6.0-20	0.05-0.10	4.5-8.4	Low----------	0.17			
188A----------	0-9	15-27	1.20-1.40	0.6-2.0	0.17-0.24	5.6-7.3	Low----------	0.32	5	5	2-4
Beardstown	9-14	15-27	1.25-1.40	0.6-2.0	0.17-0.22	5.1-6.0	Low----------	0.32			
	14-41	18-30	1.40-1.60	0.2-2.0	0.15-0.19	4.5-6.0	Low----------	0.32			
	41-60	5-15	1.40-1.65	2.0-6.0	0.08-0.17	5.1-7.3	Low----------	0.17			
200----------	0-9	10-20	1.25-1.45	0.6-2.0	0.20-0.24	4.5-7.8	Low----------	0.28	5	5	1-2
Orio	9-22	6-20	1.30-1.50	0.6-2.0	0.09-0.18	4.5-7.8	Low----------	0.28			
	22-45	18-30	1.40-1.60	0.2-0.6	0.12-0.19	4.5-7.8	Moderate-----	0.28			
	45-60	10-22	1.50-1.70	0.6-2.0	0.09-0.17	4.5-7.8	Low----------	0.28			

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
201----------	0-18	10-20	1.50-1.70	2.0-6.0	0.13-0.15	5.6-7.3	Low----------	0.20	4	3	2-4
Gilford	18-31	8-17	1.60-1.80	2.0-6.0	0.12-0.14	5.6-7.3	Low----------	0.20			
	31-60	3-12	1.70-1.90	6.0-20	0.05-0.08	6.1-7.3	Low----------	0.15			
206----------	0-19	20-27	1.15-1.35	0.2-0.6	0.22-0.24	5.1-7.8	Low----------	0.37	4	6	4-6
Thorp	19-50	27-35	1.35-1.55	0.06-0.2	0.18-0.20	5.1-7.3	Moderate-----	0.37			
	50-60	20-30	1.40-1.60	0.06-0.2	0.15-0.22	5.6-7.8	Moderate-----	0.37			
244----------	0-17	27-33	1.15-1.35	0.6-2.0	0.21-0.24	6.1-7.8	Moderate-----	0.28	5	4	3-5
Hartsburg	17-34	27-35	1.20-1.50	0.6-2.0	0.18-0.20	6.6-8.4	Moderate-----	0.28			
	34-60	20-27	1.30-1.55	0.6-2.0	0.20-0.22	7.4-8.4	Low----------	0.28			
279A, 279B-------	0-10	15-27	1.20-1.40	0.6-2.0	0.22-0.24	5.1-7.3	Low----------	0.37	5	6	1-3
Rozetta	10-15	12-27	1.20-1.40	0.6-2.0	0.22-0.24	4.5-7.3	Low----------	0.37			
	15-33	27-35	1.35-1.55	0.6-2.0	0.18-0.22	4.5-6.0	Moderate-----	0.37			
	33-60	20-27	1.40-1.60	0.6-2.0	0.20-0.22	5.6-7.8	Low----------	0.37			
280B, 280C2,											
280D2, 280E-----	0-12	15-25	1.30-1.35	0.6-2.0	0.20-0.22	5.1-7.3	Low----------	0.37	5	6	1-2
Fayette	12-56	25-35	1.30-1.45	0.6-2.0	0.18-0.20	4.5-6.0	Moderate-----	0.37			
	56-60	22-26	1.45-1.50	0.6-2.0	0.18-0.20	5.1-7.8	Moderate-----	0.37			
284----------	0-19	27-35	1.25-1.45	0.6-2.0	0.21-0.24	6.1-7.8	Moderate-----	0.32	5	7	2-3
Tice	19-53	22-35	1.30-1.50	0.6-2.0	0.18-0.20	5.6-7.8	Moderate-----	0.32			
	53-60	15-30	1.40-1.60	0.6-2.0	0.11-0.18	5.6-7.8	Moderate-----	0.32			
302----------	0-17	27-35	1.40-1.60	0.6-2.0	0.17-0.23	5.6-7.3	Moderate-----	0.28	5	6	2-3
Ambraw	17-30	30-40	1.45-1.65	0.2-0.6	0.09-0.11	5.1-7.3	Moderate-----	0.28			
	30-35	24-35	1.45-1.65	0.2-2.0	0.15-0.19	5.1-7.3	Moderate-----	0.28			
	35-60	18-30	1.50-1.70	0.2-2.0	0.11-0.22	6.1-8.4	Low----------	0.28			
304A----------	0-14	7-20	1.40-1.60	2.0-6.0	0.13-0.20	6.1-8.4	Low----------	0.20	5	3	1-2
Landes	14-32	5-18	1.45-1.70	2.0-6.0	0.10-0.15	6.1-8.4	Low----------	0.32			
	32-60	5-18	1.60-1.80	6.0-20	0.05-0.15	6.1-8.4	Low----------	0.20			
430B, 430C-------	0-16	18-24	1.20-1.40	0.6-2.0	0.22-0.24	5.6-7.3	Low----------	0.32	5	6	2-4
Raddle	16-60	18-24	1.20-1.40	0.6-2.0	0.20-0.22	5.6-7.3	Low----------	0.43			
451----------	0-9	10-20	1.20-1.55	0.6-2.0	0.22-0.24	6.1-7.8	Low----------	0.28	5	5	3-5
Lawson	9-27	10-20	1.20-1.55	0.6-2.0	0.20-0.22	6.1-7.8	Low----------	0.28			
	27-60	18-30	1.55-1.65	0.6-2.0	0.18-0.20	6.1-7.8	Moderate-----	0.43			
567C2----------	0-11	20-27	1.15-1.35	0.6-2.0	0.22-0.24	5.6-7.8	Low----------	0.32	5	6	2-4
Elkhart	11-34	25-35	1.25-1.45	0.6-2.0	0.18-0.20	5.6-8.4	Moderate-----	0.43			
	34-60	20-27	1.35-1.55	0.6-2.0	0.20-0.22	7.4-8.4	Low----------	0.43			
682----------	0-15	18-27	1.20-1.45	0.6-2.0	0.17-0.22	6.1-7.8	Low----------	0.32	5	6	3-6
Medway	15-38	18-32	1.20-1.50	0.6-2.0	0.14-0.18	6.1-8.4	Low----------	0.32			
	38-60	5-30	1.20-1.60	0.6-6.0	0.11-0.15	6.1-8.4	Low----------	0.32			
776----------	0-7	28-35	1.20-1.40	0.6-2.0	0.18-0.22	6.6-7.8	Moderate-----	0.28	5	6	6-10
Comfrey	7-30	18-35	1.20-1.40	0.6-2.0	0.16-0.20	6.6-7.8	Moderate-----	0.28			
	30-60	18-35	1.30-1.50	0.6-2.0	0.15-0.19	6.6-8.4	Moderate-----	0.28			
943E, 943G:											
Seaton----------	0-6	10-22	1.10-1.45	0.6-2.0	0.22-0.24	5.6-7.3	Low----------	0.37	5	6	1-3
	6-60	18-27	1.20-1.60	0.6-2.0	0.20-0.22	5.1-7.3	Low----------	0.37			
Timula----------	0-21	10-18	1.30-1.60	0.6-2.0	0.20-0.24	6.1-7.8	Low----------	0.37	5	5	1-2
	21-60	10-18	1.40-1.60	0.6-2.0	0.18-0.20	7.4-8.4	Low----------	0.37			

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk	Permeability	Available water	Soil reaction	Shrink-swell potential	Erosion factors	Wind erodibility	Organic matter

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
7078----------	0-36	10-18	1.20-1.55	0.6-2.0	0.20-0.24	5.6-7.8	Low----------	0.37	5	5	1-3
Arenzville	36-60	10-30	1.25-1.45	0.6-2.0	0.18-0.22	5.6-7.8	Moderate-----	0.37			
7107----------	0-21	27-35	1.20-1.40	0.6-2.0	0.21-0.23	6.1-7.8	Moderate-----	0.28	5	7	4-5
Sawmill	21-34	27-35	1.20-1.40	0.6-2.0	0.21-0.23	6.1-7.8	Moderate-----	0.28			
	34-57	25-35	1.30-1.45	0.6-2.0	0.17-0.20	6.1-7.8	Moderate-----	0.28			
	57-60	18-35	1.35-1.50	0.6-2.0	0.15-0.19	6.1-8.4	Moderate-----	0.28			
7284----------	0-17	27-35	1.25-1.45	0.6-2.0	0.21-0.24	6.1-7.8	Moderate-----	0.32	5	7	2-3
Tice	17-31	22-35	1.30-1.50	0.6-2.0	0.18-0.21	5.6-7.8	Moderate-----	0.32			

TABLE 16.--SOIL AND WATER FEATURES

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydrologic group	Flooding			High water table			Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months		Uncoated steel	Concrete
					Ft					
8E, 8G---------- Hickory	C	None--------	---	---	>6.0	---	---	Moderate	Moderate	Moderate.
17A---------- Keomah	C	None--------	---	---	2.0-4.0	Apparent	Mar-Jun	High-----	High-----	Moderate.
19C3, 19D2, 19D3, 19E---------- Sylvan	B	None--------	---	---	>6.0	---	---	High-----	Moderate	Moderate.
30F, 30G---------- Hamburg	B	None--------	---	---	>6.0	---	---	High-----	Low------	Low.
34D---------- Tallula	B	None--------	---	---	>6.0	---	---	High-----	Low------	Low.
35D2, 35E2-------- Bold	B	None--------	---	---	>6.0	---	---	High-----	Low------	Low.
36A---------- Tama	B	None--------	---	---	4.0-6.0	Apparent	Mar-Jun	High-----	Moderate	Moderate.
36B, 36C2--------- Tama	B	None--------	---	---	>6.0	---	---	High-----	Moderate	Moderate.
37---------- Worthen	B	None--------	---	---	>6.0	---	---	High-----	Low------	Low.
43A, 43B---------- Ipava	B	None--------	---	---	1.0-3.0	Apparent	Mar-Jun	High-----	High-----	Moderate.
49---------- Watseka	B	None--------	---	---	1.0-3.0	Apparent	Mar-May	Moderate	Low------	High.
53B, 53D---------- Bloomfield	A	None--------	---	---	>6.0	---	---	Low------	Low------	High.
54B, 54D, 54E----- Plainfield	A	None--------	---	---	>6.0	---	---	Low------	Low------	High.
68---------- Sable	B/D	None--------	---	---	+.5-2.0	Apparent	Mar-Jun	High-----	High-----	Low.
70---------- Beaucoup	B/D	Frequent----	Long------	Mar-Jun	+.5-2.0	Apparent	Mar-Jun	High-----	High-----	Low.
71---------- Darwin	D	Rare--------	---	---	+1-2.0	Apparent	Jan-Jun	Moderate	High-----	Low.
74---------- Radford	B	Frequent----	Brief-----	Mar-Jun	1.0-3.0	Apparent	Mar-Jun	High-----	High-----	Low.
78---------- Arenzville	B	Frequent----	Brief-----	Mar-Jun	3.0-6.0	Apparent	Mar-Jun	High-----	Moderate	Moderate.
81---------- Littleton	B	Rare--------	---	---	1.0-3.0	Apparent	Apr-Jun	High-----	High-----	Low.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months		Uncoated steel	Concrete
					Ft					
87E---------- Dickinson	B	None--------	---	---	>6.0	---	---	Moderate	Low------	Moderate.
88B---------- Sparta	A	None--------	---	---	>6.0	---	---	Low------	Low------	Moderate.
107---------- Sawmill	B/D	Frequent----	Long------	Mar-Jun	0-2.0	Apparent	Mar-Jun	High-----	High-----	Low.
131B, 131C2, 131D- Alvin	B	None--------	---	---	>6.0	---	---	Moderate	Low------	High.
172---------- Hoopeston	B	None--------	---	---	1.0-3.0	Apparent	Mar-Jun	High-----	Low------	Moderate.
188A---------- Beardstown	C	None--------	---	---	1.0-3.0	Apparent	Mar-Jun	High-----	High-----	High.
200---------- Orio	B/D	None--------	---	---	+.5-1.0	Apparent	Mar-Jun	High-----	High-----	Moderate.
201---------- Gilford	B/D	None--------	---	---	+.5-1.0	Apparent	Mar-May	High-----	High-----	Moderate.
206---------- Thorp	C/D	None--------	---	---	+.5-2.0	Apparent	Mar-Jun	High-----	High-----	Moderate.
244---------- Hartsburg	B/D	None--------	---	---	+.5-2.0	Apparent	Mar-Jun	High-----	High-----	Low.
279A, 279B-------- Rozetta	B	None--------	---	---	4.0-6.0	Apparent	Mar-Jun	High-----	Moderate	Moderate.
280B, 280C2, 280D2, 280E------ Fayette	B	None--------	---	---	>6.0	---	---	High-----	Moderate	Moderate.
284---------- Tice	B	Frequent----	Long------	Mar-Jun	1.5-3.0	Apparent	Mar-Jun	High-----	High-----	Low.
302---------- Ambraw	B/D	Frequent----	Long------	Mar-Jun	0-2.0	Apparent	Mar-Jun	High-----	High-----	Moderate.
304A---------- Landes	B	Frequent----	Brief-----	Mar-May	>6.0	---	---	Moderate	Low------	Low.
430B, 430C-------- Raddle	B	None--------	---	---	>6.0	---	---	High-----	Moderate	Moderate.
451---------- Lawson	C	Frequent----	Brief-----	Mar-Jun	1.0-3.0	Apparent	Mar-May	High-----	Moderate	Low.
567C2---------- Elkhart	B	None--------	---	---	>6.0	---	---	High-----	Moderate	Moderate.
682---------- Medway	B	Frequent----	Long------	Mar-Jun	1.5-3.0	Apparent	Mar-Apr	High-----	High-----	Low.
776---------- Comfrey	B/D	Frequent----	Long------	Mar-Jun	0-3.0	Apparent	Apr-Jul	High-----	High-----	Low.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months		Uncoated steel	Concrete
					Ft					
943E, 943G:										
Seaton	B	None	---	---	>6.0	---	---	High	Low	Moderate.
Timula	B	None	---	---	>6.0	---	---	High	Low	Low.
962C3, 962D3, 962E2:										
Sylvan	B	None	---	---	>6.0	---	---	High	Moderate	Moderate.
Bold	B	None	---	---	>6.0	---	---	High	Low	Low.
962E3:										
Bold	B	None	---	---	>6.0	---	---	High	Low	Low.
Sylvan	B	None	---	---	>6.0	---	---	High	Moderate	Moderate.
965D2, 965E:										
Tallula	B	None	---	---	>6.0	---	---	High	Low	Low.
Bold	B	None	---	---	>6.0	---	---	High	Low	Low.
3070 Beaucoup	B/D	Frequent	Long	Mar-Jun	+.5-2.0	Apparent	Mar-Jun	High	High	Low.
3073A Ross	B	Frequent	Brief	Mar-Jun	4.0-6.0	Apparent	Mar-Apr	Moderate	Low	Low.
3115 Dockery	C	Frequent	Long	Mar-Jun	2.0-3.0	Apparent	Mar-Apr	High	Moderate	Low.
4776 Comfrey	D	Frequent	Long	Mar-Jun	+2-1.0	Apparent	Jan-Dec	High	High	Low.
7070	B/D	Rare	---	---	+.5-2.0	Apparent	Mar-Jun	High	High	Low.

[redacted]

(Dashes indicate that data were not available. MAX means maximum dry density; OPT, optimum moisture; LL, liquid limit; PI, plasticity index; UN, Unified; and NP, nonplastic)

Soil name and location	Sample number 81-IL-017-	Horizon designator	Depth	Moisture density		Percentage passing sieve--				LL	PI	Classification	
				MAX	OPT	No. 4	No. 10	No. 40	No. 200			AASHTO	UN
			In	Lb/ft^3	Pct					Pct			
Arenzville silt loam: 930 feet north, 120 feet east of center, sec. 27, T. 18 N., R. 11 W.	7-1	Ap	0-6	107	12	100	100	100	98	29	5	A-4(5)	ML
	7-3	C2	14-36	109	17	100	100	100	99	28	5	A-4(5)	ML
	7-4	Ab1	36-45	105	19	100	100	100	99	34	11	A-6(11)	CL
	7-6	Ab3	56-60	100	22	100	100	100	99	46	21	A-7-6 (24)	CL
Beaucoup silty clay loam: 890 feet north, 1,170 feet east of southwest corner, sec. 32, T. 17 N., R. 12 W.	62-1	Ap	0-10	103	19	100	100	99	90	37	14	A-6(13)	CL
	62-2	A	10-18	107	18	100	100	100	93	42	21	A-7-6 (21)	CL
	62-5	Bg2	32-41	108	18	100	100	98	94	43	22	A-7-6 (22)	CL
	62-7	Cg	50-60	122	12	100	100	99	43	21	6	A-4	CL-ML
Bloomfield fine sand: 2,510 feet south, 610 feet west of northeast corner, sec. 33, T. 18 N., R. 11 W.	63-1	Ap	0-9	113	11	100	100	98	14	---	NP	A-2-4 (0)	SM
	63-2	E	9-36	114	12	100	100	99	18	---	NP	A-2-4 (0)	SM
	63-3	E&Bt (E part)	36-60	116	10	100	100	99	20	---	NP	A-2-4 (0)	SM
	63-4	E&Bt (Bt part)	36-60	124	11	100	100	98	27	---	NP	A-2-4 (0)	SM
Bold silt loam: 2,800 feet south, 675 feet west of northeast corner, sec. 3, T. 17 N., R. 9 W.	30-1	Ap	0-9	103	19	100	100	100	99	36	13	A-6(14)	CL
	30-4	C3	30-60	107	16	100	100	100	99	26	1	A-4(0)	ML
Sparta sand: 1,710 feet north, 2,330 feet west of southeast corner, sec. 35, T. 18 N., R. 21 W.	6-1	Ap	0-8	113	11	100	100	90	12	---	NP	A-2-4 (0)	SM
	6-4	Bw1	21-30	115	10	100	100	94	16	---	NP	A-2-4 (0)	SM-SW
	6-5	Bw2	30-40	113	12	100	100	94	12	---	NP	A-2-4 (0)	SM
	6-6	C	40-60	108	14	100	100	96	7	---	NP	A-3	SM-SW
Tallula silt loam: 1,330 feet south, 155 feet east of northwest corner, sec. 4, T. 17 N., R. 10 W.	23-4	Bw	16-26	105	20	100	100	99	98	38	13	A-6(15)	CL
	23-6	C2	31-60	108	17	100	99	99	98	28	4	A-4(04)	ML
Watseka sand: 260 feet south, 205 feet east of center, sec. 4, T. 17 N., R. 12 W.	48-1	Ap	0-7	113	10	100	100	93	11	---	NP	A-2-4 (0)	SM-SW
	48-4	Bw	22-28	115	11	100	100	95	16	---	NP	A-2-4 (0)	SM
	48-6	C	36-60	110	12	100	100	93	9	---	NP	A-3(0)	SM-SW

TABLE 18.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Alvin	Coarse-loamy, mixed, mesic Typic Hapludalfs
Ambraw	Fine-loamy, mixed, mesic Fluvaquentic Haplaquolls
Arenzville	Coarse-silty, mixed, nonacid, mesic Typic Udifluvents
Beardstown	Fine-loamy, mixed, mesic Udollic Ochraqualfs
Beaucoup	Fine-silty, mixed, mesic Fluvaquentic Haplaquolls
*Bloomfield	Sandy, mixed, mesic Psammentic Hapludalfs
Bold	Coarse-silty, mixed (calcareous), mesic Typic Udorthents
Comfrey	Fine-loamy, mixed, mesic Cumulic Haplaquolls
Darwin	Fine, montmorillonitic, mesic Vertic Haplaquolls
Dickinson	Coarse-loamy, mixed, mesic Typic Hapludolls
Dockery	Fine-silty, mixed, nonacid, mesic Aquic Udifluvents
Elkhart	Fine-silty, mixed, mesic Typic Argiudolls
Fayette	Fine-silty, mixed, mesic Typic Hapludalfs
Gilford	Coarse-loamy, mixed, mesic Typic Haplaquolls
Hamburg	Coarse-silty, mixed (calcareous), mesic Typic Udorthents
Hartsburg	Fine-silty, mixed, mesic Typic Haplaquolls
Hickory	Fine-loamy, mixed, mesic Typic Hapludalfs
Hoopeston	Coarse-loamy, mixed, mesic Aquic Hapludolls
Ipava	Fine, montmorillonitic, mesic Aquic Argiudolls
Keomah	Fine, montmorillonitic, mesic Aeric Ochraqualfs
Landes	Coarse-loamy, mixed, mesic Fluventic Hapludolls
Lawson	Fine-silty, mixed, mesic Cumulic Hapludolls
Littleton	Fine-silty, mixed, mesic Cumulic Hapludolls
Medway	Fine-loamy, mixed, mesic Fluvaquentic Hapludolls
Orio	Fine-loamy, mixed, mesic Mollic Ochraqualfs
Plainfield	Mixed, mesic Typic Udipsamments
Raddle	Fine-silty, mixed, mesic Typic Hapludolls
Radford	Fine-silty, mixed, mesic Fluvaquentic Hapludolls
[illegible]	[illegible]
Rozetta	Fine-silty, mixed, mesic Typic Hapludalfs
Sable	Fine-silty, mixed, mesic Typic Haplaquolls
Sawmill	Fine-silty, mixed, mesic Cumulic Haplaquolls
Seaton	Fine-silty, mixed, mesic Typic Hapludalfs

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