United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Illinois Agricultural Experiment Station

Soil Survey of Menard County, Illinois

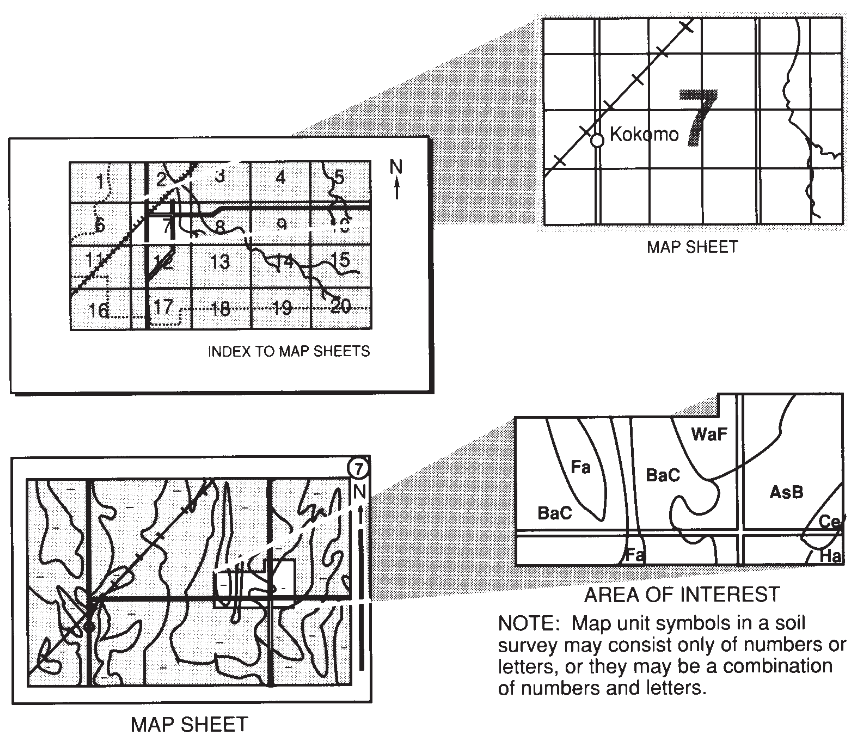
How To Use This Soil Survey

This publication consists of a manuscript and a set of soil maps. The information provided can be useful in planning the use and management of small areas.

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

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

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



National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the Menard County Soil and Water Conservation District. Additional funding was provided by the Illinois Department of Agriculture and the Menard County Board.

Major fieldwork for this soil survey was completed in 2004. Soil names and descriptions were approved in 2005. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2005. The most current official data are available on the Internet.

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.

Nondiscrimination Statement

Cover Photo Caption

A steep, wooded area of Sylvan and Bold soils leading down to the flood plain along the Sangamon River.

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

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Issued 2008

Numerical Index to Map Units

Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys 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 surveys 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 surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. 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. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

William J. Gradle
State Conservationist
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Soil Survey of Menard County, Illinois

By William M. Teater, Natural Resources Conservation Service

Original fieldwork for the 1953 soil survey by J.B. Fehrenbacher and R.T. Odell, University of Illinois Agricultural Experiment Station

Updated fieldwork by John W. Ford, Rick T. Francen, James K. Hornickel, Steven E. Suhl, William M. Teater, and Robert A. Tegeler, Natural Resources Conservation Service

Geographic information assistance provided by Dale Baumgartner, Resource Analyst (GIS), Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Illinois Agricultural Experiment Station

MENARD COUNTY is in west-central Illinois (fig. 1). It has an area of 202,030 acres, or about 316 square miles. It is bounded on the north by the Sangamon River and Mason County, on the south by Sangamon County, on the west by Cass County, and on the east by Logan County. In 2000, the population of the county was 12,486. Petersburg, the county seat, had a population of 2,266 (U.S. Department of Commerce, 2000b).

This soil survey updates the survey of Menard County published in 1953 (Fehrenbacher and Odell, 1953). It provides more information and orthophotographic maps at a slightly larger scale, in both electronic and digital format.

General Nature of the County

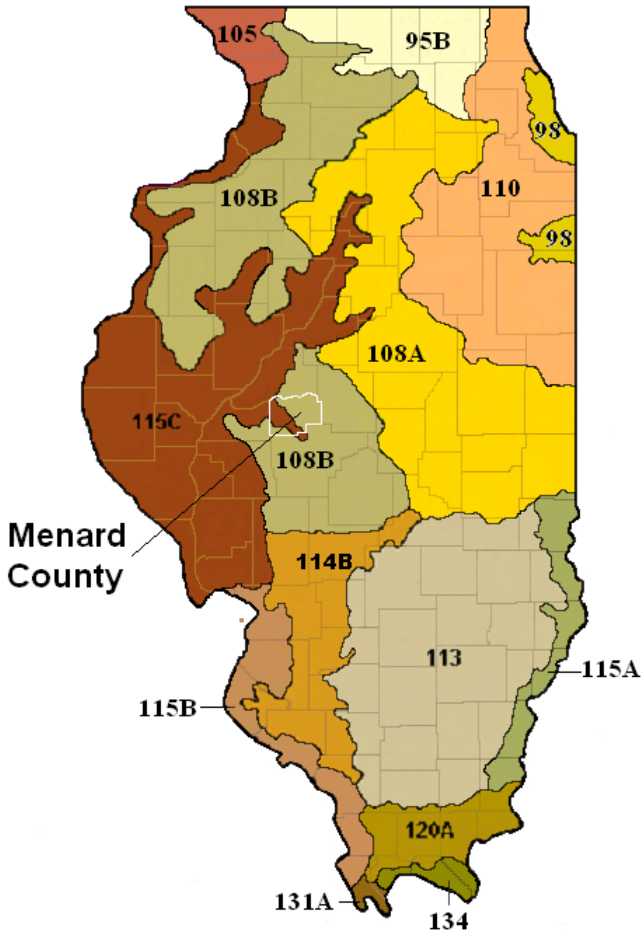
This section provides general information about Menard County. It describes history and development; physiography, relief, and drainage; farming and agriculture; transportation facilities and industry; and climate.

History and Development

Eric Golden, Menard County, helped prepare this section.

The earliest human occupation in the survey area probably occurred during a time ranging from the Dalton period 10,000 years ago to the Mississippian period, around 1350 A.D. Burial mounds from the Woodland period can be found at the higher elevations, and evidence of seasonal hunting, fishing, and villages is common along the Sangamon River drainage area. The site known as “Kingfisher Hill” appears to be one of only two Hopewell sites in the entire Sangamon River system.

The lack of archeological evidence from 1350 to 1750 suggests that the area was uninhabited or seldom used for seasonal hunting. From 1750 through the early 1800s, the Potawatomi and Kickapoo tribes used the Sangamon River for the seasonal



LEGEND

95B—Southern Wisconsin and Northern Illinois Drift Plain
98—Southern Michigan and Northern Indiana Drift Plain
105—Northern Mississippi Valley Loess Hills
108A and 108B—Illinois and Iowa Deep Loess and Drift
110—Northern Illinois and Indiana Heavy Till Plain
113—Central Claypan Areas
114B—Southern Illinois and Indiana Thin Loess and Till Plain, Western Part
115A, 115B, and 115C—Central Mississippi Valley Wooded Slopes
120A—Kentucky and Indiana Sandstone and Shale Hills and Valleys, Southern Part
131A—Southern Mississippi River Alluvium
134—Southern Mississippi Valley Loess

Figure 1.—The location of Menard County and the major land resource areas (MLRAs) in Illinois.

collection of pecans and persimmons and for duck hunting. By the time of the earliest European settlement in 1819, only a handful of Indians remained near the forestland along Indian Creek (Baskin, 1879).

Illinois was established as a State in 1818, and the area now known as Menard County was part of Sangamon County. The first settlers poured into this area in 1819 from the south through the Cumberland Gap and from Kentucky, Tennessee, and Virginia (Masters, 1988). A mill was soon constructed across the Sangamon River to grind corn for the settlers. People settled near the mill, and the town of Salem was quickly platted in 1820.

In 1831, a young Abraham Lincoln was piloting a flatboat to New Orleans when it became entangled with the mill dam at Salem. After securing the boat's release and delivering his goods, Lincoln decided to settle in the town of Salem. During his well-chronicled stay, he held many jobs, including store clerk, postmaster, and surveyor. He also developed an appetite for the law and politics. In 1832, Lincoln surveyed and replatted the town of Petersburg, which eventually became the county seat.

In 1839, Menard County officially split from Sangamon County. It was named after Pierre Menard, the first Lieutenant Governor of Illinois. Within the next 50 years, the towns of Athens, Atterberry, Greenview, Oakford, and Tallula were established; by 1900, the population of the county had swelled to 14,336 (Forstall, 1995).

Physiography, Relief, and Drainage

Menard County is on the Springfield Plain of the Central Lowland Province (Willman and others, 1975). Elevation ranges from more than 645 feet above sea level at a point about 3 miles southwest of Tallula in the southwest corner of the county to less than 460 feet above sea level on the flood plain along the Sangamon River in the northwest corner of the county (fig. 2). The physiography of the county consists of uplands, dunes, stream terraces, and flood plains.

The majority of the county consists of uplands underlain by glacial till deposits from the Illinois Episode. The till is covered by loess, which is more than 25 feet thick in some areas (Fehrenbacher and others, 1986). The till crops out in many areas in the southern part of the county. In other areas the loess is underlain by eolian sand. Areas of sand dunes are in the uplands adjacent to the Sangamon River flood plain and in areas adjacent to the stream terrace along Salt Creek.

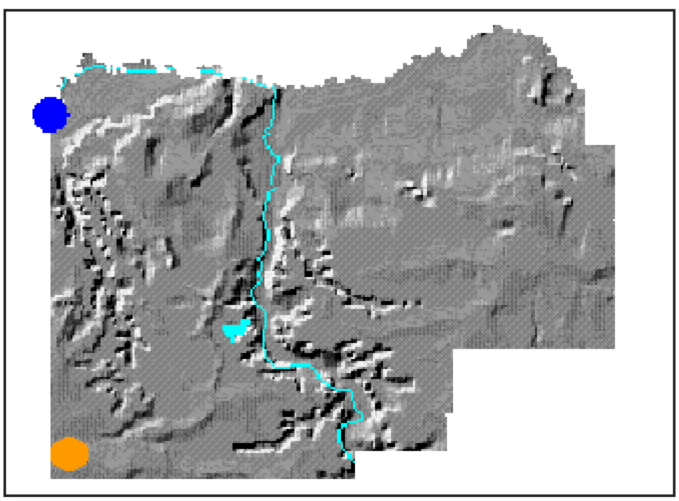


Figure 2.—A generalized relief map of Menard County showing the highest and lowest points in the county. The blue dot represents the lowest elevation, 460 feet above mean sea level, along the Sangamon River. The orange dot represents the highest elevation, 645 feet above mean sea level, about 3 miles southwest of Tallula. (Source: Illinois State Geological Survey, http://www.isgs.uiuc.edu/hi_low/hilow_intro.html)

The major stream terrace in the county is adjacent to Salt Creek. Sand and gravel were deposited by glacial meltwater of the Wisconsin Episode. In some areas silty or loamy materials overlie the sand and gravel deposits. Dunes consisting of water-deposited sands that were reworked by wind also are on the stream terrace.

The flood plains along the Sangamon River and Salt Creek consist of alluvium, which is poorly graded sand, silt, and clay. Soils on the flood plain east of the confluence of the Sangamon River and Salt Creek are underlain by sandy material at a depth of less than 80 inches.

Menard County has 11 major watersheds. The eastern part of the county is drained by Cabiness, Grove, and Pike Creeks, which flow into Salt Creek. The western part of the county is drained by Clary, Concord, Indian, Latimore, Little Grove, Rock, and Tar Creeks, which flow into the Sangamon River.

Farming and Agriculture

Rhonda Holliday, District Conservationist, Natural Resources Conservation Service, helped prepare this section.

Farming continues to be an important enterprise in Menard County. An estimated 329 farms make up about 77 percent (155,024 acres) of the total acreage in the county (USDA, 2002). Corn and soybeans are the major crops; they make up approximately 90 percent of the crops planted annually. Secondary farm products include wheat, hay, cattle, hogs, and timber. The most productive soils in the survey area are in the southeast corner of the county and on the flood plain along the Sangamon River.

The number of farms in the county has gradually decreased since the early 1930s. Today, the average farm is 471 acres (USDA, 2002). A large number of farms in the county rely on income that is generated from jobs away from the farm. Many of the farmers and their spouses are employed outside of the agricultural industry.

Transportation Facilities and Industry

Rhonda Holliday, District Conservationist, Natural Resources Conservation Service, helped prepare this section.

In recent years, Menard County has experienced a large population surge. Most of the urban buildup is a result of families moving from Sangamon County, which is south of Menard County. These families are buying small tracts of land and building new homes.

Three main highways run through the county. Route 97 runs north and south along the west side of the county, Route 29 runs north and south along the east side of the county, and Route 123 runs east and west through the center of the county. Routes 97 and 123 intersect in Petersburg. With a high percentage of the county's inhabitants commuting to work, these highways are heavily used. Menard County also has one railroad that serves commercial and agricultural businesses. Passenger service is not available. The nearest passenger railroad system is in Springfield, Illinois. Menard County has no commercial air services available; however, the Abraham Lincoln Capital Airport is within a 25-minute drive from Petersburg.

The cities of Petersburg and Athens are served by a city water system that originates from aquifer wells in the Sangamon River Valley. Rural homes and businesses have private wells.

The majority of the county's residents are private wage and salary workers. The highest percentage of employment is provided by the State capital, Springfield, located in Sangamon County. The largest employers in the county are those that provide educational, health, and social services and retail services (U.S. Department of Commerce, 2000a).

Climate

Menard County has a continental climate of relatively cold winters and warm, humid summers. Although precipitation is heaviest during the warmer half of the year, winter snow cover and frost usually provide adequate moisture to the soils in spring.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Lincoln in the period from 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 28 degrees F and the average daily minimum temperature is 19.3 degrees. The lowest temperature on record, which occurred at Lincoln on December 26, 1914, is -29 degrees. In summer, the average temperature is 73.7 degrees and the average daily maximum temperature is 84.6 degrees. The highest recorded temperature, which occurred at Lincoln on July 15, 1936, is 113 degrees.

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

The total annual precipitation is 38.21 inches. Of this total, 23.37 inches, or 61 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 11.8 inches. The heaviest 1-day rainfall on record was 5.22 inches at Lincoln on May 12, 1914.

The average seasonal snowfall is 20.5 inches. The greatest recorded 1-day snowfall was 13 inches at Lincoln on February 23, 1914. On the average, 24 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

How This Survey Was Made

This survey was made to provide updated information about the soils and miscellaneous areas in the survey area, which is in Major Land Resource Areas 108B and 115C. Major land resource areas (MLRAs) are geographically associated land resource units that share a common land use, elevation, topography, climate, water, soils, and vegetation (USDA/NRCS, 2006). Menard County is a subset of MLRAs 108B and 115C (fig. 1). Map unit design is based on the occurrence of each soil throughout the MLRA. In some cases a soil may be referred to that does not occur in Menard County but that has been mapped within the MLRA.

The information in this updated survey includes a description of the soils and miscellaneous areas and their location and a discussion of their properties and the subsequent effects on suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They prepared new soil profile descriptions and studied many existing soil profile descriptions. The soil profile includes the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

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

Soil scientists recorded the characteristics of the soil profiles that they observed. The maximum depth of observation was about 80 inches (6.7 feet). Soil scientists noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, soil reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management.

Interpretations are modified as necessary to fit local conditions, and some new interpretations are developed to meet local needs. Interpretations and tables for this soil survey were generated using the National Soil Survey Information System (NASIS) version 5.2. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

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

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

Aerial photographs used in this update survey were taken in 1998. Soil scientists also studied U.S.Geological Survey topographic maps (enlarged to a scale of 1:12,000) and orthophotographs to relate land and image features. Specific soil boundaries from the original field sheets of the soil maps published in 1953 were drawn on the orthophotographs. Adjustments of soil boundary lines were made to coincide with the U.S. Geological Survey topographic map contour lines and tonal patterns on aerial photographs.

The descriptions, names, and delineations of the soils in this survey area may not fully agree with those of the soils in adjacent survey areas. Differences are the result of an improved knowledge of soils, modifications in series concepts, or variations in the extent of the soils in the survey areas.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the general processes of soil formation and the soil-landscape units in the survey area. It also describes the system of soil classification.

Formation of the Soils

Steve Suhl, Resource Soil Scientist, Natural Resources Conservation Service, helped prepare this section.

A soil is a three-dimensional natural body consisting of mineral and organic material that can support plant growth. The nature of any soil at a given site is the result of the interaction of the factors of soil formation and their influence on the processes of soil formation.

Factors of Soil Formation

There are five major factors of soil formation—parent material, climate, plants and animals, topography, and time. Climate and plants and animals act directly on parent material, which is modified by topography over time. Theoretically, if all of these factors were identical at different sites, the soils at these sites would be identical. Differences among the soils are caused by variations in one or more of these factors.

Parent Material

Parent material is the unconsolidated geologic material in which the soil forms. It determines the basis for the chemical and mineralogical composition of the soil. The properties of the parent material vary greatly, sometimes within small areas, depending on how the material was deposited. The soils in Menard County formed in a variety of parent materials. The majority of the soils formed in loess. Other soils formed in drift, alluvium, eolian deposits, overburden from aggregate mining, or a combination of these. Figure 3 shows the relationship of parent material to some of the major soils in the county.

Drift is glacially deposited sediment. There are two main types of glacial drift—till and outwash. Till is material that was deposited directly by glacial ice with little or no water action. It typically has particles that occur in a variety of sizes, including sand, silt, clay, and some pebbles, cobbles, and larger rock fragments. The small pebbles in till generally have distinct edges and corners, indicating that they have not been subject to intense washing by water. Till is well graded and unstratified. In Menard County, till was deposited during the Illinois Episode. Hickory soils are examples of soils that formed primarily in till, commonly with a thin overlying layer of loess.

During the Yarmouth and Sangamon interglacial episodes, which occurred before the Illinois Episode and between the Illinois and Wisconsin Episodes, respectively, the relatively flat, stable till surface was exposed to intense weathering. Soils formed in the till surface and were subsequently buried by depositions of loess. The soils that formed in the till are called paleosols, and they reflect the conditions that existed when their formation occurred. In Menard County, the loess deposits were thick enough to

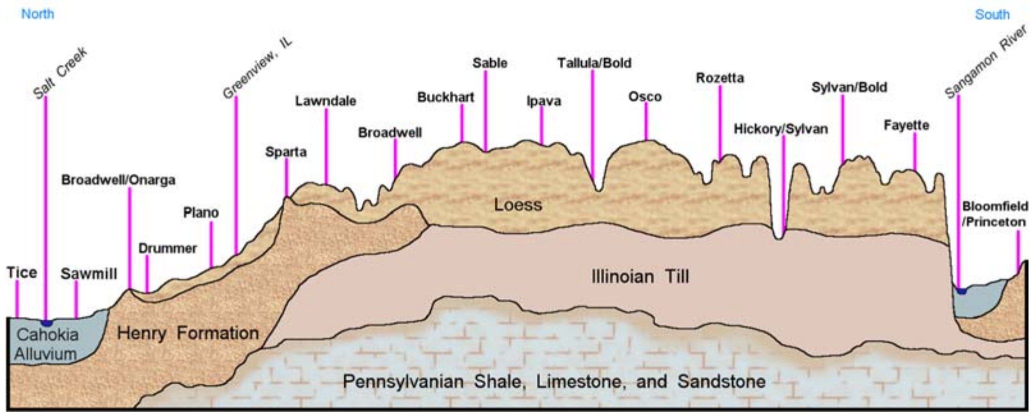


Figure 3.—Typical cross section showing the relationship of parent materials to the soils in Menard County.

remove the soils from the influence of active soil-forming processes. Paleosols that are no longer subject to the soil-forming processes that created them are called buried paleosols. In some landscape positions, however, where the loess deposits are thinner, the current processes of soil formation have extended through the loess and into the upper part of the paleosol. The result is a welded soil profile. Elco soils are examples of soils that formed in loess and the underlying paleosol.

Outwash includes all sediments deposited by running water from melting glaciers. The size of the particles that can be transported by water, either as bedload or suspended sediments, depends on the gradient, volume, and velocity of the moving water. Water velocity decreases when a stream loses grade or flows into a larger body of water. As the velocity decreases, suspended particles begin to settle out. The coarser materials, such as gravel and cobbles, are deposited nearer to the source; the finer materials, such as fine sands, silts, and clays, are carried farther downstream. The pebbles in outwash generally have rounded edges and corners, indicating that they have been subject to intense washing by water. Outwash is poorly graded, is stratified, and has variable composition because of variations in the flow of water. Outwash is generally permeable. The outwash in Menard County was deposited during the Wisconsin Episode. St. Charles soils are examples of soils that formed in loess and in the underlying outwash.

Alluvium is material deposited by running water. There are two major types—stream alluvium and valley-side alluvium. Stream alluvium is soil material deposited by floodwater along streams. The source of the alluvium generally is material eroded from other parent materials farther upstream in the watershed. Stream alluvium is poorly graded, stratified, and well sorted. The texture of the soil material varies, depending on the speed of the floodwater, the duration of the flooding, and the distance from the streambank. The more rapidly moving water within the stream channel slows quickly once outside the channel as the concentrated channel flow changes to broad overland flow. As the water velocity decreases, the coarser textured material is deposited first near the channel. The fine textured material is carried a greater distance from the channel. Arenzville soils are examples of soils that formed close to the stream channel, where the alluvium is coarser textured. Beaucoup and Tice soils formed in finer textured alluvium farther from the stream channel. Areas that remain flooded for extended periods of time with slowly moving water, such as backswamps, provide the environment for fine textured material to settle out. Zook soils are examples of soils that formed in these areas.

Valley-side alluvium is poorly graded and stratified, but it generally is not well sorted. The source of the alluvium generally is material eroded from parent material directly upslope. The soils that form in valley-side alluvium are similar in character to the upslope source. Worthen soils formed in valley-side alluvium.

Eolian deposits are sediments deposited by wind. The primary source of these sediments was valley trains. Valley trains consist of outwash deposited in valleys cut by glacial meltwater. During periods of low temperatures and precipitation rates, the meltwaters would recede and the barren outwash surface was exposed to intense wind erosion. The wind stripped the finer components from the outwash and transported and deposited them downwind along the adjacent valley sides and uplands. The coarser silt and sands were deposited near the source valleys, and the finer silts were carried longer distances and deposited over broad areas. In Menard County, eolian sediments were deposited during the Wisconsin Episode and are either loess or windblown sand. Loess is the major parent material in Menard County. It is composed almost entirely of silt. Fayette and Osco soils formed in loess.

Windblown sand is composed primarily of very fine sand and fine sand. It generally is in areas along the bluffs of the Sangamon River and Salt Creek. Princeton and Bloomfield soils formed in windblown sand. In some areas the sand is overlain by loess. Broadwell soils are examples of soils that formed in loess and in the underlying sand.

Overburden from the mining of limestone results when the overlying material is excavated to expose the limestone. The overburden consists of unconsolidated material, which includes the solum and substratum of the modern soil. The characteristics of the soil on mined land reflect the character of the overburden, the method of mining, and the degree of reclamation. For example, the parent material of the Lenzburg soils is a heterogeneous mixture of loess, till, and limestone. This mixture is the result of a mining process in which little or no segregation of materials occurs.

Climate

The climate in Menard County has significantly affected the soil-forming processes. The county currently has a humid, temperate climate. In this climatic environment, physical and chemical weathering of the parent material can occur along with the accumulation of organic matter, the decomposition of minerals, the formation and translocation of clay, the leaching of soluble compounds, and alternating periods of freezing and thawing.

The two climatic factors that have the greatest influence on soil-forming processes are precipitation and temperature. Precipitation supplies the moisture needed for most physical and chemical processes and determines the depth to which these processes occur. The soil moisture regime, which is only a partial function of precipitation, determines the processes that occur in the soil. The rate at which these physical and chemical processes proceed is dependent upon the temperature, particularly its relationship to the soil temperature regime.

Two soil moisture regimes occur in the county—aquic and udic. The aquic moisture regime is a reducing regime in a soil that is virtually free of dissolved oxygen because of saturation by water or by water of the capillary fringe. Biological activity is necessary to remove dissolved oxygen from ground water; therefore, the soil temperature must also be above biologic zero (5 degrees C) for some time while the soil is saturated. Zook soils have an aquic soil moisture regime. The udic moisture regime implies that the soil moisture control section is not dry in any part for as long as 90 cumulative days per year. Also required, except for short periods, is a three-phase system, solid-liquid-gas, in part or all of the soil moisture control section when the soil temperature is above biologic zero. Osco soils have a udic soil moisture regime.

The mesic soil temperature regime is the only temperature regime recognized in the county. This regime implies that the mean annual soil temperature is 8 degrees C or higher but is lower than 15 degrees C, and the difference between mean summer and mean winter soil temperatures is more than 5 degrees C at a depth of 20 inches.

Plants and Animals

The vegetation under which a soil forms influences several important soil properties, such as color, structure, reaction, and content and distribution of organic matter. Vegetation extracts water from the soil, recycles nutrients, and adds organic material to the soil. Gases derived from root respiration combine with water to form acids that influence the weathering of minerals.

Several different types of vegetation have influenced the formation of the soils in Menard County. These include prairie vegetation, upland hardwood forests, forest-prairie transition areas, and flood-plain areas. These vegetation types are described in the following paragraphs.

Prairie Vegetation.—The decomposition of the roots of annual prairie grasses provides well distributed subsurface accumulations of organic materials, resulting in a thick, dark surface layer. Osco soils formed under prairie vegetation. The average content of organic matter in the surface layer of these soils is 3 to 4 percent.

Upland Hardwood Forests.—Organic matter is contributed primarily from the annual additions of leaf litter to the surface layer, resulting in a thin, dark surface layer. Fayette soils formed under this type of vegetation. The average content of organic matter in the surface layer of these soils is 1 to 2 percent.

Forest-Prairie Transition Areas.—Soils that formed in these areas exhibit modified characteristics of both forest and prairie vegetative regimes. Clarksdale soils, which formed in these transition areas, have a thinner surface layer than the soils that formed under prairie vegetation. The average content of organic matter in the surface layer of the Clarksdale soils is 1 to 3 percent.

Flood-Plain Areas.—Soils in these areas formed under a combination of trees and grasses. They have colors that largely reflect those of the sediments in which they formed. Tice and Arenzville soils are examples.

Bacteria, fungi, and many other micro-organisms decompose organic material and release nutrients to growing plants. They influence the formation of peds. Soil properties, such as drainage, temperature, and reaction, influence the type of micro-organisms that live in the soil. Fungi are generally more active in the more acid soils, and bacteria are more active in the less acid soils.

Earthworms, crayfish, insects, and small burrowing animals mix the soil and create small channels that influence soil aeration and the percolation of water. Earthworms help to incorporate crop residue or other organic material into the soil. The organic material improves soil tilth. In areas that are well populated with earthworms, the leaf litter that accumulates on the soil in the fall is generally incorporated into the soil by the following spring. If the earthworm population is low, part of the leaf litter can remain on the surface of the soil for several years.

Human activities have significantly influenced soil formation through their effect on soil health. Degradation processes, such as erosion, compaction, contamination, disaggregation, loss of biological activity, and nutrient depletion, have damaged soil health. Native forests have been cleared and wet soils drained for farming and other uses. The development of land for urban uses or for surface mining has significantly influenced the soils in some areas.

Topography

Topography describes the configuration of the land surface in terms of relief and contour. It influences soil formation mainly through its effect on the proportion of surface-water runoff to infiltration and on the degree of erosion or deposition. In Menard County, the less sloping areas generally have a lower rate of runoff and a higher rate of infiltration than the steeper areas. Soils that form in the less sloping areas tend to exhibit more development than the soils in the steeper areas and have a thicker soil profile.

The degree of the effect of topography is dependent upon the type and stability of the land surface. There are two types of land surfaces—aggrading and degrading—and three levels of stability—stable, metastable, and active. In Menard County, aggrading surfaces receive material either from deposition associated with flooding or by the accumulation of erosional sediments. Arenzville soils formed on natural levees on flood plains, which are active-aggrading land surfaces. Natural levees receive depositions of sediment from frequent episodes of flooding. Worthen soils formed on footslopes that receive runoff with some accumulation of hillslope sediments. Footslopes are examples of metastable-aggrading land surfaces. Sable soils formed in broad, low-lying areas on drainage divides that receive runoff from upslope but accumulate little sediment from hillslope erosion. These broad, low-lying areas are examples of stable-aggrading land surfaces. Degrading surfaces lose material primarily by the process of erosion. Keomah soils formed on the broad summits of interfluves. Broad summits are examples of stable-degrading surfaces, where runoff is limited. Fayette soils occur on shoulders of hillslopes and thus are more susceptible than the Keomah soils to runoff and erosion. Shoulders are metastable-degrading surfaces, where increased runoff leads to higher rates of erosion. Backslopes are examples of active-degrading surfaces. Sylvan soils are on backslopes, where runoff and erosion rates are highest.

Time

The length of time that the parent material has been exposed to the soil-forming processes influences the degree of genetic horizon development that occurs within the soil. The evaluation of time as a factor in soil formation is difficult because of the effects of the other soil-forming factors. The influence of time can be modified by erosion, deposition of material, topography, and kind of parent material. In some of the steeper areas, erosion removes the surface soil material as soon as the soil forms. Soils in these areas are immature, even though the slopes have been exposed to weathering for thousands of years. Hamburg soils are examples. Soils on flood plains receive alluvial material during each flood. This repeated deposition interrupts soil formation. Arenzville soils are examples of soils that formed in stream alluvium.

Processes of Soil Formation

Soil forms through the complex interaction of four general processes. These processes are additions, transformations, removals, and transfers. The importance of these processes in the formation of a given soil varies.

The accumulation of organic matter in the A horizon of the mineral soils in Menard County is an example of an addition. The most striking example of this addition is the formation of the mollic epipedon. The mollic epipedon forms in an environment that features optimum amounts of moisture, temperature, and bivalent cations. Such an environment allows grasses to thrive. The underground decomposition of organic residues and of organic residues from the surface that have been taken underground by animals results in the characteristic thickness and darkness of the mollic epipedon. Ipava soils are examples of soils that have a mollic epipedon.

Transformations are changes that take place in the soil. An example is the reduction of iron and manganese. Typically, iron oxides coat soil particles and, in an aerated environment, produce yellowish, yellowish brown, or reddish colors. Manganese oxides produce black colors. Micro-organisms that are able to generate energy from the oxidation of soil organic matter in an aerated environment flourish. The energy is necessary for the micro-organisms to conduct the basic functions of life. When a soil becomes saturated with water and the dissolved oxygen is depleted or removed, anaerobic conditions develop. In an anaerobic environment, other micro-organisms, which can derive energy from the reduction of oxidized compounds, such as iron and manganese, become prevalent. The energy produced is used to create chemical compounds from organic matter that are necessary to sustain life. The reduced iron or manganese is mobile and migrates in the soil water throughout the soil profile. Reduced iron and manganese can move with the soil water to other parts of the soil (translocation) and can be lost entirely from the soil by leaching (removal). After the iron and manganese are gone, the leached area, or depletion, generally has a grayish or whitish color, which is the natural color of the mineral grains. If the reduced iron is exposed to oxygen, it can re-oxidize. The result is the formation of bright-colored concentrations or accumulations. The processes of reduction, translocation, and oxidation result in the development of distinctive soil morphological characteristics called redoximorphic features. Repeated cycles of saturation and drying create a mottled soil. Part of the soil is gray because of the loss of iron, and other parts are brown because the iron oxide has accumulated or has not been removed. The somewhat poorly drained Ipava soils are examples of soils in which this process has occurred. If a soil remains saturated for long periods, iron may be leached from the profile. Such soils are generally grayish, or gleyed. The poorly drained Zook soils are examples.

Removals that occur within the soil are commonly a result of leaching. The leaching of calcium carbonate from many of the soils in the county is an example of a removal. The parent material of these soils was initially high in calcium carbonate. Water percolating through the soil dissolved and transported the carbonate into the deeper soil layers. Calcium carbonate is relatively soluble and is removed relatively early in the formation of the soil. It is also a powerful flocculent, and its removal facilitates the translocation of clay and the formation of illuvial horizons. The loss of solid mineral and organic particles through erosion is another example of a removal. Such losses can be serious because the material lost is typically the most productive part of the soil profile.

Translocations are movements from one place to another in the soil. An example is the formation of an illuvial horizon through the translocation of clay from the A or E horizon, the zone of eluviation, or loss, to the B horizon, the zone of illuviation, or gain. In Fayette soils, for example, a significant amount of clay has accumulated, forming an illuvial horizon called an argillic horizon. The argillic horizon developed on a relatively old, stable landscape. Fine clay was transferred from the A or E horizon by water from rain and melting snow downward through the soil to the B horizon, where it was deposited on the faces of peds and along pores.

Soils and Soil-Landscape Units

Soils are natural bodies that are distributed on the landscape in a predictable way in response to a systematic interaction of the five major factors of soil formation—parent material, time, topography, plants and animals, and climate. The relationship of landscape to these five factors results in a soil-landscape unit (Hudson, 1992). A soil-landscape unit is similar to a landform that has been modified by one or more of the soil-forming factors. Within a particular soil-landscape unit, the same kind of soil should develop. Variation in the interaction of one or more of the five factors results in a change in the soil-landscape unit, which in turn influences the soil-forming processes and the soil that forms within the unit.

The following paragraphs describe the relationships and interactions that occur in some of the more common soil-landscape units in Menard County and the soils that have formed in these units.

Upland landscapes predominate in Menard County. These landscapes range from broad, relatively undissected drainage divides to dissected areas adjacent to the river bluffs. The parent material is loess. Much of the calcium carbonate present when the loess was deposited has been leached to a sufficient depth to facilitate soil development.

Low-lying areas on the broad drainage divides are stable-aggrading land surfaces that receive water through direct precipitation and runoff from upslope. These conditions result in a wet soil microclimate. A seasonal high water table is near the surface much of the year, and at times the area is ponded. Redoximorphic features associated with prolonged saturated conditions, such as a depleted soil matrix and iron and manganese accumulations along root channels and pores, occur at the soil surface as a result of the seasonal high water table.

The native vegetation in this soil-landscape unit was prairie grass. Additions of organic material from the decomposition of the extensive and deep root systems of these grasses resulted in the formation of a thick, dark surface layer called a mollic epipedon.

The saturated conditions and poor aeration influenced the rate of decomposition of organic material. This rate is slower in soils that are saturated for prolonged periods, resulting in a thicker mollic epipedon and a higher content of organic matter than those of the soils in better aerated positions upslope.

The extended periods of saturation also impeded the movement or illuviation of clay. A cambic horizon has developed through the aggregation of soil particles into structural units, or peds, and the development of redoximorphic features. Sable soils formed in areas of this soil-landscape unit.

Upslope from the low-lying areas is a soil-landscape unit composed of the summits of broad rises on drainage divides. These areas are stable-degrading land surfaces that receive water primarily through direct precipitation. The seasonal high water table is at a lower depth than in the soils in the adjacent low-lying areas, and the associated redoximorphic features indicate a fluctuating water table. The soil microclimate alternates between periods when the soil is saturated and periods when the soil is unsaturated. The yellowish brown soil matrix in the upper part of the profile indicates an oxidizing environment; the redoximorphic features are associated with periods of saturation.

The native vegetation in areas of this soil-landscape unit was prairie grasses. These landscape positions are better aerated than the adjacent low-lying positions and tend to have a higher rate of decomposition of organic matter. As a result, the soils in these areas generally have a slightly thinner mollic epipedon and a lower content of organic matter than the soils in the low-lying areas.

Fluctuations in depth to the water table disrupt the soil fabric through wetting and drying cycles. An argillic horizon has formed as a result of the dispersal, movement, and precipitation of clay as films on ped surfaces and as linings of pores. Ipava soils formed in areas of this soil-landscape unit.

The soil-landscape unit in the more dissected areas is composed of broad summits of interfluves. It has characteristics similar to those of the unit on the summits of broad rises on drainage divides. These dissected areas are stable-degrading land surfaces that receive water primarily through direct precipitation. The depth to the seasonal high water table and the associated redoximorphic features are nearly identical to those of the soil-landscape unit on the summits of broad rises.

The native vegetation in this soil-landscape unit was transitional between forest and prairie vegetation. The soils in these areas have a dark surface layer, but they do not have a mollic epipedon because the dark surface layer is not thick enough and does not have a sufficient accumulation of organic matter. This type of surface horizon is called an ochric epipedon.

A light-colored, eluvial subsurface horizon (called an albic horizon) has also developed in the soils in these areas. This horizon is typical of soils that formed under forest vegetation. In this horizon, much of the clay and free iron oxides has been removed and the color is determined primarily by the uncoated silt and sand particles. The clay translocated from the eluvial horizon to the illuvial horizon results in the formation of an argillic horizon. Clarksdale soils are in areas of this soil-landscape unit.

Adjacent to this soil-landscape unit is a unit that is also composed of summits of interfluves but that is generally closer to the opposing interfluve drainageways and on narrower summits. These areas are stable-degrading land surfaces that receive water through direct precipitation. Water that does not infiltrate the soil is lost through surface flow or runoff. Runoff increases the susceptibility to erosion.

The seasonal high water table and the associated redoximorphic features occur at a much lower depth than in the soils on the broad summits. The upper part of the soil profile is generally yellowish brown and free of depletions, indicating an oxidizing environment. Depletions occurring in the lower part of the subsoil are generally restricted to the pores within the soil.

The native vegetation in areas of this soil-landscape unit was forest. Under forest vegetation, most of the addition of organic material occurs above ground. Organic matter is not incorporated as deep in the soil profile as it is in soils that formed under prairie vegetation, and the content decreases rapidly with increasing depth. Therefore, the dark surface layer in these soils is thinner than that in the Clarksdale soils. An ochric epipedon and an albic horizon have developed.

The more acid leaching environment that occurs under forest vegetation allows dispersed clay particles to be translocated to a greater depth than in similar positions under prairie vegetation. The result is a well developed argillic horizon. Rozetta soils formed in areas of this soil-landscape unit.

In rolling landscapes adjacent to the major rivers in the county is a soil-landscape unit composed of shoulders of hillslopes. These areas are metastable-degrading land surfaces that receive water through direct precipitation but also lose some of this water through runoff. Runoff increases the susceptibility to erosion and creates a drier soil microclimate. The seasonal high water table is below the depth of the developing soil profile. The entire profile is yellowish brown or brown, indicating an oxidizing environment.

The native vegetation in this soil-landscape unit was forest. The soils have an ochric epipedon and albic and argillic horizons. Fayette soils are examples.

Downslope from this soil-landscape unit is a unit composed of the backslopes of hillslopes. These areas are active-degrading land surfaces that receive water through direct precipitation but also lose much of this water through runoff. The depth to the seasonal high water table is greater than that in the Fayette soils, and thus the soil profile is yellowish brown or brown and is free of depletions.

The native vegetation was forest. Like the Fayette soils, the soils in these areas have an ochric epipedon. Because much of the water is lost to runoff, however, less water infiltrates and percolates through the soil and little is available to aid in the translocation of clay. As a result, these soils do not have an albic or argillic horizon. Hamburg soils formed in areas of this soil-landscape unit.

On the narrow flood plains between opposing side slopes is an active-aggrading land surface that receives depositions of sediment from frequent episodes of flooding. The nearly continual deposition of sediment interrupts the soil-forming processes. The result is a less developed soil profile. The soils in these areas have an ochric epipedon, but they also exhibit the fine stratification common to recent alluvial deposits and have no diagnostic subsurface horizons. Arenzville soils are examples.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999). 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 4 shows the classification of the soils in Menard County. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol.* An example is 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 Udoll (*Ud,* meaning humid, 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 that indicates a property of the soil. An example is Argiudolls (*Argi,* meaning white clay, plus *udoll,* the suborder of the Mollisols that has a udic 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 Argiudolls.

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

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 Detailed Soil Map Units

In this section, arranged in alphabetical order, each major soil series recognized in the county is described. Each series description is followed by detailed descriptions of the associated soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil 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” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2003). 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 on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings “Use and Management of the Soils” and “Soil Properties.”

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

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

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

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

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

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

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Sylvan-Bold silt loams, 35 to 60 percent slopes, is an example.

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

Table 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Alvin Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Alvin fine sandy loam, 2 to 5 percent slopes, at an elevation of about 660 feet; Vermilion County, Illinois; about 2,320 feet south and 1,760 feet east of the northwest corner of sec. 32, T. 21 N., R. 11 W.; USGS Danville NE, Illinois, topographic quadrangle; lat. 40 degrees 14 minutes 08 seconds N. and long. 87 degrees 36 minutes 58 seconds W.; UTM zone 16, 447588E 4454088N, NAD 83:

Ap—0 to 8 inches; brown (10YR 4/3) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; moderately acid; abrupt smooth boundary.

BE—8 to 11 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine subangular blocky structure; very friable; few distinct grayish brown (10YR 5/2) clay depletions on faces of peds; moderately acid; clear smooth boundary.

Bt1—11 to 15 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate fine subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—15 to 25 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

E and Bt—25 to 74 inches; yellowish brown (10YR 5/4) loamy fine sand (E); weak medium subangular blocky structure; very friable; dark yellowish brown (10YR 4/6) fine sandy loam (Bt); 3 to 10 percent of volume; occurs as common or many thin lamellae; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

C—74 to 80 inches; 80 percent brown (10YR 4/3) and 20 percent yellowish brown (10YR 5/6), stratified fine sandy loam; massive; friable; moderately acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to more than 80 inches

Ap or A horizon(s):
Hue—10YR
Value—3 or 4; value of 3 in A horizons less than 6 inches thick
Chroma—1 to 4
Texture—fine sandy loam, sandy loam, or very fine sandy loam

E, EB, or BE horizon(s) (where present):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—2 to 4
Texture—very fine sandy loam, fine sandy loam, sandy loam, or loamy fine sand

Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—very fine sandy loam, loam, fine sandy loam, or sandy loam; thin layers of sandy clay loam in some pedons

E and Bt or Bt and E horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—2 to 6 (E part); 3 to 6 (Bt part)
Texture—sandy loam, loamy sand, or sand or the fine or very fine analogs of these textures (E part); sandy loam, fine sandy loam, very fine sandy loam, loamy sand, loamy fine sand, loamy very fine sand, or loam (Bt part)

BC or C horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, loamy sand, or sand or the fine or very fine analogs of these textures

131C2—Alvin fine sandy loam, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Summits and backslopes

Map Unit Composition

Alvin and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay and more sand in the surface soil and in the upper part of the subsoil
- Soils that have less sand in the surface soil and in the upper part of the subsoil

Properties and Qualities of the Alvin Soil

Parent material: Loamy and sandy sediments and/or eolian deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

131D2—Alvin fine sandy loam, 10 to 18 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Backslopes

Map Unit Composition

Alvin and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay and more sand in the surface soil and in the upper part of the subsoil
- Soils that have less sand in the surface soil and in the upper part of the subsoil
- Soils that have more clay throughout

Properties and Qualities of the Alvin Soil

Parent material: Loamy and sandy sediments and/or eolian deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Arenzville Series

Taxonomic classification: Coarse-silty, mixed, superactive, nonacid, mesic Typic Udifluvents

Typical Pedon

Arenzville silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 525 feet; Cass County, Illinois; 930 feet north and 120 feet east of the center of sec. 27, T. 18 N., R. 11 W.; USGS Arenzville East, Illinois, topographic quadrangle; lat. 39 degrees 59 minutes 09 seconds N. and long. 90 degrees 19 minutes 16 seconds W.; UTM zone 15, 728744E 4429628N, NAD 83:

Ap—0 to 6 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak thin platy structure parting to weak fine granular; friable; few very fine roots; many faint dark brown (10YR 3/3) organic stains on faces of peds; slightly alkaline; abrupt smooth boundary.
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 stains; slightly 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 faint brown (7.5YR 4/4) iron and manganese masses; slightly alkaline; clear wavy boundary.
Ab1—36 to 45 inches; very dark grayish brown (10YR 3/2) and very dark gray (10YR 3/1) silt loam; common fine faint brown (10YR 4/3) mottles; weak fine and medium granular structure; friable; slightly alkaline; abrupt smooth boundary.
Ab2—45 to 56 inches; black (10YR 2/1) silt loam; weak very fine and fine subangular blocky structure; friable; slightly alkaline; clear smooth boundary.
Ab3—56 to 60 inches; black (10YR 2/1) silty clay loam; weak fine subangular blocky structure; firm; slightly alkaline.

Range in Characteristics

Depth to buried surface horizon: 20 to 60 inches

Ap or A horizon(s):
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam; thin strata of coarser textures

C horizon(s):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam; thin strata of coarser textures

Ab horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam, silty clay loam, or thin strata of coarser textures

Bwb or Btb horizon(s) (where present):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam, silty clay loam, or thin strata of coarser textures

C´ horizon(s) (where present):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—1 to 6
Texture—silt loam; thin strata of coarser textures

3078A—Arenzville silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains (fig. 4)

Map Unit Composition

Arenzville and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker and darker surface soil and contain more sand throughout
- Soils that have a thicker and darker surface soil
- Soils that are subject to occasional flooding
- Soils that do not have a buried soil within a depth of 60 inches
- Soils that have a buried soil at a depth of less than 20 inches

Dissimilar soils:
- The somewhat poorly drained Tice soils in the slightly lower positions
- The somewhat poorly drained Radford soils in positions similar to those of the Arenzville soil

Properties and Qualities of the Arenzville Soil

Parent material: Silty alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent

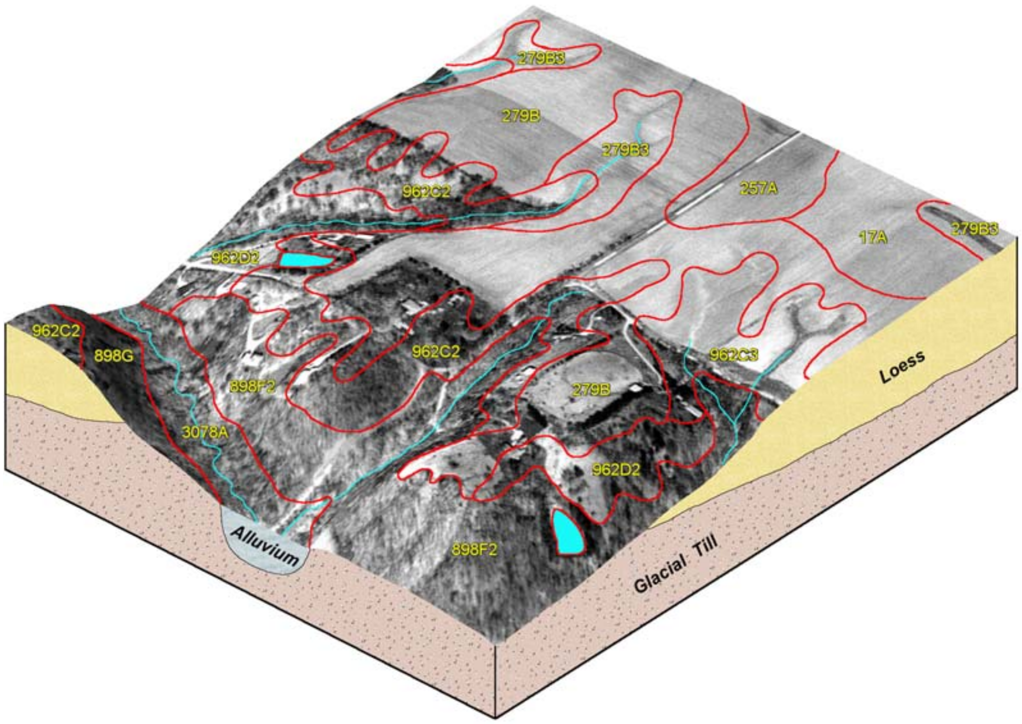


Figure 4.—Typical pattern of nearly level to very steep upland soils that formed in loess or till. Nearly level soils that formed in alluvium are along minor streams.

Shrink-swell potential: Moderate
Apparent seasonal high water table: 3.5 to 6.0 feet below the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Beaucoup Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls

Typical Pedon

Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 475 feet; Adams County, Illinois; 727 feet south and 2,577 feet west of the northeast corner of sec. 9, T. 1 N., R. 9 W.; USGS Long Island, Illinois, topographic quadrangle;

lat. 40 degrees 05 minutes 39 seconds N. and long. 91 degrees 26 minutes 50 seconds W.; UTM zone 15, 632420E 4439184N, NAD 83:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine granular structure; friable; common fine roots; few fine distinct yellowish brown (10YR 5/4) masses of iron and manganese accumulation between peds; neutral; gradual smooth boundary.

A—6 to 15 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few fine distinct dark yellowish brown (10YR 3/4) masses of iron and manganese accumulation between peds; neutral; gradual smooth boundary.

Bg1—15 to 24 inches; dark gray (10YR 4/1) silty clay loam; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few fine distinct dark yellowish brown (10YR 4/4) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

Bg2—24 to 35 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; very few faint dark gray (5Y 4/1) organo-clay films in root channels and pores; common fine prominent dark yellowish brown (10YR 4/4) and few fine prominent dark brown (7.5YR 3/4) and strong brown (7.5YR 4/6) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

Bg3—35 to 48 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; very few faint dark gray (5Y 4/1) organo-clay films in root channels and pores; few fine prominent dark yellowish brown (10YR 4/4) and few fine prominent dark brown (7.5YR 3/4) and strong brown (7.5YR 4/6) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

BCg—48 to 60 inches; gray (5Y 5/1), stratified silt loam and silty clay loam; weak medium prismatic structure; friable; very few faint dark gray (5Y 4/1) organo-clay films in root channels and pores; common fine prominent dark yellowish brown (10YR 4/4) and few fine prominent dark brown (7.5YR 3/4) and strong brown (7.5YR 4/6) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

Cg1—60 to 70 inches; dark gray (10YR 4/1), stratified silt loam and silty clay loam; massive; friable; common fine prominent dark yellowish brown (10YR 4/6) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

Cg2—70 to 80 inches; dark gray (10YR 4/1), stratified silt loam and silty clay loam; massive; friable; common fine prominent dark yellowish brown (10YR 4/6) masses of iron and manganese accumulation throughout; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates (if they occur): More than 40 inches
Depth to the base of the diagnostic horizon: 35 to 65 inches
Other features: The Beaucoup soil in map unit 3070S has, within a depth of 80 inches, a sandy substratum. The characteristics are the same as those described for the 2Cg horizon(s) below.

Ap or A horizon(s):
Hue—10YR or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam or silt loam

Bg or Btg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam

Cg horizon(s) (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—stratified silty clay loam, silt loam, loam, sandy loam, fine sandy loam, or very fine sandy loam

2Cg horizon(s) (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—fine sand, sand, loamy fine sand, or loamy sand

3070A—Beaucoup silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Beaucoup and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 1 foot
- Soils that have a dark surface soil more than 24 inches thick
- Soils that have more sand throughout
- Soils that have more sand in the underlying material
- Soils that are subject to occasional flooding
- Soils that have more clay in the surface soil and subsoil

Dissimilar soils:
- The well drained Ross soils in the slightly higher positions

Properties and Qualities of the Beaucoup Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5.0 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

3070S—Beaucoup silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Beaucoup and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 1 foot
- Soils that have a seasonal high water table at a depth of more than 1 foot and have more sand in the surface layer and subsoil
- Soils that have a dark surface soil more than 24 inches thick
- Soils that have more sand throughout
- Soils that have less sand in the underlying material
- Soils that are subject to occasional flooding
- Soils that have more clay in the surface soil and subsoil

Dissimilar soils:
- The well drained Ross soils in the slightly higher positions

Properties and Qualities of the Beaucoup Soil

Parent material: Alluvium over sandy sediments
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow to rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5.0 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

8070A—Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Beaucoup and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 1 foot
- Soils that have a dark surface soil more than 24 inches thick
- Soils that have more sand throughout
- Soils that have more clay in the surface soil and subsoil

Dissimilar soils:
- The well drained Proctor soils in the higher positions

Properties and Qualities of the Beaucoup Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5.0 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Occasional, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Bloomfield Series

Taxonomic classification: Sandy, mixed, mesic Lamellic Hapludalfs

Typical Pedon

Bloomfield fine sand, 5 to 10 percent slopes, at an elevation of about 448 feet; Lawrence County, Illinois; 600 feet south and 200 feet west of the northeast corner of sec. 4, T. 3 N., R. 11 W.; USGS Lawrenceville, Illinois, topographic quadrangle; lat. 38 degrees 43 minutes 52 seconds N. and long. 87 degrees 37 minutes 59 seconds W.; UTM zone 16, 444973E 4287134N, NAD 83:

A—0 to 5 inches; dark grayish brown (10YR 4/2) fine sand, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; slightly acid; clear smooth boundary.

E1—5 to 24 inches; brown (10YR 4/3) fine sand; single grain; loose; moderately acid; gradual wavy boundary.

E2—24 to 38 inches; yellowish brown (10YR 5/6) fine sand; single grain; loose; moderately acid; clear smooth boundary.

E and Bt1—38 to 58 inches; yellowish brown (10YR 5/4) fine sand (E); single grain; loose; many wavy and discontinuous lamellae of brown (7.5YR 4/4) loamy fine sand and bands of Bt material about $^{1}/_{8}$ inch thick in the upper part and $^{1}/_{8}$ inch to 6 inches thick in the lower part; weak coarse subangular blocky structure; friable; moderately acid; gradual wavy boundary.

E and Bt2—58 to 80 inches; yellowish brown (10YR 5/4) fine sand (E); single grain; loose; brown (7.5YR 4/4) loamy fine sand (Bt); weak coarse subangular blocky structure; friable; bands are nearly continuous and are 4 to 8 inches thick; moderately acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 60 to more than 80 inches
Thickness of lamellae and banded layers: 0 to 8 inches
Combined thickness of the lamellae above a depth of 60 inches: More than 6 inches

Ap or A horizon(s):
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—fine sand, loamy fine sand, sand, or loamy sand

E horizon(s):
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—fine sand, loamy fine sand, sand, or loamy sand

E part of E and Bt horizon(s) (occurs as interband material):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—fine sand, loamy fine sand, loamy sand, or sand

Bt part of E and Bt horizon(s) (lamellae):
Hue—10YR, 7.5YR, or 5YR
Value—3 to 5
Chroma—3 to 6

Texture—commonly loamy fine sand, loamy sand, or fine sand; less commonly sand, fine sandy loam, or sandy loam

C horizon(s) (where present):
Hue—10YR
Value—4 to 7
Chroma—2 to 6
Texture—fine sand, loamy fine sand, or sand

53B—Bloomfield fine sand, 1 to 7 percent slopes

Setting

Landform: Ground moraines; stream terraces
Position on the landform: Summits and shoulders

Map Unit Composition

Bloomfield and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 7 percent
- Soils that have a darker surface soil and more clay in the surface soil and in the upper part of the subsoil

Dissimilar soils:
- The well drained Princeton, Middletown, and Broadwell soils in positions similar to those of the Bloomfield soil
- The poorly drained Thorp soils in depressions

Properties and Qualities of the Bloomfield Soil

Parent material: Eolian sands
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: 3s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

53D—Bloomfield fine sand, 7 to 15 percent slopes

Setting

Landform: Stream terraces; ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Bloomfield and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 7 percent
- Soils that have a darker surface soil and more clay in the surface soil and in the upper part of the subsoil

Dissimilar soils:
- The well drained Princeton, Middletown, and Broadwell soils in positions similar to those of the Bloomfield soil

Properties and Qualities of the Bloomfield Soil

Parent material: Eolian sands
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

861B2—Princeton-Bloomfield fine sands, 1 to 7 percent slopes, eroded

Setting

Landform: Dunes
Position on the landform: Princeton—shoulders and backslopes; Bloomfield—summits and shoulders (fig. 5)

Map Unit Composition

Princeton and similar soils: 45 percent

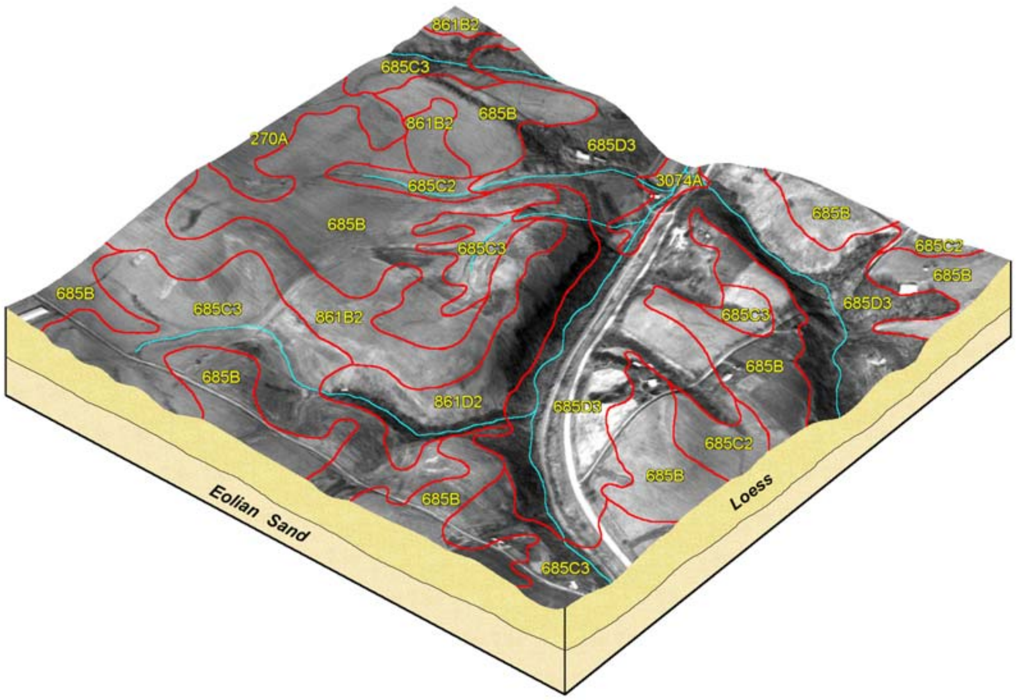


Figure 5.—Typical pattern of nearly level to strongly sloping upland soils that formed in loess or eolian deposits and the underlying eolian sands or that formed entirely in eolian sands. Nearly level soils that formed in alluvium are along minor streams.

Bloomfield and similar soils: 40 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the surface soil and in the upper part of the subsoil
- Soils that have a darker surface soil and have less sand and more clay in the surface soil and in the upper part of the subsoil
- Soils that have less sand and more clay in the surface layer
- Soils that have slopes of less than 1 percent
- Soils that have slopes of more than 7 percent

Dissimilar soils:
- The somewhat poorly drained Stronghurst and Lawndale soils in the less sloping positions
- The poorly drained Thorp soils in depressions

Properties and Qualities of the Princeton Soil

Parent material: Eolian deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.5 percent
Shrink-swell potential: Low

Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Properties and Qualities of the Bloomfield Soil

Parent material: Eolian sands
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Princeton—2e; Bloomfield—3s
Prime farmland category: Prime farmland
Hydric soil status: Princeton—not hydric; Bloomfield—not hydric

861D2—Princeton-Bloomfield fine sands, 7 to 15 percent slopes, eroded

Setting

Landform: Dunes
Position on the landform: Princeton—shoulders and backslopes; Bloomfield—summits and shoulders (fig. 5)

Map Unit Composition

Princeton and similar soils: 45 percent
Bloomfield and similar soils: 40 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the surface soil and in the upper part of the subsoil
- Soils that have a darker surface soil and have less sand and more clay in the surface soil and in the upper part of the subsoil

- Soils that have less sand and more clay in the surface layer
- Soils that have slopes of less than 7 percent
- Soils that have slopes of more than 15 percent

Dissimilar soils:
- The somewhat poorly drained Stronghurst and Lawndale soils in the less sloping positions
- The poorly drained Thorp soils in depressions

Properties and Qualities of the Princeton Soil

Parent material: Eolian deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very high

Properties and Qualities of the Bloomfield Soil

Parent material: Eolian sands
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Princeton—3e; Bloomfield—4e
Prime farmland category: Prime farmland
Hydric soil status: Princeton—not hydric; Bloomfield—not hydric

861F—Princeton-Bloomfield fine sands, 15 to 35 percent slopes

Setting

Landform: Dunes
Position on the landform: Backslopes

Map Unit Composition

Princeton and similar soils: 45 percent
Bloomfield and similar soils: 40 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the surface soil and in the upper part of the subsoil
- Soils that have less sand and more clay throughout and have carbonates at a depth of less than 40 inches
- Soils that have more clay and less sand in the surface layer
- Soils that have slopes of less than 15 percent
- Soils that have less sand and more clay throughout

Dissimilar soils:
- The well drained Middletown soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Princeton and Bloomfield soils

Properties and Qualities of the Princeton Soil

Parent material: Eolian deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very high

Properties and Qualities of the Bloomfield Soil

Parent material: Eolian sands
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface

Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Princeton—6e; Bloomfield—6e
Prime farmland category: Not prime farmland
Hydric soil status: Princeton—not hydric; Bloomfield—not hydric

Bold Series

Taxonomic classification: Coarse-silty, mixed, superactive, calcareous, mesic Typic Udorthents

Typical Pedon

Bold silt loam, in an area of Sylvan-Bold complex, 10 to 18 percent slopes, severely eroded, at an elevation of 730 feet; Henry County, Illinois; 600 feet north and 900 feet east of the southwest corner of sec. 7, T. 16 N., R. 3 E.; USGS Geneseo, Illinois, topographic quadrangle; lat. 41 degrees 23 minutes 04 seconds N. and long. 90 degrees 11 minutes 57 seconds W.; UTM zone 15, 734182E 4585225N, NAD 83:

Ap—0 to 8 inches; mixed brown (10YR 4/3), dark grayish brown (10YR 4/2), and yellowish brown (10YR 5/4) silt loam, pale brown (10YR 6/3) and light yellowish brown (10YR 6/4) dry; weak very fine and fine granular structure; friable; slightly effervescent; moderately alkaline; abrupt smooth boundary.

C1—8 to 16 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; strongly effervescent; moderately alkaline; abrupt smooth boundary.

C2—16 to 37 inches; light brownish gray (10YR 6/2) and yellowish brown (10YR 5/6) silt loam; massive; friable; strongly effervescent; moderately alkaline; clear smooth boundary.

C3—37 to 60 inches; yellowish brown (10YR 5/6) and light brownish gray (10YR 6/2) silt loam; massive; friable; strongly effervescent; moderately alkaline; clear wavy boundary.

C4—60 to 80 inches; light brownish gray (10YR 6/2) and yellowish brown (10YR 5/6) silt loam; massive; few coarse prominent strong brown (7.5YR 5/8) iron concentrations; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: More than 6 feet
Depth to the base of the diagnostic horizon: 3 to 12 inches

Ap horizon(s):
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

C horizon(s):
Hue—10YR
Value—4 to 7
Chroma—2 to 8
Texture—silt loam

962C2—Sylvan-Bold silt loams, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 4)

Map Unit Composition

Sylvan and similar soils: 60 percent
Bold and similar soils: 40 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 6 feet and have carbonates at a depth of more than 40 inches
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 10 percent
- Soils that have more clay in the surface layer

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete

Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—3e; Bold—3e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962C3—Sylvan-Bold complex, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 4)

Map Unit Composition

Sylvan and similar soils: 60 percent
Bold and similar soils: 40 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 6 feet and have carbonates at a depth of more than 40 inches
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 10 percent
- Soils that have less clay in the surface layer

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—4e; Bold—4e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962D2—Sylvan-Bold silt loams, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes (fig. 4)

Map Unit Composition

Sylvan and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 18 percent
- Soils that have more clay in the surface layer

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface

Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—3e; Bold—3e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962D3—Sylvan-Bold complex, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Sylvan and similar soils: 60 percent
Bold and similar soils: 30 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 18 percent
- Soils that have less clay in the surface layer
- Soils that have slopes of less than 10 percent

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—4e; Bold—4e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962E2—Sylvan-Bold silt loams, 18 to 25 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Sylvan and similar soils: 60 percent

Bold and similar soils: 30 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 25 percent
- Soils that have more clay in the surface layer
- Soils that have slopes of less than 18 percent
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Fayette soils on summits and the less sloping backslopes

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—6e; Bold—6e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962F2—Sylvan-Bold silt loams, 18 to 35 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Sylvan and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 35 percent
- Soils that have more clay in the surface layer
- Soils that have slopes of less than 18 percent
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Fayette soils on summits and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess

Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—6e; Bold—6e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962G—Sylvan-Bold silt loams, 35 to 60 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Sylvan and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have more clay in the surface layer
- Soils that have slopes of less than 35 percent
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Fayette soils on summits and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—7e; Bold—7e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

965C2—Tallula-Bold silt loams, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 6)

Map Unit Composition

Tallula and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 35 inches and have more clay in the subsoil
- Soils that have more clay in the subsoil
- Soils that have slopes of less than 5 percent
- Soils that have slopes of more than 10 percent

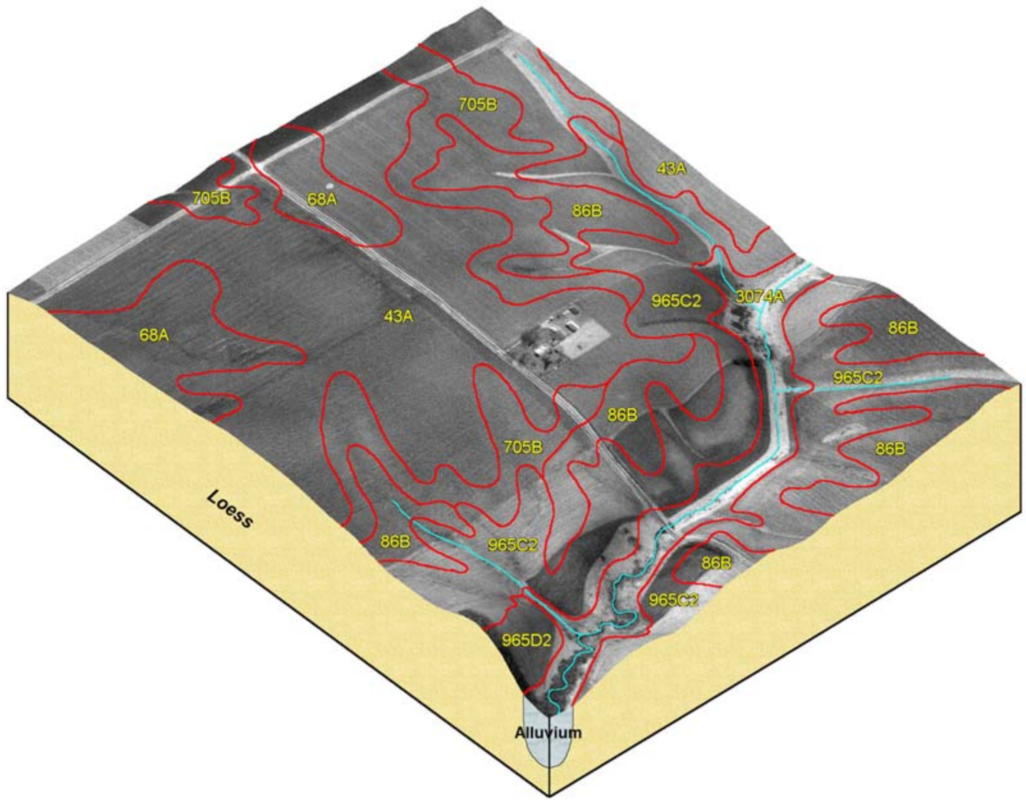


Figure 6.—Typical pattern of nearly level to strongly sloping upland prairie soils that formed in loess. Nearly level soils that formed in alluvium are along minor streams.

Dissimilar soils:
- The moderately well drained Buckhart soils on summits and shoulders

Properties and Qualities of the Tallula Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Tallula—3e; Bold—3e
Prime farmland category: Not prime farmland
Hydric soil status: Tallula—not hydric; Bold—not hydric

965D2—Tallula-Bold silt loams, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes (fig. 6)

Map Unit Composition

Tallula and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 35 inches and have more clay in the subsoil
- Soils that have more clay in the subsoil
- Soils that have slopes of less than 10 percent
- Soils that have slopes of more than 18 percent

Dissimilar soils:
- The moderately well drained Buckhart soils on summits and shoulders

Properties and Qualities of the Tallula Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Tallula—3e; Bold—3e
Prime farmland category: Not prime farmland
Hydric soil status: Tallula—not hydric; Bold—not hydric

Broadwell Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Broadwell soils in map units 684C2 and 827C2 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Hapludalfs.

Typical Pedon

Broadwell silt loam, 2 to 5 percent slopes, at an elevation of about 625 feet; Christian County, Illinois; about 2,500 feet north and 460 feet west of the center of sec. 11, T. 15 N., R. 2 W.; USGS Mount Auburn topographic quadrangle; lat. 39 degrees 46 minutes 17 seconds N. and long. 89 degrees 16 minutes 51 seconds W.; UTM zone 16, 304645E 4404877N, NAD 83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; weak fine granular structure; friable; common very fine roots and few fine roots; moderately acid; clear smooth boundary.
A—9 to 15 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; few very fine and fine roots; slightly acid; clear smooth boundary.
Bt1—15 to 18 inches; dark brown (10YR 3/3) silty clay loam, yellowish brown (10YR 5/4) dry; weak very fine and fine subangular blocky structure; friable; few very fine

and fine roots; many faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—18 to 25 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; few very fine and fine roots; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—25 to 31 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; few very fine and fine roots; common faint very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores and common faint brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt4—31 to 41 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores, common faint brown (10YR 4/3) clay films on faces of peds, and few distinct light gray (10YR 7/2) silt coatings on faces of peds and in pores; moderately acid; clear smooth boundary.

Bt5—41 to 50 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium and coarse subangular blocky structure; friable; few very fine roots; common faint brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds and in pores; few fine faint brown (10YR 5/3) masses of iron accumulation along micropores; moderately acid; abrupt smooth boundary.

2BC1—50 to 55 inches; dark yellowish brown (10YR 4/4), stratified loamy fine sand and sandy loam; weak coarse subangular blocky structure; very friable; slightly acid; clear smooth boundary.

2BC2—55 to 76 inches; stratified, yellowish brown (10YR 5/4) and brown (7.5YR 4/4) fine sand and loamy sand; single grain; loose; few distinct dark brown (7.5YR 3/2) organic coatings in pores; 3-inch band of yellowish brown (10YR 5/6) silt loam starting at a depth of 73 inches; neutral; clear smooth boundary.

2C—76 to 80 inches; yellowish brown (10YR 5/4) fine sand; single grain; slightly acid.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of the diagnostic horizon: 45 to 80 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon(s):
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—3 to 6
Texture—silt loam or silty clay loam

2Bt or 2BC horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6

Texture—loamy sand, loamy fine sand, fine sand, sandy loam, loam, silt loam, or clay loam

2C horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—fine sand, sand, loamy sand, or loamy fine sand

684A—Broadwell silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Talfs and summits

Map Unit Composition

Broadwell and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that have less sand in the underlying material
- Soils that have a lighter colored surface soil
- Soils that have more sand in the surface soil and in the upper part of the subsoil

Dissimilar soils:
- The excessively drained Sparta soils in the more sloping positions
- The somewhat poorly drained Lawndale soils in the slightly lower positions

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

684B—Broadwell silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders (fig. 7)

Map Unit Composition

Broadwell and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent
- Soils that have less sand in the underlying material
- Soils that have a lighter colored surface soil
- Soils that have more sand in the surface soil and in the upper part of the subsoil
- Soils that have slopes of more than 5 percent

Dissimilar soils:
- The excessively drained Sparta soils in positions similar to those of the Broadwell soil
- The somewhat poorly drained Lawndale soils in the slightly lower positions

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

684C2—Broadwell silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 7)

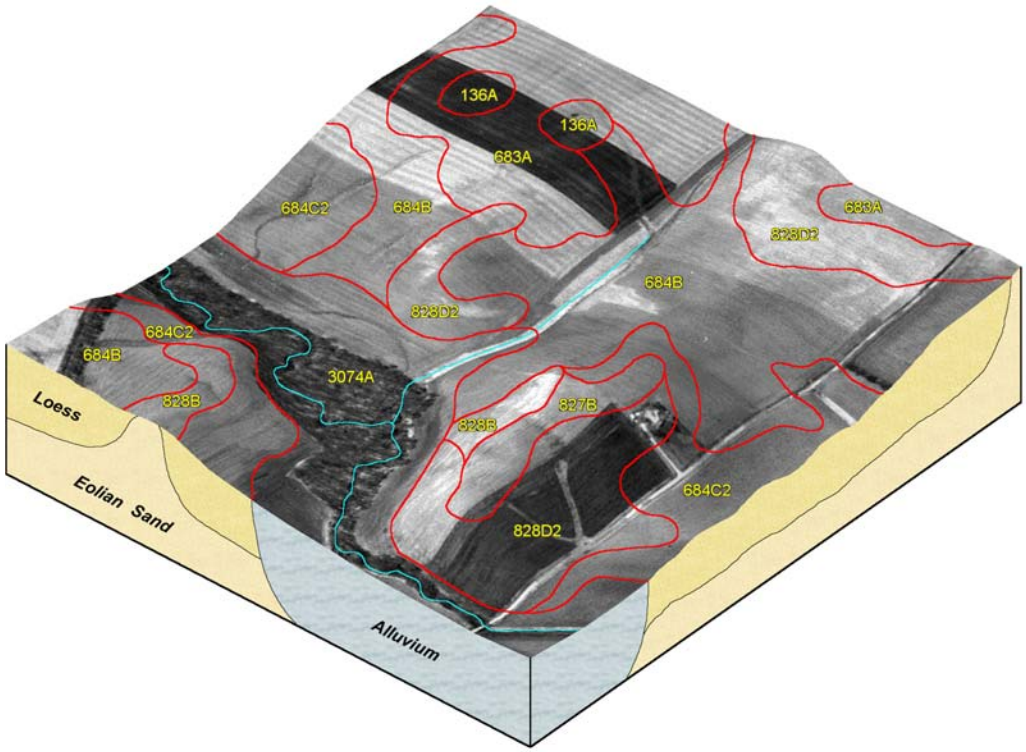


Figure 7.—Typical pattern of nearly level to strongly sloping upland soils that formed in loess or loamy eolian deposits and the underlying eolian sands, entirely in eolian sands, or in loess and the underlying outwash. Nearly level soils that formed in alluvium are along major streams.

Map Unit Composition

Broadwell and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 5 percent
- Soils that have a lighter colored surface soil
- Soils that have more sand in the surface soil and in the upper part of the subsoil

Dissimilar soils:
- The excessively drained Sparta soils in positions similar to those of the Broadwell soil
- The somewhat poorly drained Lawndale soils in the slightly lower positions

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface

Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

827B—Broadwell-Onarga complex, 2 to 5 percent slopes

Setting

Landform: Stream terraces; ground moraines
Position on the landform: Broadwell—shoulders and backslopes; Onarga—summits and shoulders (fig. 7)

Map Unit Composition

Broadwell and similar soils: 50 percent
Onarga and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have slopes of less than 2 percent
- Soils that have slopes of more than 5 percent

Dissimilar soils:
- The poorly drained Thorp soils in depressions
- The somewhat poorly drained Lawndale soils in the less sloping areas
- The excessively drained Sparta soils in positions similar to those of the Broadwell and Onarga soils

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Properties and Qualities of the Onarga Soil

Parent material: Loamy eolian deposits over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Broadwell—2e; Onarga—2e
Prime farmland category: Prime farmland
Hydric soil status: Broadwell—not hydric; Onarga—not hydric

827C2—Broadwell-Onarga complex, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces; ground moraines
Position on the landform: Broadwell—shoulders and backslopes; Onarga—summits and shoulders (fig. 8)

Map Unit Composition

Broadwell and similar soils: 45 percent
Onarga and similar soils: 35 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have slopes of less than 5 percent
- Soils that have slopes of more than 10 percent

Dissimilar soils:
- The poorly drained Thorp soils in depressions
- The somewhat poorly drained Lawndale soils in the less sloping areas
- The excessively drained Sparta soils in positions similar to those of the Broadwell and Onarga soils

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches

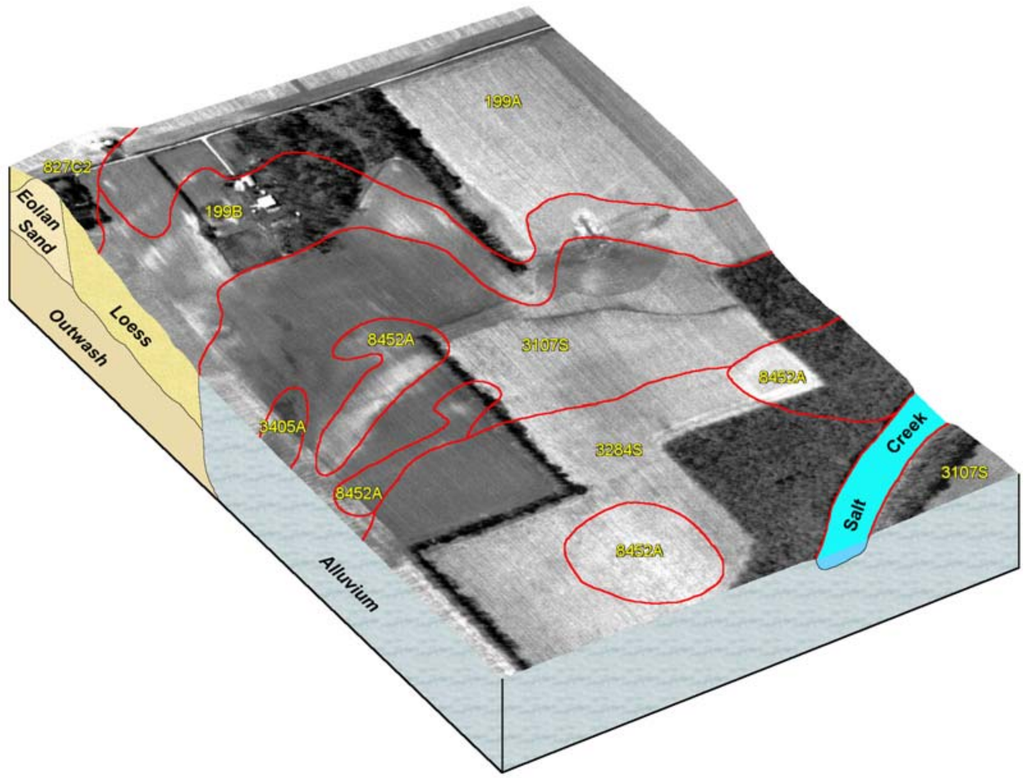


Figure 8.—Typical pattern of nearly level to moderately sloping soils on stream terraces. These soils formed in loess and the underlying outwash or in loess or loamy eolian deposits and the underlying eolian sands. Nearly level soils that formed in alluvium are along major streams.

Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Onarga Soil

Parent material: Loamy eolian deposits over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Broadwell—3e; Onarga—3e
Prime farmland category: Not prime farmland
Hydric soil status: Broadwell—not hydric; Onarga—not hydric

828B—Broadwell-Sparta complex, 1 to 7 percent slopes

Setting

Landform: Stream terraces; ground moraines
Position on the landform: Broadwell—shoulders and backslopes; Sparta—summits and shoulders (fig. 7)

Map Unit Composition

Broadwell and similar soils: 50 percent
Sparta and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have slopes of less than 1 percent
- Soils that have slopes of more than 7 percent

Dissimilar soils:
- The poorly drained Thorp soils in depressions
- The somewhat poorly drained Lawndale soils in the less sloping areas

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Sparta Soil

Parent material: Eolian sands
Drainage class: Excessively drained

Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Broadwell—2e; Sparta—4s
Prime farmland category: Prime farmland
Hydric soil status: Broadwell—not hydric; Sparta—not hydric

828D2—Broadwell-Sparta complex, 7 to 15 percent slopes, eroded

Setting

Landform: Ground moraines; stream terraces
Position on the landform: Broadwell—shoulders and backslopes; Sparta—summits and shoulders (fig. 7)

Map Unit Composition

Broadwell and similar soils: 50 percent
Sparta and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have slopes of less than 7 percent

Dissimilar soils:
- The poorly drained Thorp soils in depressions
- The somewhat poorly drained Lawndale soils in the less sloping areas

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sparta Soil

Parent material: Eolian sands
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Broadwell—3e; Sparta—6s
Prime farmland category: Not prime farmland
Hydric soil status: Broadwell—not hydric; Sparta—not hydric

Brooklyn Series

Taxonomic classification: Fine, smectitic, mesic Mollic Albaqualfs

Typical Pedon

Brooklyn silt loam, 0 to 2 percent slopes, at an elevation of about 679 feet; Douglas County, Illinois; about 200 feet east and 1,430 feet south of the northwest corner of sec. 8, T. 16 N., R. 14 W.; USGS Newman topographic quadrangle; lat. 39 degrees 51 minutes 40 seconds N. and long. 87 degrees 58 minutes 28.2 seconds W.; UTM zone 16, 416644E 4412800N, NAD 83:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; common medium rounded black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; neutral; abrupt smooth boundary.

Eg—9 to 14 inches; gray (2.5Y 6/1) silt loam; weak medium platy structure parting to moderate fine granular; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common medium rounded black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; neutral; abrupt smooth boundary.

Btg1—14 to 20 inches; light brownish gray (2.5Y 6/2) silty clay; moderate fine prismatic structure parting to moderate fine angular blocky; firm; many distinct dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium rounded black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; neutral; clear smooth boundary.

Btg2—20 to 31 inches; gray (2.5Y 6/1) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common distinct dark gray (2.5Y 4/1) clay films on faces of peds; many prominent black (N 2.5/) organo-clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium rounded black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; moderately acid; gradual smooth boundary.

Btg3—31 to 40 inches; gray (2.5Y 6/1) silty clay loam; moderate coarse prismatic structure parting to moderate coarse angular blocky; firm; common distinct dark gray (2.5Y 4/1) clay films on faces of peds; few prominent black (N 2.5/) organo-clay films lining pores and root channels; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium rounded black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; neutral; abrupt smooth boundary.

2Btg4—40 to 46 inches; gray (2.5Y 5/1) clay loam; weak coarse prismatic structure; firm; few distinct dark gray (2.5Y 4/1) clay films on faces of peds; few distinct black (2.5Y 2.5/1) organo-clay films lining pores and root channels; many medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; common medium rounded black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; 5 percent gravel; neutral; abrupt smooth boundary.

2Bt—46 to 52 inches; 40 percent strong brown (7.5YR 4/6), 40 percent dark brown (10YR 3/3), and 20 percent gray (2.5Y 5/1) gravelly clay loam; weak coarse subangular blocky structure; firm; few distinct dark gray (2.5Y 4/1) clay films on faces of peds; few distinct black (2.5Y 2.5/1) organo-clay films lining pores and root channels; common medium rounded black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; 20 percent gravel; neutral; abrupt smooth boundary.

2BCt—52 to 62 inches; 50 percent yellowish brown (10YR 5/6), 30 percent light yellowish brown (2.5Y 6/3), and 20 percent gray (2.5Y 6/1), stratified clay loam and silt loam; massive; firm; very few distinct black (2.5Y 2.5/1) and dark brown (7.5YR 3/2) organo-clay films lining pores and root channels; many medium rounded black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; 5 percent gravel; neutral; gradual smooth boundary.

2C—62 to 73 inches; 60 percent yellowish brown (10YR 5/6) and 40 percent gray (2.5Y 5/1) loam with thin strata of sandy loam; massive; firm; many medium irregular black (7.5YR 2.5/1) iron-manganese masses throughout; 7 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 72 inches
Thickness of the loess: 36 to 55 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Eg horizon(s):
Hue—2.5Y or 10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Btg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay or silty clay loam

2Btg, 2Bt, 2BCt, or 2BCtg horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 6
Chroma—1 to 8
Texture—clay loam, loam, silt loam, silty clay loam, sandy clay loam, or sandy loam or the gravelly analogs of these textures
Content of rock fragments—2 to 25 percent

2Cg or 2C horizon(s):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 to 8
Texture—clay loam, loam, silt loam, silty clay loam, sandy clay loam, or sandy loam or the gravelly analogs of these textures
Content of rock fragments—2 to 25 percent

136A—Brooklyn silt loam, 0 to 2 percent slopes

Setting

Landform: Depressions (fig. 7)

Map Unit Composition

Brooklyn and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker dark surface soil and have less clay in the subsoil
- Soils that have less clay in the subsoil and do not have a seasonal high water table within a depth of 1 foot

Dissimilar soils:
- The well drained Broadwell soils on summits and backslopes
- The well drained Plano and Onarga soils on summits and shoulders
- The excessively drained Sparta soils on summits and shoulders

Properties and Qualities of the Brooklyn Soil

Parent material: Loess over outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Buckhart Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Buckhart silt loam, 2 to 5 percent slopes, at an elevation of about 603 feet; Christian County, Illinois; approximately 360 feet west and 540 feet north of the southeast corner of sec. 24, T. 14 N., R. 3 W.; USGS Grove City, Illinois, topographic quadrangle; lat. 39 degrees 38 minutes 30 seconds N. and long. 89 degrees 22 minutes 25 seconds W.; UTM zone 16, 296316E 4390685N, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; few very fine roots; moderately acid; clear smooth boundary.
A—8 to 15 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure parting to moderate medium granular; friable; few very fine roots; moderately acid; clear smooth boundary.
Bt1—15 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure parting to moderate medium granular; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds and few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and pores; slightly acid; clear smooth boundary.
Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine irregular prominent strong brown (7.5YR 5/6) masses of iron and manganese accumulation along pores and few fine irregular prominent light brownish gray (2.5Y 6/2) iron depletions along pores; neutral; clear smooth boundary.
Bt3—37 to 52 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine irregular prominent strong brown (7.5YR 5/6) masses of iron accumulation along pores, few fine rounded prominent black (7.5YR 2/1) manganese nodules throughout, and common fine distinct irregular light brownish gray (2.5Y 6/2) iron depletions along pores; slightly acid; clear smooth boundary.
BCt—52 to 67 inches; light olive brown (2.5Y 5/3) silt loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films in root channels and pores; common fine irregular prominent strong brown (7.5YR 5/6) masses of iron accumulation along pores, common fine irregular light brownish gray (2.5Y 6/2) iron depletions along pores, and few fine rounded prominent black (7.5YR 2/1) manganese nodules throughout; neutral; gradual smooth boundary.
C—67 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common medium irregular distinct strong brown (7.5YR 5/6) masses of iron accumulation,

common medium irregular prominent light brownish gray (2.5Y 6/2) iron depletions, and few fine rounded prominent black (7.5YR 2/1) manganese nodules throughout; neutral.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 55 inches
Thickness of the mollic epipedon: 10 to 18 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam

Bt or Btg horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

BC, BCt, or BCg horizon(s):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 4
Texture—silt loam or silty clay loam

C or Cg horizon(s):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

705A—Buckhart silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines; knolls
Position on the landform: Summits

Map Unit Composition

Buckhart and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that have a seasonal high water table at a depth of less than 2 feet and have more clay in the subsoil
- Soils that have a seasonal high water table at a depth of more than 3.5 feet
- Soils that have a thinner dark surface soil

Properties and Qualities of the Buckhart Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

705B—Buckhart silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines; knolls
Position on the landform: Summits, shoulders, and backslopes (fig. 6)

Map Unit Composition

Buckhart and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 3.5 feet
- Soils that have a seasonal high water table at a depth of less than 2 feet and have more clay in the subsoil
- Soils that have a thinner dark surface soil, have a seasonal high water table at a depth of less than 2 feet, and have more clay in the subsoil
- Soils that have a thinner dark surface soil
- Soils that have a lighter colored surface soil

Dissimilar soils:
- The well drained Bold, Elkhart, and Tallula soils on the lower backslopes

Properties and Qualities of the Buckhart Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Camden Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Camden silt loam, 0 to 2 percent slopes, at an elevation of about 560 feet; Bureau County, Illinois; about 1,280 feet west and 1,740 feet south of the northeast corner of sec. 12, T. 15 N., R. 8 E.; USGS Wyanet topographic quadrangle; lat. 41 degrees 18 minutes 05 seconds N. and long. 89 degrees 30 minutes 52 seconds W.; UTM zone 16, 289481E 4575269N, NAD 83:

Ap—0 to 7 inches; dark brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; few fine roots; slightly acid; abrupt smooth boundary.

E—7 to 12 inches; yellowish brown (10YR 5/4) silt loam; weak medium platy structure parting to weak very fine subangular blocky; friable; few fine roots; neutral; clear smooth boundary.

Bt1—12 to 18 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; common distinct yellowish brown (10YR 5/4) clay films on faces of peds; neutral; clear smooth boundary.

Bt2—18 to 26 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt3—26 to 34 inches; yellowish brown (10YR 5/6) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt4—34 to 37 inches; strong brown (7.5YR 5/6) clay loam; weak medium subangular blocky structure; friable; few fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; about 7 percent gravel; slightly acid; clear smooth boundary.

2Bt5—37 to 48 inches; strong brown (7.5YR 5/6) sandy clay loam; 1-inch strata of yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common distinct brown (7.5YR 4/4) clay films on faces of peds; about 5 percent gravel; slightly acid; clear smooth boundary.

2Bt6—48 to 53 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common distinct brown (7.5YR 4/4) clay films bridging sand grains; about 2 percent gravel; neutral; clear wavy boundary.

2C—53 to 60 inches; brown (7.5YR 4/4) sandy loam that has thin strata of loamy sand; single grain; loose; about 5 percent gravel; neutral.

Range in Characteristics

Thickness of the loess: 24 to 40 inches
Depth to the base of the diagnostic horizon: 30 to 65 inches

Ap horizon(s):
Hue—10YR

Value—3 to 5; value of 3 in horizons less than 6 inches thick
Chroma—2 or 3
Texture—silt loam

E horizon(s):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam

Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt or 2BC horizon(s):
Hue—10YR, 7.5YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam, clay loam, loam, sandy loam, sandy clay loam, or silt loam

2C horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified sandy loam, loam, silt loam, loamy sand, sandy clay loam, and clay loam

134C2—Camden silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

Camden and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have sandy material at a depth of more than 40 inches

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Camden Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent

Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Clarksdale Series

Taxonomic classification: Fine, smectitic, mesic Udollic Endoaqualfs

Typical Pedon

Clarksdale silt loam, 0 to 2 percent slopes, at an elevation of 650 feet; Adams County, Illinois; 800 feet south and 550 feet east of the northwest corner of sec. 16, T. 2 N., R. 7 W.; USGS Loraine, Illinois, topographic quadrangle; lat. 40 degrees 09 minutes 58 seconds N. and long. 91 degrees 13 minutes 17 seconds W.; UTM zone 15, 651445E 4447716N, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots throughout; neutral; abrupt smooth boundary.

E—8 to 12 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium platy structure parting to weak very fine subangular blocky; friable; common very fine and fine roots throughout; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores and many fine distinct light gray (10YR 7/1 and 7/2) clay depletions between peds; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation lining root channels and pores; few fine faint black (2.5Y 2/1) masses of manganese accumulation throughout; neutral; clear smooth boundary.

BE—12 to 16 inches; grayish brown (10YR 5/2) silt loam; moderate fine subangular blocky structure; friable; few fine roots throughout; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores and common fine faint light gray (10YR 7/1) clay depletions between peds; few fine prominent black (2.5Y 2/1) masses of manganese accumulation and common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

Bt1—16 to 23 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine and fine roots throughout; many faint dark grayish brown (10YR 4/2) clay films on faces of peds and many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine prominent black (2.5Y 2/1) masses of manganese accumulation and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

Bt2—23 to 31 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots throughout; many faint grayish brown (10YR 5/2) clay films on faces of peds and many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; many fine distinct yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation and common fine prominent black (2.5Y 2/1) masses of manganese accumulation throughout; common fine faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; gradual wavy boundary.

Btg1—31 to 47 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; few fine roots throughout; common distinct grayish brown (10YR 5/2) clay films on faces of peds and many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; many fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and few fine prominent black (2.5Y 2/1) masses of manganese accumulation throughout; few fine faint light brownish gray (10YR 6/2) iron depletions lining root channels and pores; neutral; gradual wavy boundary.

Btg2—47 to 57 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; firm; few fine roots throughout; common distinct dark grayish brown (10YR 4/2) clay films in root channels and pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and few fine prominent black (2.5Y 2/1) masses of manganese accumulation throughout; neutral; clear wavy boundary.

BCg—57 to 67 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse subangular blocky structure; firm; common prominent dark grayish brown (10YR 4/2) clay films in root channels and pores; common medium prominent strong brown (7.5YR 5/6) and yellowish red (5YR 5/6) masses of iron accumulation throughout; neutral; clear wavy boundary.

Cg—67 to 80 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; few distinct dark grayish brown (10YR 4/2) clay films in root channels and pores; many medium prominent yellowish red (5YR 4/6) and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; neutral.

Range in Characteristics

Depth to carbonates: More than 40 inches
Depth to the base of the diagnostic horizon: 40 to 60 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E or BE horizon(s):
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam, silty clay, or silt loam

C or Cg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6

Chroma—1 to 6
Texture—silt loam

257A—Clarksdale silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Talfs and summits (fig. 4)

Map Unit Composition

Clarksdale and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have a darker subsurface layer
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The well drained Greenbush and Rozetta soils on the slightly higher summits and shoulders
- The well drained Bold and Sylvan soils on shoulders and backslopes
- The poorly drained Denny and Sable soils in depressions

Properties and Qualities of the Clarksdale Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: 0.5 foot to 2.0 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Dakota Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Dakota loam, 0 to 2 percent slopes, at an elevation of about 526 feet; Woodford County, Illinois; about 2,463 feet north and 510 feet east of the southwest corner of sec. 25, T. 27 N., R. 4 W.; USGS Spring Bay, Illinois, topographic quadrangle; lat. 40 degrees 46 minutes 09 seconds N. and long. 89 degrees 31 minutes 10 seconds W.; UTM zone 16, 287363E 4516187N, NAD 83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few fine roots; moderately acid; clear smooth boundary.

AB—9 to 14 inches; very dark grayish brown (10YR 3/2) loam, brown (10YR 5/2) dry; weak fine granular structure; friable; few very fine roots; moderately acid; gradual smooth boundary.

Bt1—14 to 21 inches; dark yellowish brown (10YR 4/4) loam; weak fine subangular blocky structure; very friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; moderately acid; gradual smooth boundary.

Bt2—21 to 31 inches; brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; very friable; few very fine roots; few distinct dark yellowish brown (10YR 3/4) clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt3—31 to 34 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; sand grains bridged by clay in many places; few very fine roots; moderately acid; gradual smooth boundary.

2C—34 to 60 inches; brown (7.5YR 4/4) loamy sand; single grain; loose; few very fine roots; 2 percent gravel; moderately acid.

Range in Characteristics

Depth to sandy material: 20 to 40 inches
Thickness of the mollic epipedon: 10 to 18 inches

Ap or AB horizon(s):
Hue—10YR
Value—2 or 3
Chroma—2 or 3
Texture—fine sandy loam or loam
Content of rock fragments—0 to 15 percent

Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture—sandy clay loam, loam, sandy loam, or clay loam
Content of rock fragments—0 to 15 percent

2Bt or 2BC horizon(s) (where present):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture—loamy sand, loamy coarse sand, sand, or coarse sand or the gravelly analogs of these textures
Content of rock fragments—0 to 35 percent

2C horizon(s):
Hue—10YR or 7.5YR

Value—4 to 7
Chroma—2 to 6
Texture—loamy sand, sand, or coarse sand or the gravelly analogs of these textures
Content of rock fragments—0 to 35 percent

379A—Dakota loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Talfs and summits

Map Unit Composition

Dakota and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the surface layer and in the upper part of the subsoil
- Soils that have less sand and more clay in the surface soil and in the upper part of the subsoil

Dissimilar soils:
- The somewhat excessively drained Bloomfield soils on the higher summits and shoulders
- The well drained Princeton soils on the higher shoulders and backslopes
- The well drained Worthen soils in the lower positions that are subject to rare flooding

Properties and Qualities of the Dakota Soil

Parent material: Loamy sediments over sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 5.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Denny Series

Taxonomic classification: Fine, smectitic, mesic Mollic Albaqualfs

Typical Pedon

Denny silt loam, 0 to 2 percent slopes, at an elevation of 720 feet; McDonough County, Illinois; 225 feet north and 1,680 feet east of the southwest corner of sec. 25, T. 7 N., R. 3 W.; USGS Good Hope, Illinois, topographic quadrangle; lat. 40 degrees 33 minutes 31 seconds N. and long. 90 degrees 41 minutes 15 seconds W.; UTM zone 15, 695797E 4492335N, NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; very friable; few very fine roots throughout; moderately acid; abrupt smooth boundary.

Eg1—8 to 14 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak thin platy; very friable; few very fine roots throughout; few distinct very dark gray (10YR 3/1) organic coatings in root channels; common faint grayish brown (10YR 5/2) clay depletions on faces of peds; common fine prominent dark yellowish brown (10YR 3/6) masses of iron and manganese accumulation throughout; few fine black (N 2/) manganese concretions in the matrix; moderately acid; clear smooth boundary.

Eg2—14 to 21 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak thick platy structure parting to moderate medium platy; friable; few very fine roots throughout; few distinct very dark gray (10YR 3/1) organic coatings in root channels; common fine faint dark brown (10YR 3/3) masses of iron and manganese accumulation throughout; common fine black (N 2/) manganese concretions in the matrix; moderately acid; abrupt smooth boundary.

Btg1—21 to 29 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots between peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine distinct yellowish brown (10YR 5/4) masses of iron and manganese accumulation throughout; common fine black (N 2/) manganese concretions in the matrix; moderately acid; clear smooth boundary.

Btg2—29 to 38 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots between peds; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) masses of iron and manganese and common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout; common fine black (N 2/) manganese concretions in the matrix; moderately acid; gradual smooth boundary.

Btg3—38 to 46 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; very few fine roots between peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) masses of iron and manganese and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; common fine black (N 2/) manganese concretions in the matrix; moderately acid; gradual wavy boundary.

Cg1—46 to 63 inches; light brownish gray (2.5Y 6/2) silty clay loam; massive; firm; few very fine roots between peds; very few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) masses of iron and manganese and common fine prominent strong brown (7.5YR

5/6) masses of iron accumulation throughout; few medium black (N 2/) manganese concretions in the matrix; slightly acid; diffuse wavy boundary.

Cg2—63 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; firm; very few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) masses of iron and manganese and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; few medium black (N 2/) manganese concretions in the matrix; slightly acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 65 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Eg horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay

Cg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silty clay loam

45A—Denny silt loam, 0 to 2 percent slopes

Setting

Landform: Depressions

Map Unit Composition

Denny and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker dark surface soil and have less clay in the surface soil and in the upper part of the subsoil
- Soils that have a thicker dark surface soil and have a seasonal high water table at a depth of more than 1 foot
- Soils that have a lighter colored surface layer and a seasonal high water table at a depth of more than 1 foot
- Soils that have a seasonal high water table at a depth of more than 1 foot

Dissimilar soils:
- The well drained Greenbush and Rozetta soils on summits

Properties and Qualities of the Denny Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 1 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Drummer Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Drummer silty clay loam, 0 to 2 percent slopes, at an elevation of about 715 feet; Champaign County, Illinois; about 300 feet north and 1,600 feet east of the southwest corner of sec. 19, T. 19 N., R. 9 E.; USGS Urbana topographic quadrangle; lat. 40 degrees 05 minutes 04 seconds N. and long. 88 degrees 13 minutes 58 seconds W.; UTM zone 16, 394896E 4437648N, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; firm; many fine roots; moderately acid; clear smooth boundary.

A—7 to 14 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure parting to weak fine granular; firm; many fine and medium roots; slightly acid; clear smooth boundary.

BA—14 to 19 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium subangular blocky structure; firm; many fine and medium roots; few fine faint very dark grayish brown (2.5Y 3/2) masses of iron and manganese accumulation in the matrix; slightly acid; gradual smooth boundary.

Bg—19 to 25 inches; dark gray (10YR 4/1) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; many fine roots; common fine distinct and prominent yellowish brown (10YR 5/4) masses of iron and manganese accumulation and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many worm holes; neutral; gradual smooth boundary.

Btg1—25 to 32 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine and medium prismatic structure parting to moderate fine angular blocky; firm; many fine roots;

common distinct dark gray (N 4/) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/4) masses of iron and manganese accumulation in the matrix; neutral; gradual wavy boundary.

Btg2—32 to 41 inches; gray (N 5/) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few fine roots; few distinct dark gray (N 4/) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) masses of iron and manganese accumulation in the matrix; neutral; clear wavy boundary.

2Btg3—41 to 47 inches; gray (N 5/) loam; weak coarse subangular blocky structure; friable; few fine roots; few distinct dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 4 percent fine gravel; neutral; abrupt wavy boundary.

2Cg—47 to 60 inches; dark gray (10YR 4/1), stratified loam and sandy loam; massive; friable; many medium prominent olive brown (2.5Y 4/4) masses of iron and manganese accumulation in the matrix; many medium faint gray (N 5/) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: 40 to 65 inches
Depth to the base of the diagnostic horizon: 42 to 65 inches

Ap, A, or AB horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam

BA, Bg, or Btg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 4
Texture—silty clay loam or silt loam

2Btg, 2Bg, or 2BCg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—commonly loam or silt loam; stratified with sandy loam, clay loam, silty clay loam, sandy clay loam, or fine sandy loam in some pedons

2Cg or 2C horizon(s):
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—4 to 7
Chroma—0 to 8
Texture—stratified loam, sandy loam, sandy clay loam, clay loam, silt loam, and silty clay loam or thin strata of loamy sand

152A—Drummer silty clay loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Talfs and toeslopes

Map Unit Composition

Drummer and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 1 foot
- Soils that have a light-colored subsurface layer

Dissimilar soils:
- The well drained Broadwell soils on summits and backslopes
- The well drained Onarga and Plano soils on summits and shoulders
- The excessively drained Sparta soils on summits and shoulders

Properties and Qualities of the Drummer Soil

Parent material: Loess over outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

835G—Earthen dam

- This map unit consists of relatively large earthen embankments that are designed to retain water.

Map Unit Composition

Earthen dam: 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Dissimilar components:
- The well drained Bold, Sylvan, and Hickory soils in undisturbed areas

Interpretive Groups

Land capability classification: None assigned

Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Elburn Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Elburn silt loam, 0 to 2 percent slopes, at an elevation of about 617 feet; Christian County, Illinois; about 2,716 feet north and 1,300 feet west of the southeast corner of sec. 36, T. 14 N., R. 1 E.; USGS Assumption, Illinois, topographic quadrangle; lat. 39 degrees 37 minutes 05 seconds N. and long. 89 degrees 01 minute 46 seconds W.; UTM zone 16, 325797E 4387329N, NAD 83:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A—6 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation and few fine faint brown (10YR 5/3) masses of iron and manganese accumulation in the matrix; few fine prominent iron and manganese concretions throughout; slightly acid; clear smooth boundary.

Bt2—21 to 28 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine prominent iron and manganese concretions throughout; neutral; clear smooth boundary.

Bt3—28 to 36 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine prominent iron and manganese concretions throughout; neutral; clear smooth boundary.

Bt4—36 to 43 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; few prominent very dark gray (10YR 3/1) organo-clay films and few distinct brown (10YR 5/3) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; few fine prominent iron and manganese concretions throughout; slightly alkaline; clear smooth boundary.

Btg—43 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine prominent iron and manganese concretions throughout; slightly alkaline; clear smooth boundary.

2BCtg—49 to 58 inches; grayish brown (2.5Y 5/2), stratified silt loam, loam, and sandy loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films lining pores; common medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few very fine iron and manganese concretions throughout; slightly alkaline; clear smooth boundary.

2Cg—58 to 62 inches; grayish brown (2.5Y 5/2), stratified sandy loam and loamy sand; massive; very friable; common medium prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 19 inches
Depth to the base of the diagnostic horizon: 40 to 70 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

2Btg, 2Bt, 2Bg, 2BC, 2BCtg, or 2BCg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 8
Texture—sandy loam, loam, or silt loam; thin strata of clay loam or silty clay loam

2C or 2Cg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 8
Texture—sandy loam, loam, loamy sand, sand, or silt loam

198A—Elburn silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Talfs and summits

Map Unit Composition

Elburn and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the underlying material

Dissimilar soils:
- The well drained Broadwell and Plano soils on the higher summits and shoulders
- The poorly drained Drummer and Thorp soils in depressions

Properties and Qualities of the Elburn Soil

Parent material: Loess over outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Elco Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Elco silt loam, 10 to 18 percent slopes, at an elevation of about 575 feet; Sangamon County, Illinois; 2,520 feet east and 2,200 feet south of the northwest corner of sec. 35, T. 15 N., R. 4 W.; USGS New City, Illinois, topographic quadrangle; lat. 39 degrees 42 minutes 26 seconds N. and long. 89 degrees 30 minutes 27 seconds W.; UTM zone 16, 285029E 4398275N, NAD 83:

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; strong very fine granular structure; friable; many roots throughout; slightly acid; clear smooth boundary.

E—4 to 12 inches; brown (10YR 4/3) silt loam; weak thin platy structure parting to moderate very fine granular; friable; many distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and lining pores; few distinct yellowish brown (10YR 5/4) flecks and fragments of subsoil material; slightly acid; clear smooth boundary.

BE—12 to 15 inches; yellowish brown (10YR 5/4) silt loam; moderate very fine and fine subangular blocky structure; friable; few distinct dark brown (10YR 3/3) organic coatings and very few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; few fine prominent black (5YR 2.5/1) manganese concretions throughout; slightly acid; clear smooth boundary.

Bt—15 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; many faint brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine distinct grayish brown (10YR 5/2) iron depletions along micropores; few fine prominent black (5YR 2.5/1) manganese concretions throughout; slightly acid; clear smooth boundary.

2Btg1—26 to 39 inches; grayish brown (2.5Y 5/2) and yellowish brown (10YR 5/6) silty clay loam; moderate medium and coarse subangular and angular blocky structure; firm; common distinct olive brown (2.5Y 4/4) and brown (10YR 4/3) clay films on faces of peds; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common very fine prominent black (5YR 2.5/1) manganese concretions throughout; slightly acid; gradual smooth boundary.

3Btg2—39 to 55 inches; grayish brown (2.5Y 5/2) and yellowish brown (10YR 5/6) silty clay; weak medium prismatic structure parting to moderate coarse subangular and angular blocky; firm; many distinct gray (5Y 5/1) clay films on faces of peds; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine black (5YR 2.5/1) manganese concretions throughout; slightly acid; clear smooth boundary.

3Btg3—55 to 70 inches; grayish brown (2.5Y 5/2) silty clay; moderate fine and medium subangular and angular blocky structure; friable; common distinct gray (5Y 5/1) clay films on faces of peds and in pores; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine black (5YR 2.5/1) manganese concretions throughout; slightly acid; clear smooth boundary.

3Btg4—70 to 80 inches; gray (5Y 5/1) silty clay; moderate coarse subangular blocky structure; firm; common prominent greenish gray (5GY 5/1) clay films on faces of peds; few prominent black (10YR 2/1) organic coatings in root channels and pores; many fine prominent strong brown (7.5YR 4/6) masses of iron and manganese accumulation in the matrix; few fine black (5YR 2.5/1) manganese concretions throughout; slightly alkaline.

Range in Characteristics

Depth to the base of the diagnostic horizon: More than 48 inches
Thickness of the loess: 20 to 40 inches

Ap or A horizon(s):
Hue—10YR
Value—3 or 4
Chroma—1 or 2
Texture—silt loam or silty clay loam

E horizon(s) (where present):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam

BE horizon(s) (where present):
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam

Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—2 to 6
Texture—silty clay loam or silt loam

2Btg horizon(s) or 2Bt horizon(s) (where present):
Hue—5Y, 2.5Y, 10YR, or 7.5YR
Value—3 to 6
Chroma—1 to 6
Texture—loam, clay loam, silty clay loam, or silt loam

3Btg horizon(s) or 3Bt horizon(s) (where present):
Hue—5Y, 2.5Y, 10YR, or 7.5YR
Value—3 to 6
Chroma—1 to 6
Texture—loam, clay loam, silty clay loam, silty clay, or clay

119D—Elco silt loam, 10 to 18 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Elco and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the lower part of the subsoil
- Soils that have more sand in the upper part of the subsoil
- Soils that have more clay in the surface layer
- Soils that have more clay in the upper part of the subsoil

Properties and Qualities of the Elco Soil

Parent material: Loess over paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

119D2—Elco silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Elco and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the lower part of the subsoil
- Soils that have more sand in the upper part of the subsoil
- Soils that have more clay in the surface layer
- Soils that have more clay in the upper part of the subsoil

Dissimilar soils:
- The well drained Thebes soils in positions similar to those of the Elco soil

Properties and Qualities of the Elco Soil

Parent material: Loess over paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: High
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

119D3—Elco silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Elco and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the lower part of the subsoil
- Soils that have more sand in the upper part of the subsoil
- Soils that have less clay in the surface layer
- Soils that have more clay in the upper part of the subsoil

Properties and Qualities of the Elco Soil

Parent material: Loess over paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.0 to 1.0 percent
Shrink-swell potential: High
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Elkhart Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Elkhart soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Hapludalfs.

Typical Pedon

Elkhart silt loam, 10 to 18 percent slopes, at an elevation of about 810 feet; Mercer County, Illinois; approximately 80 feet east and 1,000 feet south of the northwest corner of sec. 6, T. 15 N., R. 2 W.; USGS Reynolds, Illinois, topographic quadrangle; lat. 41 degrees 19 minutes 34 seconds N. and long. 90 degrees 40 minutes 03 seconds W.; UTM zone 15, 695204E 4577584N, NAD 83:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; moderately acid; abrupt smooth boundary.
Bt1—10 to 14 inches; brown (10YR 4/3) silty clay loam; some mixing of very dark grayish brown (10YR 3/2) organic coatings; weak medium subangular blocky

structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—14 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the lower part; slightly acid; clear smooth boundary.

BCt—24 to 29 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and common medium distinct grayish brown (2.5Y 5/2) iron depletions; slightly effervescent; slightly alkaline; clear wavy boundary.

C—29 to 60 inches; light olive gray (5Y 6/2) silt loam; massive; friable; common coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation; strongly effervescent; moderately alkaline.

Range in Characteristics:

Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of the diagnostic horizon: 20 to 40 inches
Depth to carbonates: 20 to 40 inches

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam

BA or Bt horizon(s):
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

BC or BCt horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silt loam or silty clay loam

C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam

567C2—Elkhart silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Elkhart and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have less clay in the subsoil
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a lighter colored surface layer

Dissimilar soils:
- The somewhat poorly drained Clarksdale and Ipava soils on summits
- The well drained Bold soils in positions similar to those of the Elkhart soil
- The moderately well drained Buckhart soils on summits

Properties and Qualities of the Elkhart Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Fayette Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fayette silt loam, 10 to 18 percent slopes, eroded, at an elevation of 685 feet; Warren County, Illinois; 2,100 feet north and 1,700 feet west of the southeast corner of sec. 31, T. 12 N., R. 3 W.; USGS Rozetta, Illinois, topographic quadrangle; lat. 40 degrees 59 minutes 13 seconds N. and long. 90 degrees 46 minutes 18 seconds W.; UTM zone 15, 687438E 4539703N, NAD 83:

Ap—0 to 5 inches; mixed dark grayish brown (10YR 4/2) and yellowish brown (10YR 5/4) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common fine roots throughout; moderately acid; clear smooth boundary.

EB—5 to 9 inches; mixed brown (10YR 5/3) and yellowish brown (10YR 5/4) silt loam; weak medium platy structure parting to moderate fine subangular blocky; friable;

common fine roots between peds; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; few fine roots between peds; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—13 to 27 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots between peds; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt3—27 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few distinct dark brown (7.5YR 3/2) masses of iron and manganese accumulation on faces of peds; moderately acid; gradual wavy boundary.

BC—38 to 55 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and coarse subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few distinct dark brown (7.5YR 3/2) masses of iron and manganese accumulation on faces of peds; moderately acid; clear wavy boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few distinct dark brown (7.5YR 3/2) iron and manganese concretions in the matrix; moderately acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 36 to 70 inches
Depth to carbonates (if they occur): More than 40 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 4
Chroma—1 to 3
Texture—silt loam or silty clay loam

E, EB, or BE horizon(s) (where present):
Hue—10YR
Value—4 or 5
Chroma—1 to 4
Texture—silt loam

Bt horizon(s):
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

C horizon(s):
Hue—10YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam

280C2—Fayette silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Fayette and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 40 inches
- Soils that have slopes of less than 5 percent
- Soils that have slopes of less than 5 percent and have a seasonal high water table at a depth of less than 6 feet
- Soils that have a darker surface layer
- Soils that have more clay in the surface layer

Dissimilar soils:
- The well drained Hickory and Bold soils on the lower backslopes
- The somewhat poorly drained Keomah soils in the less sloping areas

Properties and Qualities of the Fayette Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Greenbush Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Greenbush silt loam, 2 to 5 percent slopes, at an elevation of 700 feet; Warren County, Illinois; 1,500 feet west and 1,500 feet north of the southeast corner of sec. 18, T. 8 N., R. 1 W.; USGS Greenbush, Illinois, topographic quadrangle; lat. 40 degrees 40 minutes

40 seconds N. and long. 90 degrees 32 minutes 47 seconds W.; UTM zone 15, 707400E 4505889N, NAD 83:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

E—6 to 10 inches; dark grayish brown (10YR 4/2) silt loam; weak thin platy structure; friable; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; moderately acid; abrupt smooth boundary.

BE—10 to 17 inches; brown (10YR 4/3) silt loam; moderate medium platy structure parting to weak fine subangular blocky; friable; few distinct very dark gray (10YR 3/1) organic coatings and common distinct gray (10YR 6/1) silt coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—17 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct gray (10YR 6/1) silt coatings on faces of peds; strongly acid; gradual smooth boundary.

Bt2—29 to 38 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown (10YR 4/3) clay films on faces of peds; many faint light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; common medium prominent gray (5Y 6/1) iron depletions within peds; common prominent black (7.5YR 2/1) manganese oxide stains; strongly acid; gradual wavy boundary.

Bt3—38 to 53 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown (10YR 4/3) clay films on faces of peds; many distinct light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; common medium prominent gray (5Y 6/1) iron depletions within peds; common prominent black (7.5YR 2/1) manganese oxide stains; strongly acid; gradual wavy boundary.

BCt—53 to 75 inches; brown (10YR 5/3) and light olive gray (5Y 6/2) silt loam; weak medium and coarse prismatic structure parting to weak fine and medium angular blocky; friable; few faint brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; common prominent black (7.5YR 2/1) manganese oxide stains; moderately acid; gradual wavy boundary.

C—75 to 100 inches; yellowish brown (10YR 5/4) and light olive gray (5Y 6/2) silt loam; massive; friable; many medium distinct light brownish gray (10YR 6/2) iron depletions; many prominent black (7.5YR 2/1) manganese oxide stains; moderately acid.

Range in Characteristics

Depth to carbonates: More than 60 inches
Depth to the base of the diagnostic horizon: 36 to 70 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—3 to 5

Chroma—2 or 3
Texture—silt loam

Bt horizon(s):
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam

C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

675B—Greenbush silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

Greenbush and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have a thicker dark surface soil
- Soils that have a seasonal high water table at a depth of less than 4 feet and have a thicker dark surface soil
- Soils that have carbonates at a depth of less than 60 inches and have a lighter colored surface layer

Dissimilar soils:
- The somewhat poorly drained Clarksdale, Ipava, and Keomah soils in the less sloping areas
- The well drained Bold soils on backslopes

Properties and Qualities of the Greenbush Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Hamburg Series

Taxonomic classification: Coarse-silty, mixed, superactive, calcareous, mesic Typic Udorthents

Typical Pedon

Hamburg silt loam, 35 to 60 percent slopes, at an elevation of 620 feet; Cass County, Illinois; 450 feet north and 810 feet west of the center of sec. 5, T. 18 N., R. 9 W.; USGS Chandlerville, Illinois, topographic quadrangle; lat. 40 degrees 02 minutes 28 seconds N. and long. 90 degrees 08 minutes 16 seconds W.; UTM zone 15, 744179E 4436251N, NAD 83:

A—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and medium granular structure; friable; common very fine roots throughout; strongly effervescent; moderately alkaline; abrupt smooth boundary.
C1—7 to 11 inches; brown (10YR 4/3) silt loam; massive; friable; common very fine roots throughout; violently effervescent; moderately alkaline; clear smooth boundary.
C2—11 to 39 inches; yellowish brown (10YR 5/4) silt; massive; friable; few very fine roots throughout; violently effervescent; moderately alkaline; gradual smooth boundary.
C3—39 to 60 inches; light yellowish brown (10YR 6/4) silt; massive; friable; few very fine roots throughout; violently effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: Less than 6 inches
Other features: Some pedons have an AC horizon.

A horizon(s):
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam

C horizon(s):
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—silt loam, silt, or very fine sandy loam

30G—Hamburg silt loam, 35 to 60 percent slopes

Setting

Landform: Loess bluffs
Position on the landform: Backslopes

Map Unit Composition

Hamburg and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the upper part of the profile

Dissimilar soils:
- The well drained Middletown soils in the less sloping positions
- The well drained Princeton and Sylvan soils and the somewhat excessively drained Bloomfield soils in positions similar to those of the Hamburg soil

Properties and Qualities of the Hamburg Soil

Parent material: Calcareous loess
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Harpster Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Calciaquolls

Typical Pedon

Harpster silty clay loam, 0 to 2 percent slopes, at an elevation of about 740 feet; Ford County, Illinois; about 855 feet south and 70 feet west of the northeast corner of sec. 20, T. 23 N., R. 7 E.; USGS Gibson City West, Illinois, topographic quadrangle; lat. 40 degrees 26 minutes 24 seconds N. and long. 88 degrees 25 minutes 23 seconds W.; UTM zone 16, 379305E 4477571N, NAD 83:

Apk—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; many snail shells; strongly effervescent (20 percent calcium carbonate); moderately alkaline; abrupt smooth boundary.

Ak—9 to 18 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine and medium granular structure; firm; common very fine roots; many snail shells; strongly effervescent (18 percent calcium carbonate); moderately alkaline; clear smooth boundary.

Bg1—18 to 25 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium angular blocky structure; firm; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine distinct light olive brown (2.5Y 5/4) masses of iron and manganese accumulation in the matrix; few snail shells; slightly effervescent (7 percent calcium carbonate); moderately alkaline; gradual smooth boundary.

Bg2—25 to 31 inches; dark gray (5Y 4/1) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent dark yellowish brown (10YR 4/4) and few fine distinct olive (5Y 4/4) masses of iron and manganese accumulation in the matrix; few snail shells; slightly effervescent (5 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Bg3—31 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak coarse prismatic structure parting to weak medium angular blocky; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium distinct olive (5Y 4/4) masses of iron and manganese accumulation and few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 2 percent gravel; slightly effervescent (2 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Bg4—36 to 41 inches; 40 percent olive brown (2.5Y 4/4), 35 percent olive yellow (2.5Y 6/6), and 25 percent gray (5Y 5/1) silty clay loam; weak coarse angular blocky structure; firm; few very fine roots; 2 percent gravel; slightly effervescent (2 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Cg1—41 to 56 inches; 55 percent gray (5Y 5/1), 40 percent light olive brown (2.5Y 5/6), and 5 percent dark yellowish brown (10YR 4/4) silt loam; massive; firm; 1 percent gravel; strongly effervescent (16 percent calcium carbonate); moderately alkaline; clear smooth boundary.

Cg2—56 to 60 inches; gray (10YR 5/1) loam; massive; friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess or silty sediments: More than 36 inches
Depth to the base of the diagnostic horizon: 22 to 46 inches
Depth to calcic horizon: 0 to 16 inches

Apk or Ak horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 or 1
Texture—silty clay loam

Bg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam, silt loam, clay loam, or loam

Cg or 2Cg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam or loam

67A—Harpster silty clay loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Talfs and toeslopes

Map Unit Composition

Harpster and similar soils: 95 percent
Dissimilar soils: 5 percent

Dissimilar soils:
- The poorly drained Drummer soils in positions similar to those of the Harpster soil
- The somewhat poorly drained Elburn and Lawndale soils in the slightly higher positions

Properties and Qualities of the Harpster Soil

Parent material: Calcareous loess over drift
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Hartsburg Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Hartsburg silty clay loam, 0 to 2 percent slopes, at an elevation of 562 feet; Logan County, Illinois; 660 feet west and 40 feet north of the southeast corner of sec. 23, T. 21 N., R. 4 W.; USGS New Holland, Illinois, topographic quadrangle; lat. 40 degrees 14 minutes 57 seconds N. and long. 89 degrees 30 minutes 30 seconds W.; UTM zone 16, 286650E 4458436N, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; slightly acid; abrupt smooth boundary.

A1—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A2—12 to 17 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; firm; few very fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries along root channels and pores; few fine faint dark grayish brown (2.5Y 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg—17 to 21 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common very dark gray (10YR 3/1) krotovinas; few fine rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bkg—21 to 30 inches; gray (5Y 5/1) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct dark grayish brown (10YR 4/2) and grayish brown (2.5Y 5/2) pressure faces on faces of peds; common very dark gray (10YR 3/1) krotovinas; few fine rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine and medium rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; common medium prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline; abrupt wavy boundary.

BCkg—30 to 34 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak coarse subangular blocky structure; firm; many distinct gray (N 5/) and grayish brown (2.5Y 5/2) linings in pores and root channels; common very dark gray (10YR 3/1) krotovinas; few fine rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining pores; many medium and coarse rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; violently effervescent among concretions and slightly effervescent in the matrix; slightly alkaline; clear wavy boundary.

Cg—34 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; common very dark gray (10YR 3/1) krotovinas; few medium rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation with diffuse boundaries lining pores; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to carbonates: 15 to 35 inches
Depth to the base of the diagnostic horizon: 24 to 50 inches

Ap, A, or AB horizon(s):
Hue—10YR or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam

BA, Bg, Bkg, Btg, BCk, BCkg, or BCg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam or silt loam

Cg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 or 2
Texture—silt loam

244A—Hartsburg silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Talfs and toeslopes

Map Unit Composition

Hartsburg and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 35 inches
- Soils that have a seasonal high water table at a depth of more than 1 foot and have more clay in the subsoil

Properties and Qualities of the Hartsburg Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Hickory Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Hickory silt loam, 35 to 60 percent slopes, at an elevation of 565 feet; Cass County, Illinois; 1,935 feet north and 2,130 feet west of the southeast corner of sec. 27, T. 18 N., R. 9 W.; USGS Ashland, Illinois, topographic quadrangle; lat. 39 degrees 58 minutes 47 seconds N. and long. 90 degrees 05 minutes 46 seconds W.; UTM zone 15, 747957E 4429551N, NAD 83:

A1—0 to 1 inch; very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many very fine roots; slightly acid; abrupt smooth boundary.

A2—1 to 4 inches; 90 percent dark grayish brown (10YR 4/2) and 10 percent brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine subangular blocky and weak fine granular structure; friable; many very fine roots; moderately acid; abrupt smooth boundary.

E—4 to 8 inches; brown (10YR 5/3) loam, light gray (10YR 7/2) dry; moderate thin platy structure; friable; few very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and pores; common fine distinct very pale brown (10YR 8/2) clay depletions between peds; 3 percent gravel; strongly acid; abrupt smooth boundary.

BE—8 to 12 inches; yellowish brown (10YR 5/4) loam, light gray (10YR 7/2) dry; moderate very fine and fine subangular blocky structure; friable; few very fine roots; very few distinct brown (10YR 5/3) and very few distinct dark grayish brown (10YR 4/2) organic coatings in root channels and pores; common fine prominent very pale brown (10YR 8/2) clay depletions between peds; 3 percent gravel; strongly acid; clear smooth boundary.

Bt1—12 to 22 inches; yellowish brown (10YR 5/4) clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films and common distinct very pale brown (10YR 7/3) silt coatings on faces of peds; 5 percent gravel; very strongly acid; clear smooth boundary.

Bt2—22 to 29 inches; yellowish brown (10YR 5/4) clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots; many distinct dark yellowish brown (10YR 4/4) clay films and few distinct very pale brown (10YR 7/3) silt coatings on faces of peds; 5 percent gravel; strongly acid; clear smooth boundary.

Bt3—29 to 40 inches; yellowish brown (10YR 5/4) clay loam; moderate medium prismatic and moderate medium subangular blocky structure; firm; few very fine roots; many distinct brown (7.5YR 4/4) clay films and very few distinct very pale brown (10YR 7/3) silt coatings on faces of peds; 5 percent gravel; moderately acid; clear smooth boundary.

Bt4—40 to 53 inches; yellowish brown (10YR 5/6) clay loam; weak medium prismatic and weak medium and coarse subangular blocky structure; firm; few very fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; few prominent fine black (10YR 2/1) masses of manganese accumulation throughout; 5 percent gravel; moderately acid; gradual smooth boundary.

BCt—53 to 58 inches; yellowish brown (10YR 5/6) loam; weak medium prismatic and weak medium and coarse subangular blocky structure; firm; few very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; few fine prominent black (10YR 2/1) masses of manganese accumulation and common distinct brown (10YR 5/3) iron depletions throughout; 5 percent gravel; neutral; gradual smooth boundary.

C—58 to 63 inches; yellowish brown (10YR 5/6) loam; massive; firm; very few distinct brown (7.5YR 4/4) clay films in root channels and/or pores; few prominent fine black (10YR 2/1) masses of manganese accumulation and many fine prominent light brownish gray (2.5Y 6/2) iron depletions throughout; 3 percent gravel; slightly alkaline.

Range in Characteristics

Depth to carbonates (if they occur): More than 40 inches
Depth to the base of the diagnostic horizon: More than 40 inches
Thickness of the loess: Less than 20 inches

Ap or A horizon(s):
Hue—10YR or 7.5YR
Value—2 to 5
Chroma—2 to 4
Texture—silt loam, loam, clay loam, or silty clay loam
Content of rock fragments—0 to 5 percent

E horizon(s):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or loam
Content of rock fragments—0 to 5 percent

Bt horizon(s):
Hue—10YR, 7.5YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, silty clay loam, loam, or gravelly clay loam
Content of rock fragments—0 to 20 percent

C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—5 to 7
Chroma—1 to 8
Texture—loam, clay loam, or sandy loam or the gravelly analogs of these textures
Content of rock fragments—2 to 20 percent

8D—Hickory silt loam, 10 to 18 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the surface layer
- Soils that have more clay in the subsoil
- Soils that have more clay in the surface layer
- Soils that have carbonates at a depth of less than 40 inches
- Soils that have less sand throughout

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- Somewhat poorly drained soils that have more clay in the upper part of the subsoil; in positions similar to those of the Hickory soil

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

8D2—Hickory loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the surface layer
- Soils that have carbonates at a depth of less than 40 inches
- Soils that have more clay in the subsoil
- Soils that have less sand in the surface layer
- Soils that have less sand throughout

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- Somewhat poorly drained soils that have more clay in the upper part of the subsoil; in positions similar to those of the Hickory soil

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

8F—Hickory silt loam, 18 to 35 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the surface layer
- Soils that have more clay in the subsoil
- Soils that have more sand in the surface layer
- Soils that have carbonates at a depth of less than 40 inches

Dissimilar soils:
- The well drained Fayette and Rozetta soils on shoulders and backslopes
- Somewhat poorly drained soils that have more clay in the upper part of the subsoil; in the less sloping positions

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

898D2—Hickory-Sylvan complex, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes

Map Unit Composition

Hickory and similar soils: 50 percent
Sylvan and similar soils: 45 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 18 percent
- Soils that have more clay in the surface layer

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—3e; Sylvan—3e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

898D3—Hickory-Sylvan complex, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes

Map Unit Composition

Hickory and similar soils: 50 percent
Sylvan and similar soils: 45 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 18 percent
- Soils that have less clay in the surface layer

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—4e; Sylvan—4e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

898F2—Hickory-Sylvan complex, 18 to 35 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes (fig. 4)

Map Unit Composition

Hickory and similar soils: 50 percent
Sylvan and similar soils: 35 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 18 percent
- Soils that have more clay in the surface layer
- Soils that have slopes of more than 35 percent

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils

- The well drained Fayette soils on shoulders and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—6e; Sylvan—6e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

898F3—Hickory-Sylvan complex, 18 to 35 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes

Map Unit Composition

Hickory and similar soils: 50 percent
Sylvan and similar soils: 35 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 18 percent
- Soils that have less clay in the surface layer
- Soils that have slopes of more than 35 percent

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils
- The well drained Fayette soils on shoulders and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—6e; Sylvan—6e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

898G—Hickory-Sylvan silt loams, 35 to 60 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes (fig. 4)

Map Unit Composition

Hickory and similar soils: 60 percent
Sylvan and similar soils: 25 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 35 percent
- Soils that have more clay in the surface layer

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils
- The well drained Fayette soils on shoulders and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—7e; Sylvan—7e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

Ipava Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon

Ipava silt loam, 0 to 2 percent slopes, at an elevation of 804 feet; Knox County, Illinois; 2,046 feet west and 594 feet north of the southeast corner of sec. 25, T. 13 N., R. 2 E.; USGS Oneida topographic quadrangle; lat. 41 degrees 04 minutes 48 seconds N. and long. 90 degrees 13 minutes 03 seconds W.; UTM zone 15, 733732E 4551373N, NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; moderately acid; abrupt smooth boundary.

A—10 to 18 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; common faint black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.

BA—18 to 24 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Btg1—24 to 31 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Btg2—31 to 37 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; common distinct dark gray (10YR 4/1) clay films on faces of peds; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented manganese concretions throughout; few fine prominent black (7.5YR 2.5/1) manganese stains on faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; slightly alkaline; gradual smooth boundary.

BCg—37 to 50 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films occurring as linings in pores and on a few vertical faces of peds; common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented manganese concretions throughout; common fine prominent black (7.5YR 2.5/1) manganese stains on faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.

Cg—50 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; few faint very dark grayish brown (10YR 3/2) organo-clay films occurring as linings in pores; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented manganese concretions throughout; few fine prominent black (7.5YR 2.5/1) manganese stains on faces of vertical cracks; moderately alkaline.

Range in Characteristics

Depth to carbonates: More than 40 inches
Depth to the base of the diagnostic horizon: 35 to 55 inches
Thickness of the mollic epipedon: 10 to 18 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt or Btg horizon(s):
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 4
Texture—silty clay loam, silty clay, or silt loam

Cg or C horizon(s):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam

43A—Ipava silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and talfs (fig. 6)

Map Unit Composition

Ipava and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 2 feet and have less clay in the subsoil
- Soils that have a thinner dark surface layer
- Soils that have less clay in the upper part of the subsoil

Dissimilar soils:
- The well drained Greenbush, Osco, and Rozetta soils on the slightly higher summits and shoulders
- The well drained Tallula soils on summits and shoulders
- The well drained Elkhart soils on shoulders and backslopes
- The poorly drained Denny and Sable soils in depressions

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Keomah Series

Taxonomic classification: Fine, smectitic, mesic Aeric Endoaqualfs

Typical Pedon

Keomah silt loam, 0 to 2 percent slopes, at an elevation of 655 feet; Adams County, Illinois; 2,495 feet south and 300 feet west of the northeast corner of sec. 4, T. 2 N., R. 7 W.; USGS Loraine, Illinois, topographic quadrangle; lat. 40 degrees 11 minutes 24 seconds N. and long. 91 degrees 12 minutes 14 seconds W.; UTM zone 15, 652882E 4450397N, NAD 83:

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Ap2—6 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak very fine subangular blocky; friable; common very fine and fine roots; few fine distinct brown (7.5YR 4/4) masses of iron and manganese accumulation throughout; moderately acid; abrupt smooth boundary.

E—11 to 18 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium platy structure parting to weak very fine subangular blocky; friable; common fine roots; few distinct dark grayish brown (10YR 4/2) coatings on faces of peds and in pores; few distinct light gray (10YR 7/2) clay depletions throughout; few fine prominent black (2.5Y 2/1) masses of manganese accumulation throughout and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

Bt1—18 to 25 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout, common fine prominent black (2.5Y 2/1) masses of manganese accumulation throughout, and few fine faint grayish brown (10YR 5/2) iron depletions throughout; strongly acid; clear smooth boundary.

Bt2—25 to 33 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent black (2.5Y 2/1) masses of manganese accumulation and many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; strongly acid; clear smooth boundary.

Bt3—33 to 44 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout, common fine prominent black (2.5Y 2/1) masses of manganese accumulation throughout, and common fine faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

Btg—44 to 51 inches; light brownish gray (10YR 6/2) silty clay loam; weak coarse prismatic structure; firm; few fine roots; few distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; few fine prominent black (2.5Y 2/1) masses of manganese accumulation and many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

BCg1—51 to 63 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and few fine prominent black (2.5Y 2/1) masses of manganese accumulation throughout; slightly acid; clear smooth boundary.

BCg2—63 to 76 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; few prominent black (2.5Y 2/1) masses of manganese accumulation and many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

C—76 to 89 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, few fine prominent black (2.5Y 2/1) masses of manganese accumulation throughout, and common medium distinct light brownish gray (10YR 6/2) iron depletions throughout; slightly acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 76 inches

Ap or A horizon(s):

Hue—10YR
Value—3 or 4 (3 in horizons that are less than 3 inches thick)
Chroma—1 or 2
Texture—silt loam

E horizon(s):
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam

Bt or Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay

BCg, BC, Cg, or C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam

17A—Keomah silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and talfs (fig. 4)

Map Unit Composition

Keomah and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a darker surface layer
- Soils that have a thicker dark surface soil
- Soils that have less clay in the subsoil
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The well drained Greenbush and Rozetta soils on the slightly higher summits and shoulders
- The poorly drained Denny, Rushville, and Sable soils in depressions
- The well drained Fayette soils on shoulders

Properties and Qualities of the Keomah Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: 0.5 foot to 2.0 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Lawndale Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Lawndale silt loam, 0 to 2 percent slopes, at an elevation of about 570 feet; Logan County, Illinois; about 2,115 feet west and 665 feet south of the northeast corner of sec. 21, T. 21 N., R. 4 W.; USGS Delavan South, Illinois, topographic quadrangle; lat. 40 degrees 15 minutes 40 seconds N. and long. 89 degrees 33 minutes 10 seconds W.; UTM zone 16, 282915E 4459864N, NAD 83:

Ap—0 to 6 inches; very dark brown (10YR 2/2) silt loam, dark gray (10YR 4/1) dry; moderate very fine granular structure; friable; moderately acid; abrupt smooth boundary.

A1—6 to 13 inches; very dark brown (10YR 2/2) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.

A2—13 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, dark gray (10YR 4/1) dry; moderate coarse granular structure; friable; very dark brown (10YR 2/2) organic coatings on faces of peds; moderately acid; gradual smooth boundary.

Bt1—18 to 23 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate very fine subangular blocky structure; firm; many faint dark grayish brown (10YR 4/2) clay films and common very dark brown (10YR 2/2) organic coatings on faces of peds; moderately acid; clear smooth boundary.

Bt2—23 to 31 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation; few fine black (10YR 2/1) manganese concretions; moderately acid; clear smooth boundary.

Bt3—31 to 38 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine prominent light brownish gray (10YR 6/2) iron depletions; few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation; few fine black (10YR 2/1) manganese concretions; moderately acid; clear smooth boundary.

Bt4—38 to 44 inches; yellowish brown (10YR 5/6) silt loam; moderate coarse subangular blocky structure; friable; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation; slightly acid; abrupt smooth boundary.

2Bt5—44 to 52 inches; dark yellowish brown (10YR 3/4) loamy fine sand; weak coarse subangular blocky structure; very friable; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; slightly acid; gradual smooth boundary.

2C—52 to 60 inches; yellowish brown (10YR 5/8) fine sand; single grain; loose; slightly acid.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of the diagnostic horizon: 45 to more than 60 inches

Ap and A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt horizon(s):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 6
Texture—silt loam or silty clay loam

2Bt or 2BC horizon(s):
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—2 to 6
Texture—loamy fine sand, loamy sand, fine sand, or sand

2C horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 8
Texture—loamy fine sand, loamy sand, fine sand, or sand

683A—Lawndale silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Talfs and toeslopes (fig. 7)

Map Unit Composition

Lawndale and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have sandy material at a depth of more than 60 inches
- Soils that have more clay in the subsoil
- Soils that have a lighter colored surface soil

Dissimilar soils:
- The well drained Broadwell and Middletown soils on the slightly higher summits and backslopes
- The well drained Onarga soils on the higher summits and shoulders
- The excessively drained Sparta soils on summits and shoulders
- The poorly drained Brooklyn, Drummer, and Thorp soils in depressions

Properties and Qualities of the Lawndale Soil

Parent material: Loess over eolian sands
Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Lawson Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Lawson silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 685 feet; Adams County, Illinois; 1,900 feet east and 265 feet south of the northwest corner of sec. 3, T. 1 S., R. 5 W.; USGS Clayton, Illinois, topographic quadrangle; lat. 40 degrees 01 minute 04 seconds N. and long. 90 degrees 57 minutes 54 seconds W.; UTM zone 15, 673680E 4431720N, NAD 83:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many fine roots; neutral; abrupt smooth boundary.

A1—6 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common fine roots; neutral; clear smooth boundary.

A2—14 to 22 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common fine roots; common fine faint brown (10YR 4/3) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

A3—22 to 33 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common fine roots; common fine faint brown (10YR 4/3) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

C1—33 to 40 inches; stratified 70 percent very dark grayish brown (10YR 3/2) and 20 percent dark brown (10YR 3/3) silt loam; massive; friable; common fine roots; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation and common fine and medium faint dark grayish brown (10YR 4/2) iron depletions throughout; slightly acid; clear smooth boundary.

C2—40 to 56 inches; stratified 60 percent very dark grayish brown (10YR 3/2) and 30 percent dark brown (10YR 3/3) silt loam; massive; friable; few fine roots; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation and common medium faint dark grayish brown (10YR 4/2) iron depletions throughout; slightly acid; clear smooth boundary.

C3—56 to 75 inches; stratified 80 percent very dark grayish brown (10YR 3/2) and 10 percent dark brown (10YR 3/3) silt loam; massive; friable; few fine roots; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation between peds, common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation between peds, and many medium faint dark grayish brown (10YR 4/2) iron depletions throughout; slightly acid; clear smooth boundary.

C4—75 to 80 inches; stratified 80 percent dark grayish brown (10YR 4/2) and 10 percent very dark grayish brown (10YR 3/2) silt loam; massive; friable; common medium and coarse prominent yellowish brown (10YR 5/6) and common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout and common fine faint dark gray (10YR 4/1) iron depletions throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

C horizon(s):
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—stratified silt loam or silty clay loam; strata containing more sand occur below a depth of 40 inches in some pedons

3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface soil less than 24 inches thick
- Soils that have a lighter colored surface soil
- Soils that have more sand throughout
- Soils that have a buried soil at a depth of less than 40 inches

Dissimilar soils:
- The well drained Ross soils in the slightly higher positions
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Lawson Soil

Parent material: Alluvium

Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Lenzburg Series

Taxonomic classification: Fine-loamy, mixed, active, calcareous, mesic Haplic Udarents

Typical Pedon

Lenzburg silt loam, 1 to 7 percent slopes, at an elevation of 525 feet; Randolph County, Illinois; approximately 12 feet south and 580 feet east of the center of sec. 22, T. 5 S., R. 6 W.; USGS Steeleville, Illinois, topographic quadrangle; lat. 38 degrees 04 minutes 55 seconds N. and long. 89 degrees 44 minutes 54 seconds W.; UTM zone 16, 258966E 4218479N, NAD 83:

Ap—0 to 3 inches; mixed brown (10YR 4/3), light brownish gray (10YR 6/2), yellowish brown (10YR 5/6), and yellowish red (5YR 5/6) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable, slightly hard; about 7 percent rock fragments consisting of till pebbles and channers and flags of limestone and siltstone; slightly effervescent; slightly alkaline; abrupt wavy boundary.

AC—3 to 6 inches; mixed yellowish brown (10YR 5/4), light brownish gray (10YR 6/2), and strong brown (7.5YR 5/6) silt loam; moderate medium platy structure; friable, hard and slightly hard; about 9 percent rock fragments consisting of till pebbles and channers and flags of limestone and siltstone; strongly effervescent; slightly alkaline; abrupt wavy boundary.

C1—6 to 10 inches; brown (10YR 4/3) silt loam; strong thick horizontal layers; massive; firm, hard; few light brownish gray (10YR 6/2) fragments of silty clay loam; few distinct very dark gray (10YR 3/1) coatings on faces of soil fragments; about 11 percent rock fragments consisting of till pebbles and channers and flags of limestone and siltstone; strongly effervescent; slightly alkaline; abrupt wavy boundary.

C2—10 to 33 inches; mixed brown (7.5YR 4/4) and pale brown (10YR 6/3) clay loam; massive; firm, hard; few vertical cleavage planes; few gray (10YR 5/1) soil fragments throughout and few yellowish red (5YR 5/6) soil fragments in the lower part; about 9 percent rock fragments consisting of till pebbles and channers and flags of limestone and siltstone; strongly effervescent; slightly alkaline; clear smooth boundary.

C3—33 to 45 inches; mixed dark yellowish brown (10YR 4/4) and pale brown (10YR 6/3) clay loam; massive; firm, hard; few gray (10YR 6/1) and grayish brown (10YR 5/2) soil fragments; about 10 percent rock fragments consisting of till pebbles and channers and flags of limestone and siltstone; strongly effervescent; slightly alkaline; clear smooth boundary.

C4—45 to 60 inches; mixed brown (7.5YR 4/4) and gray (10YR 5/1) channery clay loam; very firm, very hard; few yellowish red (5YR 5/8) soil fragments; about 17 percent fragments of limestone; strongly effervescent; slightly alkaline.

Range in Characteristics

Note: Some pedons have an AC horizon.

Ap or A horizon(s):
Hue—5YR, 10YR, 2.5Y, or 5Y
Value—2 to 6
Chroma—1 to 6
Texture—silt loam, silty clay loam, clay loam, or loam or the gravelly, stony, or channery analogs of these textures
Content of rock fragments—5 to 25 percent

C horizon(s):
Hue—7.5YR or 10YR
Value—2 to 6
Chroma—1 to 4
Texture—silty clay loam, silt loam, loam, silty clay, or clay loam or the channery, gravelly, or cobbly analogs of these textures
Content of rock fragments—5 to 25 percent

871B—Lenzburg silt loam, 1 to 7 percent slopes

Setting

Landform: Graded spoil banks
Position on the landform: Summits and shoulders

Map Unit Composition

Lenzburg and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 7 percent

Dissimilar soils:
- The well drained Bold, Elkhart, Osco, Rozetta, and Tallula soils in undisturbed areas
- The somewhat poorly drained Ipava soils in undisturbed areas

Properties and Qualities of the Lenzburg Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

871D—Lenzburg silty clay loam, 7 to 20 percent slopes

Setting

Landform: Graded spoil banks
Position on the landform: Shoulders and backslopes

Map Unit Composition

Lenzburg and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 20 percent
- Soils that have slopes of less than 7 percent

Dissimilar soils:
- The well drained Bold, Elkhart, Osco, Rozetta, Sylvan, and Tallula soils in undisturbed areas

Properties and Qualities of the Lenzburg Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 6e

Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

871G—Lenzburg silty clay loam, 20 to 60 percent slopes

Setting

Landform: Spoil banks
Position on the landform: Backslopes

Map Unit Composition

Lenzburg and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 20 percent

Dissimilar soils:
- The well drained Bold, Elkhart, Osco, Rozetta, Sylvan, and Tallula soils in undisturbed areas

Properties and Qualities of the Lenzburg Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Littleton Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Littleton silt loam, 0 to 2 percent slopes, rarely flooded, at an elevation of 470 feet; Adams County, Illinois; 1,000 feet east and 1,200 feet north of the southwest corner of sec. 26, T. 3 S., R. 8 W.; USGS Marblehead, Illinois, topographic quadrangle; lat. 39

degrees 46 minutes 32 seconds N. and long. 91 degrees 17 minutes 04 seconds W.; UTM zone 15, 645614E 4404231N, NAD 83:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots throughout; neutral; abrupt smooth boundary.

A—9 to 19 inches; very dark grayish brown (10YR 3/2) silt loam, dark gray (10YR 4/1) dry; moderate very fine and fine subangular blocky structure; friable; few very fine roots throughout; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine faint brown (7.5YR 4/3) masses of iron and manganese accumulation between peds; slightly acid; clear smooth boundary.

AB—19 to 32 inches; very dark grayish brown (10YR 3/2) silt loam, gray (10YR 5/1) dry; weak medium subangular blocky structure; friable; few very fine roots throughout; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine faint brown (7.5YR 4/3) masses of iron and manganese accumulation between peds; slightly acid; clear smooth boundary.

Bw1—32 to 45 inches; dark grayish brown (10YR 4/2) silt loam; weak coarse subangular blocky structure; friable; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine distinct brown (7.5YR 4/4) masses of iron and manganese accumulation and common fine faint grayish brown (10YR 5/2) iron depletions throughout; slightly acid; gradual smooth boundary.

Bw2—45 to 53 inches; dark grayish brown (10YR 4/2) silt loam; weak coarse subangular blocky structure; friable; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and very few distinct very dark gray (10YR 3/1) organic coatings in root channels and/or pores; few fine faint brown (7.5YR 4/3) masses of iron and manganese accumulation throughout and few fine faint gray (10YR 5/1) iron depletions between peds; slightly acid; gradual smooth boundary.

C—53 to 65 inches; grayish brown (10YR 5/2) silt loam; massive; friable; very few distinct very dark grayish brown (10YR 3/2) organic coatings lining pores; many medium distinct brown (7.5YR 4/4) masses of iron and manganese accumulation throughout; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to the base of the diagnostic horizon: 30 to 62 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bw horizon(s):
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—2 or 3
Texture—silt loam; thin layers of silty clay loam in some pedons

C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam; thin layers of silty clay loam in some pedons

7081A—Littleton silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Alluvial fans

Map Unit Composition

Littleton and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface soil less than 24 inches thick
- Soils that have more clay in the subsoil
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The well drained Worthen soils in the slightly higher positions
- The well drained Arenzville and Ross soils in the lower positions
- The somewhat poorly drained Tice soils in the lower positions
- The poorly drained Beaucoup soils in depressions

Properties and Qualities of the Littleton Soil

Parent material: Local silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Rare, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Middletown Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Middletown silt loam, 2 to 5 percent slopes, at an elevation of 605 feet; Sangamon County, Illinois; 20 feet west and 1,145 feet south of the northeast corner of sec. 26, T. 17 N., R. 6 W.; USGS Athens, Illinois, topographic quadrangle; lat. 39 degrees 53 minutes 57 seconds N. and long. 89 degrees 43 minutes 53 seconds W.; UTM zone 16, 266482E 4420143N, NAD 83:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine and medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

E—9 to 12 inches; yellowish brown (10YR 5/4) silt loam; weak medium platy structure; friable; common fine roots; common distinct dark grayish brown (10YR 4/2) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—12 to 17 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; common fine and medium roots; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—17 to 35 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; few fine rounded black (5YR 2/1) manganese concretions in the matrix; strongly acid; gradual smooth boundary.

Bt3—35 to 44 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate coarse subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on vertical faces of peds; few fine black (5YR 2/1) manganese concretions in the matrix; moderately acid; clear smooth boundary.

2Bt4—44 to 47 inches; dark yellowish brown (10YR 4/4) clay loam; weak coarse subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on vertical faces of peds; moderately acid; abrupt smooth boundary.

2BC1—47 to 52 inches; dark yellowish brown (10YR 4/4) loamy fine sand; weak coarse subangular blocky structure; very friable; moderately acid; gradual smooth boundary.

2BC2—52 to 75 inches; stratified yellowish brown (10YR 5/6) and strong brown (7.5YR 4/6) sand and loamy sand; single grain; loose; 2-inch band of brown (7.5YR 4/4) sandy loam starting at a depth of 64 inches; moderately acid; gradual smooth boundary.

2C—75 to 80 inches; strong brown (7.5YR 4/6) sand; single grain; loose; slightly acid.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to the base of the diagnostic horizon: 45 to 80 inches

Ap horizon(s):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam; silty clay loam in severely eroded pedons

E or BE horizon(s) (where present):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 5
Texture—silty clay loam or silt loam

2Bt horizon(s) (where present):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 5
Texture—clay loam, fine sandy loam, or loam

2BC horizon(s) (where present):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—loamy fine sand, loamy sand, sand, or fine sand

2C horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—fine sand, sand, loamy fine sand, or loamy sand

685B—Middletown silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders (fig. 5)

Map Unit Composition

Middletown and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 5 percent
- Soils that have more clay in the surface layer
- Soils that have a thicker and darker surface soil
- Soils that have less sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The somewhat poorly drained Lawndale and Stronghurst soils in the less sloping positions
- The somewhat excessively drained Bloomfield soils in positions similar to those of the Middletown soil
- The well drained Princeton soils on shoulders and backslopes

Properties and Qualities of the Middletown Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

685C2—Middletown silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 5)

Map Unit Composition

Middletown and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 5 percent
- Soils that have more clay in the surface layer
- Soils that have a thicker and darker surface soil
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have slopes of more than 10 percent
- Soils that have carbonates at a depth of less than 60 inches and have less sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The somewhat poorly drained Lawndale and Stronghurst soils in the less sloping positions
- The somewhat excessively drained Bloomfield soils on summits and shoulders
- The well drained Princeton soils in positions similar to those of the Middletown soil
- The well drained Bold soils on backslopes

Properties and Qualities of the Middletown Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

685C3—Middletown silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 5)

Map Unit Composition

Middletown and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 5 percent
- Soils that have less clay in the surface layer
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have slopes of more than 10 percent
- Soils that have carbonates at a depth of less than 60 inches and have less sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The somewhat poorly drained Lawndale and Stronghurst soils in the less sloping positions
- The somewhat excessively drained Bloomfield soils on summits and shoulders
- The well drained Princeton soils in positions similar to those of the Middletown soil
- The well drained Bold soils on backslopes

Properties and Qualities of the Middletown Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

685D2—Middletown silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Middletown and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 10 percent
- Soils that have more clay in the surface layer
- Soils that have a thicker and darker surface soil
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have carbonates at a depth of less than 60 inches and have less sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The somewhat excessively drained Bloomfield soils on summits and shoulders
- The well drained Princeton soils on shoulders and backslopes
- The well drained Bold soils on backslopes

Properties and Qualities of the Middletown Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

685D3—Middletown silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes (fig. 5)

Map Unit Composition

Middletown and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 10 percent
- Soils that have less clay in the surface layer
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have carbonates at a depth of less than 60 inches and have less sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The somewhat excessively drained Bloomfield soils on summits and shoulders
- The well drained Princeton soils on shoulders and backslopes
- The well drained Bold soils on backslopes

Properties and Qualities of the Middletown Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

M-W—Miscellaneous water

- This map unit consists of manmade areas that are used for industrial, sanitary, or mining applications and that contain water most of the year.

Navlys Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Navlys silty clay loam, 5 to 10 percent slopes, severely eroded, at an elevation of 650 feet; Fulton County, Illinois; 1,411 feet south and 255 feet east of the northwest corner of sec. 11, T. 4 N., R. 2 E.; USGS Ipava topographic quadrangle; lat. 40 degrees 20 minutes 42 seconds N. and long. 90 degrees 15 minutes 19 seconds W.; UTM zone 15, 733109E 4469671N, NAD 83:

Ap—0 to 6 inches; 70 percent dark grayish brown (10YR 4/2) and 30 percent yellowish brown (10YR 5/4) silty clay loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure parting to weak fine granular; friable; common very fine roots; moderately acid; clear smooth boundary.

Bt1—6 to 15 inches; yellowish brown (10YR 5/4) silty clay loam; strong fine and medium subangular blocky structure; firm; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; moderately acid; gradual smooth boundary.

Bt2—15 to 22 inches; 90 percent yellowish brown (10YR 5/4) and 10 percent light brownish gray (10YR 6/2) silty clay loam; strong medium prismatic structure; firm; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; slightly acid; gradual smooth boundary.

Bt3—22 to 31 inches; yellowish brown (10YR 5/4) and light brownish gray (10YR 6/2) silty clay loam; moderate medium prismatic structure; firm; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films lining root channels and pores; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine manganese concretions throughout; slightly effervescent; neutral; gradual smooth boundary.

C1—31 to 56 inches; yellowish brown (10YR 5/4) and light brownish gray (10YR 6/2) silt loam; massive; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films lining root channels and pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine manganese concretions throughout; slightly effervescent; slightly alkaline; gradual smooth boundary.

C2—56 to 60 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; common fine distinct light yellowish brown (10YR 6/4) masses of iron accumulation and few fine manganese concretions throughout; slightly effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of the diagnostic horizon: 22 to 40 inches
Depth to carbonates: 22 to 40 inches

Ap or A horizon(s):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

Bt or BC horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5

Chroma—3 to 6
Texture—silty clay loam or silt loam

C horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

630C2—Navlys silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Navlys and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 5 percent
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a darker surface layer
- Soils that have more clay in the surface layer
- Soils that have more sand in the lower part of the subsoil and in the underlying material and have carbonates at a depth of more than 40 inches
- Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The well drained Bold soils in positions similar to those of the Navlys soil
- The somewhat poorly drained Keomah soils on summits

Properties and Qualities of the Navlys Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

630D3—Navlys silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Navlys and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a darker surface layer
- Soils that have less clay in the surface layer
- Soils that have more sand in the lower part of the subsoil and in the underlying material and have carbonates at a depth of more than 40 inches
- Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The well drained Bold soils in positions similar to those of the Navlys soil
- The well drained Rozetta soils on shoulders and summits

Properties and Qualities of the Navlys Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Onarga Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Onarga soil in map unit 827C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a coarse-loamy, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Onarga sandy loam, 0 to 2 percent slopes, at an elevation of about 495 feet; Mason County, Illinois; about 2,530 feet south and 2,350 feet east of the northwest corner of sec. 18, T. 22 N., R. 6 W.; USGS Forrest City, Illinois, topographic quadrangle; lat. 40 degrees 21 minutes 17 seconds N. and long. 89 degrees 49 minutes 11 seconds W.; UTM zone 16, 260534E 4470951N, NAD 83:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) sandy loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine roots throughout; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A—10 to 18 inches; very dark grayish brown (10YR 3/2) sandy loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine roots throughout; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

Bt1—18 to 25 inches; brown (10YR 4/3) sandy loam; moderate medium subangular blocky structure; friable; common very fine roots throughout; many distinct very dark grayish brown (10YR 3/2) and common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—25 to 33 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots throughout; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; moderately acid; clear smooth boundary.

BC—33 to 36 inches; dark yellowish brown (10YR 4/6) loamy sand; weak medium prismatic structure parting to weak medium subangular blocky; very friable; few very fine roots throughout; moderately acid; gradual smooth boundary.

C1—36 to 63 inches; dark yellowish brown (10YR 4/6) sand; single grain; loose; moderately acid; gradual smooth boundary.

C2—63 to 80 inches; 50 percent dark yellowish brown (10YR 4/4) and 50 percent brown (7.5YR 4/4), stratified loamy sand and sand; single grain; loose; 2 percent fine gravel; slightly acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 25 to 40 inches
Thickness of the mollic epipedon: 10 to 18 inches

Ap or A horizon(s):
Hue—10YR or 7.5YR
Value—2 or 3
Chroma—1 to 3
Texture—sandy loam or fine sandy loam

AB or BA horizon(s) (where present):
Hue—10YR or 7.5YR
Value—4 or 5

Chroma—3 to 6
Texture—loam or sandy loam

Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—loam or sandy loam; subhorizons of fine sandy loam, sandy clay loam, or clay loam in some pedons

BC horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, loamy sand, fine sandy loam, or loamy fine sand

C or 2C horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—4 to 6
Texture—stratified loamy fine sand, fine sand, fine sandy loam, loamy sand, sand, or sandy loam

827B—Broadwell-Onarga complex, 2 to 5 percent slopes

Setting

Landform: Stream terraces; ground moraines
Position on the landform: Broadwell—shoulders and backslopes; Onarga—summits and shoulders (fig. 7)

Map Unit Composition

Broadwell and similar soils: 50 percent
Onarga and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have slopes of less than 2 percent
- Soils that have slopes of more than 5 percent

Dissimilar soils:
- The poorly drained Thorp soils in depressions
- The somewhat poorly drained Lawndale soils in the less sloping areas
- The excessively drained Sparta soils in positions similar to those of the Broadwell and Onarga soils

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Properties and Qualities of the Onarga Soil

Parent material: Loamy eolian deposits over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Broadwell—2e; Onarga—2e
Prime farmland category: Prime farmland
Hydric soil status: Broadwell—not hydric; Onarga—not hydric

827C2—Broadwell-Onarga complex, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces; ground moraines
Position on the landform: Broadwell—shoulders and backslopes; Onarga—summits and shoulders (fig. 8)

Map Unit Composition

Broadwell and similar soils: 45 percent
Onarga and similar soils: 35 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have slopes of less than 5 percent
- Soils that have slopes of more than 10 percent

Dissimilar soils:
- The poorly drained Thorp soils in depressions
- The somewhat poorly drained Lawndale soils in the less sloping areas

- The excessively drained Sparta soils in positions similar to those of the Broadwell and Onarga soils

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Onarga Soil

Parent material: Loamy eolian deposits over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Broadwell—3e; Onarga—3e
Prime farmland category: Not prime farmland
Hydric soil status: Broadwell—not hydric; Onarga—not hydric

802E—Orthents, loamy, hilly

Setting

General description: Cut and fill areas and borrow areas where soil has been disturbed
Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Orthents: 85 percent
Dissimilar soils: 15 percent

Dissimilar soils:
- The well drained Broadwell soils in undisturbed areas
- The excessively drained Sparta soils in undisturbed areas

Properties and Qualities of the Orthents

Parent material: Earthy fill derived from former soil layers and underlying materials
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Osco Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Osco soil in map unit 86C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Osco silt loam, 2 to 5 percent slopes, at an elevation of 858 feet; Carroll County, Illinois; 316 feet north and 88 feet west of the southeast corner of sec. 23, T. 24 N., R. 6 E.; USGS Lanark, Illinois, topographic quadrangle; lat. 42 degrees 03 minutes 13 seconds N. and long. 89 degrees 45 minutes 48 seconds W.; UTM zone 16, 271330E 4659424N, NAD 83:

Ap—0 to 10 inches; very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.
A—10 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium and coarse granular structure; friable; common fine roots; strongly acid; clear smooth boundary.
BA—14 to 20 inches; dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable;

common fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt1—20 to 26 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; few distinct gray (10YR 6/1) (dry) silt coatings and common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct light brownish gray (10YR 6/2) (dry) silt coatings and many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine faint brown (10YR 5/3) masses of iron and manganese and common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; many prominent very dark gray (N 3/) and dark brown (7.5YR 3/2) masses of iron and manganese concretions; strongly acid; clear smooth boundary.

Bt3—37 to 45 inches; light yellowish brown (10YR 6/4) silty clay loam; moderate coarse subangular blocky structure; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and few medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; strongly acid; gradual smooth boundary.

BC—45 to 55 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silty clay loam; weak coarse angular blocky structure; friable; few fine distinct light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual smooth boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silt loam; massive; friable; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and common medium distinct grayish brown (10YR 5/2) iron depletions; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of the diagnostic horizon: 40 to more than 66 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt horizon(s):
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam

C horizon(s):
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam

86B—Osco silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders (fig. 6)

Map Unit Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 4 feet
- Soils that have a lighter colored surface soil
- Soils that have a thinner dark surface soil
- Soils that have carbonates at a depth of less than 48 inches and do not have a seasonal high water table within a depth of 6 feet
- Soils that have less clay in the upper part of the subsoil

Dissimilar soils:
- The somewhat poorly drained Clarksdale and Ipava soils in the less sloping areas

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

86C2—Osco silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 5 percent

- Soils that have carbonates at a depth of less than 48 inches and do not have a seasonal high water table within a depth of 6 feet
- Soils that have less clay in the upper part of the subsoil

Dissimilar soils:
- The somewhat poorly drained Ipava soils in the less sloping areas

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

864—Pits, quarry

- This map unit consists of open excavations from which limestone has been removed or is being removed.

Map Unit Composition

Pits, quarry: 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Dissimilar components:
- The well drained Lenzburg soils in disturbed areas
- The well drained Bold, Elkhart, Osco, Rozetta, and Tallula soils in undisturbed areas

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland
Hydric soil status: Not applicable

Plano Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Plano silt loam, 0 to 2 percent slopes, at an elevation of about 715 feet; Stark County, Illinois; about 1,200 feet south and 1,920 feet east of the northwest corner of sec. 13, T. 12 N., R. 7 E.; USGS Castleton topographic quadrangle; lat. 41 degrees 01 minute 45 seconds N. and long. 89 degrees 39 minutes 00 seconds W.; UTM zone 16, 277210E 4545382N, NAD 83:

Ap—0 to 9 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A—9 to 14 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.

Bt1—14 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—19 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—31 to 43 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; common distinct very pale brown (10YR 7/3) (dry) silt coatings on faces of peds; few fine faint yellowish brown (10YR 5/4) masses of iron and manganese accumulation in the matrix; slightly acid; clear smooth boundary.

Bt4—43 to 49 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium prismatic structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct very pale brown (10YR 7/3) (dry) silt coatings on faces of peds; slightly acid; clear smooth boundary.

2Bt5—49 to 53 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure; friable; few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2BC—53 to 60 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; many distinct dark yellowish brown (10YR 3/4) clay bridges between sand grains; about 5 percent gravel; neutral; gradual smooth boundary.

2C—60 to 72 inches; stratified yellowish brown (10YR 5/6) and brown (7.5YR 4/4) sandy loam, loam, and loamy sand; massive; friable; about 12 percent gravel; neutral.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of the diagnostic horizon: 44 to 70 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

AB or BA horizon(s) (where present):
Hue—10YR

Value—3 or 4
Chroma—2 to 4
Texture—silt loam or silty clay loam

Bt horizon(s) (upper and middle parts):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silty clay loam

Bt horizon(s) (lower part):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam or silty clay loam

2Bt or 2BC horizon(s):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture—silt loam, loam, sandy loam, clay loam, or sandy clay loam

2C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture—stratified loam, loamy sand, sandy loam, or silt loam
Content of rock fragments—3 to 15 percent

199A—Plano silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Talfs and summits (fig. 8)

Map Unit Composition

Plano and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that have more sand in the underlying material and have slopes of more than 2 percent
- Soils that have more sand and less clay in the surface layer and in the upper part of the subsoil and have slopes of more than 2 percent

Dissimilar soils:
- The excessively drained Sparta soils on the higher summits and shoulders
- The somewhat poorly drained Elburn soils in the slightly lower positions

Properties and Qualities of the Plano Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

199B—Plano silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits and shoulders (fig. 8)

Map Unit Composition

Plano and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent
- Soils that have more sand in the underlying material
- Soils that have more sand and less clay in the surface layer and in the upper part of the subsoil
- Soils that have a lighter colored surface soil

Dissimilar soils:
- The excessively drained Sparta soils on the higher summits and shoulders
- The somewhat poorly drained Elburn soils in the slightly lower positions
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Plano Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Princeton Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Princeton fine sandy loam, 2 to 5 percent slopes, at an elevation of about 530 feet; Vigo County, Indiana; about 2,380 feet west and 360 feet south of the northeast corner of sec. 5, T. 10 N., R. 9 W.; USGS Pimento, Indiana, topographic quadrangle; lat. 39 degrees 20 minutes 45 seconds N. and long. 87 degrees 26 minutes 00 seconds W.; UTM zone 16, 462658E 4355249N, NAD 83:

Ap—0 to 8 inches; brown (10YR 4/3) fine sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; many medium roots; neutral; abrupt smooth boundary.

Bt1—8 to 11 inches; strong brown (7.5YR 5/6) fine sandy loam; weak thick platy structure parting to weak fine and very fine subangular blocky; friable; common medium roots; common distinct very pale brown (10YR 7/3) silt coatings on faces of peds; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; slightly acid; clear wavy boundary.

Bt2—11 to 26 inches; brown (7.5YR 4/4) sandy clay loam; moderate medium subangular blocky structure; firm; common medium and fine roots; many distinct reddish brown (5YR 4/4) clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—26 to 41 inches; yellowish red (5YR 5/6) sandy loam; weak coarse subangular blocky structure; friable; few fine roots; common distinct reddish brown (5YR 4/4) clay films on faces of peds; very strongly acid; gradual wavy boundary.

E and Bt—41 to 60 inches; brown (7.5YR 4/4) loamy sand (E); weak coarse subangular blocky structure; very friable; common wavy discontinuous strong brown (7.5YR 5/6) lamellae of fine sandy loam (Bt); strongly acid; gradual wavy boundary.

CB—60 to 80 inches; strong brown (7.5YR 5/6) and brown (7.5YR 4/4), stratified loamy fine sand and fine sand; single grain; loose; strongly acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to more than 80 inches

Ap or A horizon(s):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—sandy loam, fine sandy loam, or fine sand

Bt horizon(s):
Hue—5YR to 10YR
Value—4 or 5
Chroma—4 to 6

Texture—sandy clay loam, fine sandy loam, or loam with thin layers of sandy loam or loamy fine sand

E and Bt horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—sand, fine sand, loamy fine sand, or loamy sand; lamellae and/or bands of sandy loam, loam, or fine sandy loam

BC, CB, or C horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified; commonly fine sand, loamy fine sand, fine sandy loam, or loamy sand with thin strata of very fine sand or loam

861B2—Princeton-Bloomfield fine sands, 1 to 7 percent slopes, eroded

Setting

Landform: Dunes
Position on the landform: Princeton—shoulders and backslopes; Bloomfield—summits and shoulders (fig. 5)

Map Unit Composition

Princeton and similar soils: 45 percent
Bloomfield and similar soils: 40 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the surface soil and in the upper part of the subsoil
- Soils that have a darker surface soil and have less sand and more clay in the surface soil and in the upper part of the subsoil
- Soils that have less sand and more clay in the surface layer
- Soils that have slopes of less than 1 percent
- Soils that have slopes of more than 7 percent

Dissimilar soils:
- The somewhat poorly drained Stronghurst and Lawndale soils in the less sloping positions
- The poorly drained Thorp soils in depressions

Properties and Qualities of the Princeton Soil

Parent material: Eolian deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 1.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Properties and Qualities of the Bloomfield Soil

Parent material: Eolian sands
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Princeton—2e; Bloomfield—3s
Prime farmland category: Prime farmland
Hydric soil status: Princeton—not hydric; Bloomfield—not hydric

861D2—Princeton-Bloomfield fine sands, 7 to 15 percent slopes, eroded

Setting

Landform: Dunes
Position on the landform: Princeton—shoulders and backslopes; Bloomfield—summits and shoulders (fig. 5)

Map Unit Composition

Princeton and similar soils: 45 percent
Bloomfield and similar soils: 40 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the surface soil and in the upper part of the subsoil

- Soils that have a darker surface soil and have less sand and more clay in the surface soil and in the upper part of the subsoil
- Soils that have less sand and more clay in the surface layer
- Soils that have slopes of less than 7 percent
- Soils that have slopes of more than 15 percent

Dissimilar soils:
- The somewhat poorly drained Stronghurst and Lawndale soils in the less sloping positions
- The poorly drained Thorp soils in depressions

Properties and Qualities of the Princeton Soil

Parent material: Eolian deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very high

Properties and Qualities of the Bloomfield Soil

Parent material: Eolian sands
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Princeton—3e; Bloomfield—4e
Prime farmland category: Prime farmland
Hydric soil status: Princeton—not hydric; Bloomfield—not hydric

861F—Princeton-Bloomfield fine sands, 15 to 35 percent slopes

Setting

Landform: Dunes
Position on the landform: Backslopes

Map Unit Composition

Princeton and similar soils: 45 percent
Bloomfield and similar soils: 40 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the surface soil and in the upper part of the subsoil
- Soils that have less sand and more clay throughout and have carbonates at a depth of less than 40 inches
- Soils that have more clay and less sand in the surface layer
- Soils that have slopes of less than 15 percent
- Soils that have less sand and more clay throughout

Dissimilar soils:
- The well drained Middletown soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Princeton and Bloomfield soils

Properties and Qualities of the Princeton Soil

Parent material: Eolian deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very high

Properties and Qualities of the Bloomfield Soil

Parent material: Eolian sands
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Princeton—6e; Bloomfield—6e
Prime farmland category: Not prime farmland
Hydric soil status: Princeton—not hydric; Bloomfield—not hydric

Proctor Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Proctor silt loam, 0 to 2 percent slopes, at an elevation of about 705 feet; Peoria County, Illinois; about 204 feet north and 2,460 feet west of the southeast corner of sec. 3, T. 11 N., R. 6 E.; USGS Princeville topographic quadrangle; lat. 40 degrees 57 minutes 37 seconds N. and long. 89 degrees 48 minutes 08 seconds W.; UTM zone 16, 264168E 4538122N, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine roots; moderately acid; clear smooth boundary.

A—8 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

Bt1—11 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—16 to 23 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—23 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt4—28 to 33 inches; yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; friable; few very fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt5—33 to 46 inches; strong brown (7.5YR 5/6), stratified loam and sandy loam; weak coarse subangular blocky structure; very friable; few very fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; slightly acid; gradual smooth boundary.

2C—46 to 60 inches; strong brown (7.5YR 5/6), stratified sandy loam and loamy sand; massive; very friable; slightly acid.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of the diagnostic horizon: 40 to 65 inches

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam

Bt or BA horizon(s):
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt or 2BC horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam, silt loam, clay loam, sandy clay loam, loam, or sandy loam

2C horizon(s):
Hue—7.5YR, 10YR, 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, loam, or silt loam with strata of loamy sand or sand

7148A—Proctor silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Flood-plain steps

Map Unit Composition

Proctor and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface soil
- Soils that have more sand in the surface soil and in the upper part of the subsoil
- Soils that have less sand in the lower part of the subsoil
- Soils that have less sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The poorly drained Sawmill and somewhat poorly drained Tice soils in the lower areas
- The somewhat poorly drained Riley soils in the slightly lower areas
- The somewhat excessively drained Bloomfield and excessively drained Sparta soils in the more sloping positions

Properties and Qualities of the Proctor Soil

Parent material: Loess or other silty material over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Frequency and most likely period of flooding: Rare, November to June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Radford Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Radford silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 567 feet; Cass County, Illinois; 2,700 feet east and 1,320 feet south of the northwest corner of sec. 2, T. 17 N., R. 9 W.; USGS Ashland, Illinois, topographic quadrangle; lat. 39 degrees 57 minutes 24 seconds N. and long. 90 degrees 04 minutes 47 seconds W.; UTM zone 15, 749465E 442702N, NAD 83:

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; neutral; clear smooth boundary.
C—12 to 33 inches; dark grayish brown (10YR 4/2) and very dark grayish brown (10YR 3/2) silt loam with common thin grayish brown (10YR 5/2) and brown (10YR 5/3) lenses; massive; friable; few very fine roots; common faint very dark grayish brown (10YR 3/2) organic coatings in worm channels; few fine rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries throughout; neutral; clear smooth boundary.
Ab1—33 to 42 inches; very dark gray (10YR 3/1) silt loam; weak fine subangular blocky structure parting to moderate medium granular; friable; few very fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; slightly alkaline; gradual smooth boundary.
Ab2—42 to 72 inches; very dark gray (10YR 3/1) silt loam; moderate fine subangular blocky structure; friable; few very fine roots; few distinct gray (10YR 6/1) (dry) clay

depletions on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Bgb—72 to 80 inches; grayish brown (10YR 5/2) silt loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings lining root channels and pores; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of the diagnostic horizon: 10 to 20 inches
Depth to the buried soil: 20 to 40 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

C horizon(s):
Hue—10YR
Value—2 to 6
Chroma—1 to 4
Texture—silt loam

Ab horizon(s):
Hue—10YR or N
Value—2 or 3
Chroma—0 or 1
Texture—silt loam, silty clay loam, clay loam, or loam

Bgb horizon(s) (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silt loam, silty clay loam, clay loam, or loam

3074A—Radford silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains (fig. 5; fig. 6; fig. 7)

Map Unit Composition

Radford and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a buried soil at a depth of more than 40 inches
- Soils that have a buried soil at a depth of less than 20 inches
- Soils that have a lighter colored surface layer
- Soils that are subject to occasional flooding

Dissimilar soils:
- The well drained Arenzville soils in positions similar to those of the Radford soil
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Radford Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Riley Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Riley silty clay loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 470 feet; Adams County, Illinois; 1,595 feet east and 340 feet south of the northwest corner of sec. 2, T. 3 S., R. 9 W.; USGS Quincy Southwest, Illinois, topographic quadrangle; lat. 39 degrees 50 minutes 52 seconds N. and long. 91 degrees 24 minutes 41 seconds W.; UTM zone 15, 635918E 4412075N, NAD 83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; moderate fine granular structure; firm; common fine roots throughout; very few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A—7 to 13 inches; very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium subangular blocky structure; firm; common fine roots throughout; moderately acid; abrupt smooth boundary.

Bw1—13 to 19 inches; dark grayish brown (10YR 4/2) silty clay loam; weak coarse subangular blocky structure; firm; common fine roots throughout and common very fine and fine roots in cracks; very few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; many fine distinct brown (7.5YR 4/3) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

Bw2—19 to 27 inches; grayish brown (10YR 5/2) loam; moderate coarse subangular blocky structure; firm; common very fine and fine roots in cracks; many fine and medium distinct dark yellowish brown (10YR 3/6) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

2Bw3—27 to 36 inches; brown (10YR 4/3) loamy sand; weak coarse subangular blocky structure; friable; few fine faint dark yellowish brown (10YR 4/4) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

2C1—36 to 60 inches; brown (10YR 5/3) sand; single grain; loose; neutral; clear smooth boundary.

2C2—60 to 80 inches; 60 percent brown (10YR 5/3) and 40 percent pale brown (10YR 6/3) sand; single grain; loose; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of the diagnostic horizon: 18 to 40 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silty clay loam, clay loam, silt loam, or loam

Bw horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam, clay loam, sandy clay loam, loam, or silt loam

2Bw or 2C horizon(s):
Hue—10YR
Value—4 to 7
Chroma—2 to 4
Texture—loamy sand, sand, or loamy fine sand; strata of fine sandy loam, silt loam, or loam in some pedons

8452A—Riley loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains (fig. 8)

Map Unit Composition

Riley and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have less sand throughout
- Soils that have less sand in the surface soil and subsoil

Dissimilar soils:
- The poorly drained Beaucoup soils in swales

Properties and Qualities of the Riley Soil

Parent material: Alluvium over sandy sediments

Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Occasional, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Ross Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Ross silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 590 feet; Tazewell County, Illinois; 1,490 feet west and 232 feet north of the southeast corner of sec. 28, T. 23 N., R. 3 W.; USGS Hopedale, Illinois, topographic quadrangle; lat. 40 degrees 24 minutes 39 seconds N. and long. 89 degrees 26 minutes 32 seconds W.; UTM zone 16, 292769E 4476226N, NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

A—8 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine and fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw1—13 to 27 inches; very dark grayish brown (10YR 3/2) loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; gradual smooth boundary.

Bw2—27 to 34 inches; dark brown (10YR 3/3) loam, brown (10YR 4/3) dry; weak fine and medium subangular blocky structure; friable; few very fine and coarse roots; common distinct very dark gray (10YR 3/1) and few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; gradual smooth boundary.

Bw3—34 to 43 inches; brown (10YR 4/3) loam; weak medium subangular blocky structure; very friable; few very fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; gradual smooth boundary.

C1—43 to 54 inches; brown (10YR 4/3) sandy loam; massive; very friable; few very fine and fine roots; neutral; gradual smooth boundary.

C2—54 to 60 inches; brown (10YR 4/3) sandy loam; massive; very friable; few fine faint grayish brown (10YR 5/2) iron depletions; 5 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 40 inches
Depth to the base of the diagnostic horizon: 24 to 45 inches
Depth to carbonates: More than 45 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—loam, silt loam, or silty clay loam

Bw horizon(s):
Hue—10YR
Value—2 to 5
Chroma—1 to 4
Texture—sandy loam, loam, silt loam, clay loam, or silty clay loam

C horizon(s):
Hue—10YR, 7.5YR, or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—sandy loam, loam, silt loam, or sandy clay loam; strata containing more sand below a depth of 40 inches in some pedons

3073A—Ross silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Ross and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface soil
- Soils that have a dark surface soil less than 24 inches thick
- Soils that have less sand throughout

Dissimilar soils:
- The somewhat poorly drained Tice soils in the slightly lower positions
- The poorly drained Sawmill soils in the lower positions

Properties and Qualities of the Ross Soil

Parent material: Loamy alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table: 4 to 6 feet below the surface
Frequency and most likely period of flooding: Frequent, November to June

Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Rozetta Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Rozetta silt loam, 0 to 2 percent slopes, at an elevation of 890 feet; Stephenson County, Illinois; 150 feet south and 500 feet east of the center of sec. 18, T. 27 N., R. 6 E.; USGS Pearl City, Illinois, topographic quadrangle; lat. 42 degrees 20 minutes 00 seconds N. and long. 89 degrees 51 minutes 19 seconds W.; UTM zone 16, 264752E 4690738N, NAD 83:

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 6/1) dry; weak medium granular structure; friable; many fine roots throughout; moderately acid; clear wavy boundary.
E—4 to 11 inches; dark grayish brown (10YR 4/2) silt loam; weak medium platy structure; friable; many fine roots throughout; strongly acid; clear smooth boundary.
BE—11 to 14 inches; brown (10YR 4/3) silty clay loam; weak medium subangular blocky structure; firm; many fine roots between peds; few faint brown (10YR 5/3) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
Bt1—14 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; many fine roots between peds; many faint brown (10YR 5/3) clay films on faces of peds; strongly acid; clear smooth boundary.
Bt2—21 to 39 inches; brown (10YR 5/3) silty clay loam; moderate medium and coarse subangular blocky structure; firm; common fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common faint pale brown (10YR 6/3) (dry) silt coatings on faces of peds; common medium faint light yellowish brown (10YR 6/4) and brown (10YR 4/3) masses of iron and manganese accumulation in the matrix; few medium faint grayish brown (10YR 5/2) iron depletions in the matrix; strongly acid; clear smooth boundary.
Bt3—39 to 50 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse subangular blocky structure; firm; common fine roots; few faint brown (10YR 4/3) clay films on faces of peds; common medium faint pale brown (10YR 6/3) and common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.
C—50 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common medium distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 42 to 72 inches

Ap or A horizon(s):
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam or silty clay loam

E horizon(s) (where present):
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam

C horizon(s):
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

279B—Rozetta silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders (fig. 4)

Map Unit Composition

Rozetta and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a darker surface layer
- Soils that have more clay in the surface layer
- Soils that have carbonates at a depth of less than 60 inches and do not have a seasonal high water table within a depth of 6 feet
- Soils that do not have a seasonal high water table within a depth of 6 feet
- Soils that have slopes of more than 5 percent

Dissimilar soils:
- The somewhat poorly drained Keomah soils in the less sloping areas
- The well drained Bold soils on shoulders and backslopes
- The well drained Hickory soils on backslopes

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

279B3—Rozetta silty clay loam, 2 to 5 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 4)

Map Unit Composition

Rozetta and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the surface layer
- Soils that have carbonates at a depth of less than 60 inches and do not have a seasonal high water table within a depth of 6 feet
- Soils that have a darker surface layer
- Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The well drained Bold soils on shoulders and backslopes
- The somewhat poorly drained Keomah soils in the less sloping areas
- The well drained Hickory soils on backslopes

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 1.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

279C2—Rozetta silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Rozetta and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 5 percent
- Soils that have carbonates at a depth of less than 60 inches and do not have a seasonal high water table within a depth of 6 feet
- Soils that have a darker surface layer
- Soils that have more clay in the surface layer
- Soils that have carbonates at a depth of less than 60 inches

Dissimilar soils:
- The somewhat poorly drained Keomah soils in the less sloping areas
- The well drained Bold and Hickory soils on the lower backslopes

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

279C3—Rozetta silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Rozetta and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 5 percent
- Soils that have carbonates at a depth of less than 60 inches and do not have a seasonal high water table within a depth of 6 feet
- Soils that have a darker surface layer
- Soils that have less clay in the surface layer

Dissimilar soils:
- The somewhat poorly drained Keomah soils in the less sloping areas
- The well drained Bold and Hickory soils on the lower backslopes

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 1.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Sable Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Sable silty clay loam, 0 to 2 percent slopes, at an elevation of 732 feet; Warren County, Illinois; 1,281 feet south and 97 feet west of the northeast corner of sec. 14, T. 9 N., R.

3 W.; USGS Kirkwood East, Illinois, topographic quadrangle; lat. 40 degrees 46 minutes 22 seconds N. and long. 90 degrees 41 minutes 34 seconds W.; UTM zone 15, 694709E 4516111N, NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; firm; moderately acid; abrupt smooth boundary.

A—8 to 19 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine angular blocky structure; firm; few fine faint rounded dark reddish brown (5YR 3/2) iron and manganese concretions throughout; slightly acid; clear smooth boundary.

AB—19 to 23 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine angular blocky structure; firm; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine faint rounded dark reddish brown (5YR 3/2) iron and manganese concretions throughout; slightly acid; clear smooth boundary.

Bg—23 to 29 inches; dark gray (10YR 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine and medium distinct rounded dark reddish brown (5YR 3/2) iron and manganese concretions throughout; common medium distinct brown (10YR 5/3) masses of iron and manganese accumulation in the matrix; few medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—29 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; many fine and medium distinct rounded dark reddish brown (5YR 3/2) iron and manganese concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

Btg2—38 to 47 inches; gray (N 5/) silt loam; weak medium prismatic structure parting to weak medium and coarse angular blocky; firm; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine distinct rounded dark reddish brown (5YR 3/2) iron and manganese concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; gradual smooth boundary.

Cg—47 to 60 inches; gray (N 6/) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches
Depth to carbonates: More than 40 inches
Depth to the base of the diagnostic horizon: 40 to 60 inches
Other features: Some pedons have a BC or BCg horizon.

Ap or A horizon(s):
Hue—10YR, 5Y, or N
Value—2 or 3
Chroma—0 or 1
Texture—silty clay loam

AB or BA horizon (where present):
Hue—10YR, 5Y, or N
Value—2 or 3
Chroma—0 or 1
Texture—silty clay loam

Btg or Bg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

Cg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silt loam or silty clay loam

68A—Sable silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Talfs and toeslopes (fig. 6)

Map Unit Composition

Sable and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 1 foot and have more clay in the upper part of the subsoil
- Soils that have a thinner dark surface layer, have more clay in the upper part of the subsoil, and have a seasonal high water table at a depth of more than 1 foot
- Soils that have carbonates at a depth of less than 40 inches
- Soils that have a thinner dark surface soil and have more clay in the upper part of the subsoil

Dissimilar soils:
- The well drained Greenbush and Osco soils on summits
- The moderately well drained Buckhart soils on summits

Properties and Qualities of the Sable Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5.0 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Sawmill Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 535 feet; Sangamon County, Illinois; 300 feet south and 750 feet east of the northwest corner of sec. 20, T. 15 N., R. 4 W.; USGS New City, Illinois, topographic quadrangle; lat. 39 degrees 44 minutes 34 seconds N. and long. 89 degrees 34 minutes 15 seconds W.; UTM zone 16, 279712E 4402375N, NAD 83:

Ap—0 to 10 inches; very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 mm in diameter; slightly acid; clear smooth boundary.

A1—10 to 17 inches; black (10YR 2/1) and very dark grayish brown (10YR 3/2) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 mm in diameter; few fine faint rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

A2—17 to 25 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium angular blocky structure; firm; few fine roots; few fine faint rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

AB—25 to 32 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots; few fine faint rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bg—32 to 40 inches; dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine roots; few fine faint rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Btg1—40 to 49 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine distinct rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) and common fine distinct yellowish brown (10YR 5/4) masses of iron and manganese accumulation in the matrix; slightly alkaline; clear smooth boundary.

Btg2—49 to 58 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure; firm; common distinct gray (10YR 5/1) clay films on faces of peds; few fine prominent rounded black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Cg—58 to 65 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; very dark gray (10YR 3/1) channel linings and fillings; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation lining pores; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to the base of the diagnostic horizon: 36 to 60 inches
Other features: The Sawmill soil in map unit 3107S has, within a depth of 80 inches, a sandy substratum. The properties are the same as those described for the 2Cg horizon(s) below.

Ap, A, or AB horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam

Bg or Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam

Cg horizon(s) (where present):
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam, clay loam, silt loam, or loam

2Cg horizon(s) (where present):
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—fine sand, sand, loamy fine sand, or loamy sand

3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface soil less than 24 inches thick
- Soils that have more sand throughout

- Soils that have a seasonal high water table at a depth of more than 1 foot and have a dark surface soil less than 24 inches thick
- Soils that are subject to flooding of long duration
- Soils that have more sand in the underlying material
- Soils that have more clay in the surface soil and subsoil
- Soils that are subject to occasional flooding

Dissimilar soils:
- The well drained Ross soils in the slightly higher positions
- The well drained Worthen soils in the higher positions

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

3107L—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface soil less than 24 inches thick
- Soils that have more sand throughout
- Soils that have a seasonal high water table at a depth of more than 1 foot and have a dark surface soil less than 24 inches thick
- Soils that have more clay in the surface soil and subsoil

Dissimilar soils:
- The well drained Arenzville soils in the slightly higher positions

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

3107S—Sawmill silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains (fig. 8)

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 1 foot and have a dark surface soil less than 24 inches thick
- Soils that have a seasonal high water table at a depth of more than 1 foot, have a dark surface soil less than 24 inches thick, and have more sand in the surface layer and subsoil
- Soils that have a dark surface soil less than 24 inches thick
- Soils that have more sand throughout
- Soils that have less sand in the underlying material
- Soils that are subject to occasional flooding
- Soils that have more clay in the surface soil and subsoil

Dissimilar soils:
- The well drained Arenzville and Ross soils in the slightly higher positions

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium over sandy sediments
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

Shiloh Series

Taxonomic classification: Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Typical Pedon

Shiloh silty clay loam, 0 to 2 percent slopes, at an elevation of about 595 feet; Christian County, Illinois; about 2,600 feet east and 132 feet south of the northwest corner of sec. 34, T. 16 N., R. 1 W.; USGS Niantic topographical quadrangle; lat. 39 degrees 48 minutes 03 seconds N. and long. 89 degrees 11 minutes 23 seconds W.; UTM zone 16, 312537E 4407932N, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; firm; few very fine roots; few fine rounded black (7.5YR 2/1) manganese concretions; slightly acid; abrupt smooth boundary.

A—7 to 15 inches; black (N 2.5/1) silty clay loam, very dark gray (10YR 3/1) dry; moderate very fine subangular blocky structure; firm; few very fine roots; few fine rounded black (7.5YR 2/1) manganese concretions; neutral; clear smooth boundary.

BA—15 to 27 inches; black (N 2.5/1) silty clay, very dark gray (10YR 3/1) dry; moderate very fine angular blocky structure; firm; few very fine roots; few fine rounded black (7.5YR 2/1) manganese concretions; neutral; clear smooth boundary.

Bg1—27 to 32 inches; olive gray (5Y 5/2) silty clay; moderate fine subangular blocky structure; firm; few very fine roots; many prominent very dark gray (10YR 3/1) pressure faces on peds; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bg2—32 to 39 inches; olive gray (5Y 5/2) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct dark grayish brown (10YR 4/2) pressure faces on peds; few prominent very dark gray (10YR 3/1) organic coatings lining pores; few fine rounded black (7.5YR 2/1) manganese concretions; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

Bg3—39 to 52 inches; olive gray (5Y 5/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few prominent very dark gray (10YR 3/1) organic coatings lining pores; few fine rounded black (10YR 2/1) manganese concretions; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

BCg—52 to 60 inches; olive gray (5Y 5/2) silt loam; weak medium subangular blocky structure; friable; few very fine roots; few prominent very dark gray (10YR 3/1) organic coatings lining pores; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

Cg—60 to 80 inches; gray (10YR 6/1) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation throughout; very slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 70 inches
Thickness of the mollic epipedon: 24 to 48 inches
Depth to carbonates: More than 39 inches
Other features: Some pedons have an AB or BA horizon.

Ap or A horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2, 2.5, or 3
Chroma—0 to 2
Texture—silty clay loam or silty clay

Bg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 5
Chroma—0 to 2
Texture—silty clay or silty clay loam

Cg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture—silty clay loam, silt loam, or silty clay

138A—Shiloh silty clay loam, 0 to 2 percent slopes

Setting

Landform: Depressions

Map Unit Composition

Shiloh and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thinner dark surface soil
- Soils that have less clay in the subsoil
- Soils that have less clay in the surface layer
- Soils that have a thinner dark surface soil and have less clay in the subsoil

Dissimilar soils:
- The well drained Osco soils on summits and shoulders
- The moderately well drained Buckhart soils on summits and shoulders

Properties and Qualities of the Shiloh Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 6.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 1 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Sparta Series

Taxonomic classification: Sandy, mixed, mesic Entic Hapludolls
Taxadjunct features: The Sparta soil in map unit 828D2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a mixed, mesic Typic Udipsamment.

Typical Pedon

Sparta loamy sand, 1 to 6 percent slopes, at an elevation of 487 feet; Adams County, Illinois; 1,510 feet north and 2,290 feet east of the southwest corner of sec. 21, T. 3 S., R. 8 W.; USGS Marblehead, Illinois, topographic quadrangle; lat. 39 degrees 47 minutes 29 seconds N. and long. 91 degrees 19 minutes 57 seconds W.; UTM zone 15, 642784E 4405939N, NAD 83:

Ap—0 to 9 inches; very dark brown (10YR 2/2) loamy sand, dark grayish brown (10YR 4/2) dry; weak fine granular structure; very friable; common very fine roots; neutral; clear smooth boundary.
A—9 to 18 inches; very dark brown (10YR 2/2) loamy sand, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; common very fine roots; slightly acid; clear smooth boundary.
AB—18 to 23 inches; dark brown (10YR 3/3) loamy sand, brown (10YR 5/3) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; common black (10YR 2/1) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bw—23 to 34 inches; brown (10YR 4/3) loamy sand; weak fine subangular blocky structure parting to weak fine granular; very friable; few faint dark brown (10YR 3/3) organic coatings on faces of peds; slightly acid; clear smooth boundary.

C1—34 to 39 inches; yellowish brown (10YR 5/6) sand; single grain; loose; 1 percent gravel; slightly acid; clear smooth boundary.

C2—39 to 60 inches; yellowish brown (10YR 5/6) sand; single grain; loose; 5 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of horizon exhibiting soil development: 24 to 45 inches

Ap or A horizon(s):
Hue—10YR or 7.5YR
Value—2 or 3
Chroma—1 or 2
Texture—loamy fine sand, loamy sand, fine sand, or sand
Content of rock fragments—0 to 10 percent

Bw horizon(s):
Hue—10YR or 7.5YR
Value—3 to 6
Chroma—3 to 6
Texture—loamy fine sand, loamy sand, fine sand, or sand
Content of rock fragments—0 to 10 percent

C horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—sand or fine sand
Content of rock fragments—0 to 10 percent

828B—Broadwell-Sparta complex, 1 to 7 percent slopes

Setting

Landform: Stream terraces; ground moraines
Position on the landform: Broadwell—shoulders and backslopes; Sparta—summits and shoulders (fig. 7)

Map Unit Composition

Broadwell and similar soils: 50 percent
Sparta and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have slopes of less than 1 percent
- Soils that have slopes of more than 7 percent

Dissimilar soils:
- The poorly drained Thorp soils in depressions
- The somewhat poorly drained Lawndale soils in the less sloping areas

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Sparta Soil

Parent material: Eolian sands
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Broadwell—2e; Sparta—4s
Prime farmland category: Prime farmland
Hydric soil status: Broadwell—not hydric; Sparta—not hydric

828D2—Broadwell-Sparta complex, 7 to 15 percent slopes, eroded

Setting

Landform: Ground moraines; stream terraces
Position on the landform: Broadwell—shoulders and backslopes; Sparta—summits and shoulders (fig. 7)

Map Unit Composition

Broadwell and similar soils: 50 percent
Sparta and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have slopes of less than 7 percent

Dissimilar soils:
- The poorly drained Thorp soils in depressions
- The somewhat poorly drained Lawndale soils in the less sloping areas

Properties and Qualities of the Broadwell Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sparta Soil

Parent material: Eolian sands
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Broadwell—3e; Sparta—6s
Prime farmland category: Not prime farmland
Hydric soil status: Broadwell—not hydric; Sparta—not hydric

St. Charles Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

St. Charles silt loam, 2 to 5 percent slopes, at an elevation of about 623 feet; Bureau County, Illinois; about 80 feet north and 2,170 feet west of the southeast corner of sec. 26, T. 16 N., R. 8 E.; USGS Wyanet, Illinois, topographic quadrangle: lat. 41 degrees 20 minutes 09 seconds N. and long. 89 degrees 32 minutes 12 seconds W.; UTM zone 16, 287732E 4579148N, NAD 83:

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; few fine roots; moderately acid; abrupt smooth boundary.

Bt1—8 to 15 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; many distinct dark brown (10YR 3/3) organic coatings and dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—15 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—21 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine rounded distinct black (10YR 2/1) manganese accumulations; moderately acid; clear smooth boundary.

Bt4—34 to 44 inches; yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; many distinct dark yellowish brown (10YR 4/4) clay films and many distinct light gray (10YR 7/2) silt coatings on faces of peds; common medium faint brown (7.5YR 4/4) masses of iron and manganese; moderately acid; clear smooth boundary.

Bt5—44 to 50 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; many distinct dark yellowish brown (10YR 4/4) clay films and light gray (10YR 7/2) silt coatings on faces of peds; few fine distinct strong brown (7.5YR 5/6) masses of iron; moderately acid; clear smooth boundary.

2Bt6—50 to 57 inches; yellowish brown (10YR 5/6), stratified loam, sandy loam, and silt loam; weak medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2C—57 to 60 inches; yellowish brown (10YR 5/4), stratified loam and silt loam; massive; friable; moderately acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: More than 35 inches
Depth to carbonates: More than 44 inches
Thickness of the loess: 40 to 60 inches

Ap or A horizon(s):
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam

BE or Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt or 2BC horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—commonly stratified, including textures of loam, sandy loam, fine sandy loam, sandy clay loam, clay loam, and silt loam

2C horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—commonly stratified, including textures of silt loam, loam, sandy loam, gravelly loam, and gravelly sandy loam
Content of rock fragments—0 to 20 percent

243A—St. Charles silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Talfs and summits

Map Unit Composition

St. Charles and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that have more sand in the underlying material
- Soils that have sandy material at a depth of less than 40 inches
- Soils that have a thicker dark surface soil

Dissimilar soils:
- The somewhat excessively drained Bloomfield and well drained Princeton soils in the more sloping positions
- The somewhat poorly drained Lawndale soils in the slightly lower positions

Properties and Qualities of the St. Charles Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None

Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

243B—St. Charles silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits and shoulders

Map Unit Composition

St. Charles and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have sandy material at a depth of less than 40 inches
- Soils that have more sand in the underlying material

Dissimilar soils:
- The well drained Arenzville soils on flood plains
- The somewhat excessively drained Bloomfield and well drained Princeton soils in the more sloping positions

Properties and Qualities of the St. Charles Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Stronghurst Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Stronghurst silt loam, 0 to 2 percent slopes, at an elevation of 680 feet; Bureau County, Illinois; 582 feet south and 78 feet west of the northeast corner of sec. 23, T. 16 N., R. 8 E.; USGS Wyanet, Illinois, topographic quadrangle; lat. 41 degrees 16 minutes 32 seconds N. and long. 89 degrees 31 minutes 47 seconds W.; UTM zone 16, 288118E 4572438N, NAD 83:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; very friable; few fine roots; common fine prominent black (5YR 2/1) masses of manganese accumulation throughout; neutral; abrupt smooth boundary.

E—8 to 13 inches; brown (10YR 5/3) silt loam; moderate thin and very thin platy structure; friable; few fine roots; common fine distinct yellowish brown (10YR 5/6) and prominent yellowish brown (10YR 5/8) masses of iron accumulation and common fine prominent black (5YR 2/1) masses of manganese accumulation throughout; common fine faint light brownish gray (10YR 6/2) iron depletions throughout; strongly acid; clear smooth boundary.

Bt1—13 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct grayish brown (10YR 5/2) clay films and many distinct light gray (10YR 7/2) silt coatings on faces of peds; common fine prominent yellowish brown (10YR 5/8) and distinct strong brown (7.5YR 5/6) masses of iron accumulation and common fine distinct black (10YR 2/1) masses of manganese accumulation throughout; common fine distinct light brownish gray (10YR 6/2) iron depletions throughout; strongly acid; clear smooth boundary.

Bt2—24 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/8) and distinct strong brown (7.5YR 5/6) masses of iron accumulation and common fine distinct black (10YR 2/1) masses of manganese accumulation throughout; common fine distinct light brownish gray (10YR 6/2) iron depletions throughout; strongly acid; clear smooth boundary.

Bt3—30 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/8) and distinct strong brown (7.5YR 5/6) masses of iron accumulation and common fine distinct black (10YR 2/1) masses of manganese accumulation throughout; common fine distinct light brownish gray (10YR 6/2) iron depletions throughout; strongly acid; clear smooth boundary.

Bt4—38 to 47 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse prismatic structure; friable; few fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation and common fine distinct black (10YR 2/1) masses of manganese accumulation throughout; common fine distinct light brownish gray (10YR 6/2 and 2.5Y 6/2) iron depletions throughout; strongly acid; gradual smooth boundary.

C—47 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common fine faint strong brown (7.5YR 5/6) masses of iron accumulation and common fine prominent black (10YR 2/1) masses of manganese accumulation throughout; common fine prominent light brownish gray (2.5Y 6/2) iron depletions throughout; moderately acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: More than 42 inches
Other features: The Stronghurst soils in Menard County have, within a depth of 80 inches, a sandy substratum. The properties are the same as those described for the 2C or 2Cg horizon(s) below.

Ap or A horizon(s):
Hue—10YR
Value—3 to 6
Chroma—1 or 2
Texture—silt loam

E horizon(s):
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt or Btg horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam or silt loam

C or Cg horizon(s) (where present):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam or silty clay loam

2C or 2Cg horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—sand, fine sand, loamy sand, or loamy fine sand

270A—Stronghurst silt loam, sandy substratum, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Talfs and summits (fig. 5)

Map Unit Composition

Stronghurst and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker dark surface soil
- Soils that have a darker surface layer, have more clay in the subsoil, and have less sand in the underlying material
- Soils that have more clay in the upper part of the subsoil
- Soils that have more clay in the subsoil and less sand in the underlying material

Dissimilar soils:
- The well drained Middletown soils on the slightly higher summits and shoulders
- The somewhat excessively drained Bloomfield soils on the higher summits and shoulders
- The well drained Princeton soils on the higher shoulders and backslopes
- The poorly drained Denny, Rushville, and Sable soils in depressions

Properties and Qualities of the Stronghurst Soil

Parent material: Loess over eolian sands
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate to rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 0.5 foot to 2.0 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Sylvan Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Sylvan silt loam, in an area of Sylvan-Bold silt loams, 18 to 35 percent slopes, at an elevation of 620 feet; Cass County, Illinois; 210 feet south and 2,580 feet west of the northeast corner of sec. 28, T. 18 N., R. 10 W.; USGS Virginia, Illinois, topographic quadrangle; lat. 39 degrees 59 minutes 21 seconds N. and long. 90 degrees 13 minutes 44 seconds W.; UTM zone 15, 736584E 4430238N, NAD 83:

A—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

E1—4 to 8 inches; dark brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium platy structure parting to weak very fine subangular blocky; friable; few very fine and medium roots; many faint dark grayish brown (10YR 4/2) clay depletions on faces of peds; moderately acid; clear smooth boundary.

E2—8 to 10 inches; dark yellowish brown (10YR 4/4) silt loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky structure; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay depletions on faces of peds; slightly acid; clear smooth boundary.

Bt1—10 to 17 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure; friable; few 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 blocky structure; friable; few very fine and medium roots; many distinct dark yellowish brown (10YR 4/4) and few distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

BCt—23 to 27 inches; yellowish brown (10YR 5/6) silt loam; weak fine and medium subangular blocky structure; friable; few very fine roots; few distinct dark yellowish brown (10YR 4/4) clay films lining pores; neutral; clear smooth boundary.

C1—27 to 41 inches; 80 percent yellowish brown (10YR 5/6) and 20 percent light brownish gray (10YR 6/2) silt loam; massive; friable; few very fine roots; the light brownish gray matrix color is a relict feature; few fine and medium snail shells; strongly effervescent; slightly alkaline; clear smooth boundary.

C2—41 to 64 inches; 60 percent light brownish gray (10YR 6/2) and 40 percent yellowish brown (10YR 5/6) silt loam; massive; friable; few very fine roots; the light brownish gray matrix color is a relict feature; common fine and medium snail shells; strongly effervescent; moderately alkaline; clear smooth boundary.

C3—64 to 80 inches; 55 percent light brownish gray (10YR 6/2) and 45 percent yellowish brown (10YR 5/6) silt loam; massive; friable; common medium prominent irregular reddish yellow (7.5YR 6/8) and few fine prominent irregular strong brown (7.5YR 4/6) masses of iron and manganese accumulation lining pores; common fine and medium snail shells; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of the diagnostic horizon: 22 to 40 inches
Depth to carbonates: 22 to 40 inches
Other features: Some pedons have an EB or BE horizon.

Ap horizon(s) (where present):
Hue—10YR
Value—4 to 6 (6 or 7 dry)
Chroma—2 to 4
Texture—silt loam; silty clay loam in pedons in severely eroded areas

A horizon(s) (where present):
Hue—10YR
Value—3 to 5 (5 or 6 dry)
Chroma—2 or 3
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—4 or 5 (5 or 6 dry)
Chroma—2 to 4
Texture—silt loam

Bt, BCt, or BC horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam; subhorizons of silt loam in some pedons

C or Cg horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6

Chroma—2 to 6
Texture—silt loam or silt

898D2—Hickory-Sylvan complex, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes

Map Unit Composition

Hickory and similar soils: 50 percent
Sylvan and similar soils: 45 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 18 percent
- Soils that have more clay in the surface layer

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—3e; Sylvan—3e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

898D3—Hickory-Sylvan complex, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes

Map Unit Composition

Hickory and similar soils: 50 percent
Sylvan and similar soils: 45 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 18 percent
- Soils that have less clay in the surface layer

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—4e; Sylvan—4e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

898F2—Hickory-Sylvan complex, 18 to 35 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes (fig. 4)

Map Unit Composition

Hickory and similar soils: 50 percent
Sylvan and similar soils: 35 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 18 percent
- Soils that have more clay in the surface layer
- Soils that have slopes of more than 35 percent

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils
- The well drained Fayette soils on shoulders and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—6e; Sylvan—6e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

898F3—Hickory-Sylvan complex, 18 to 35 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes

Map Unit Composition

Hickory and similar soils: 50 percent
Sylvan and similar soils: 35 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 18 percent
- Soils that have less clay in the surface layer
- Soils that have slopes of more than 35 percent

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils
- The well drained Fayette soils on shoulders and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—6e; Sylvan—6e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

898G—Hickory-Sylvan silt loams, 35 to 60 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Hickory—lower backslopes; Sylvan—upper backslopes (fig. 4)

Map Unit Composition

Hickory and similar soils: 60 percent
Sylvan and similar soils: 25 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 35 percent
- Soils that have more clay in the surface layer

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Bold soils in positions similar to those of the Hickory and Sylvan soils
- The well drained Fayette soils on shoulders and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Hickory Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hickory—7e; Sylvan—7e
Prime farmland category: Not prime farmland
Hydric soil status: Hickory—not hydric; Sylvan—not hydric

962C2—Sylvan-Bold silt loams, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 4)

Map Unit Composition

Sylvan and similar soils: 60 percent
Bold and similar soils: 40 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 6 feet and have carbonates at a depth of more than 40 inches
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 10 percent
- Soils that have more clay in the surface layer

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—3e; Bold—3e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962C3—Sylvan-Bold complex, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 4)

Map Unit Composition

Sylvan and similar soils: 60 percent
Bold and similar soils: 40 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 6 feet and have carbonates at a depth of more than 40 inches
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 10 percent
- Soils that have less clay in the surface layer

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—4e; Bold—4e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962D2—Sylvan-Bold silt loams, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes (fig. 4)

Map Unit Composition

Sylvan and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 18 percent
- Soils that have more clay in the surface layer

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—3e; Bold—3e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962D3—Sylvan-Bold complex, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Sylvan and similar soils: 60 percent
Bold and similar soils: 30 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 18 percent
- Soils that have less clay in the surface layer
- Soils that have slopes of less than 10 percent

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—4e; Bold—4e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962E2—Sylvan-Bold silt loams, 18 to 25 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Sylvan and similar soils: 60 percent
Bold and similar soils: 30 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a thicker dark surface layer
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 25 percent
- Soils that have more clay in the surface layer
- Soils that have slopes of less than 18 percent
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Fayette soils on summits and the less sloping backslopes

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—6e; Bold—6e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962F2—Sylvan-Bold silt loams, 18 to 35 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Sylvan and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have slopes of more than 35 percent
- Soils that have more clay in the surface layer
- Soils that have slopes of less than 18 percent
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders
- The well drained Fayette soils on summits and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—6e; Bold—6e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

962G—Sylvan-Bold silt loams, 35 to 60 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Sylvan and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have more sand throughout and have carbonates at a depth of more than 40 inches
- Soils that have more clay in the surface layer
- Soils that have slopes of less than 35 percent
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The well drained Rozetta soils on summits and shoulders

- The well drained Fayette soils on summits and the less sloping backslopes
- The well drained Arenzville soils on flood plains

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Sylvan—7e; Bold—7e
Prime farmland category: Not prime farmland
Hydric soil status: Sylvan—not hydric; Bold—not hydric

Tallula Series

Taxonomic classification: Coarse-silty, mixed, superactive, mesic Typic Hapludolls

Typical Pedon

Tallula silt loam, in an area of Tallula-Bold silt loams, 10 to 18 percent slopes, eroded, at an elevation of 585 feet; Cass County, Illinois; 1,330 feet south and 154 feet east of the northwest corner of sec. 4, T. 17 N., R. 10 W.; USGS Virginia, Illinois, topographic quadrangle; lat. 39 degrees 57 minutes 26 seconds N. and long. 90 degrees 14 minutes 17 seconds W.; UTM zone 15, 735911E 4426668N, NAD 83:

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; neutral; abrupt smooth boundary.
A2—4 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine and moderate medium granular structure; friable; common very fine roots; neutral; clear smooth boundary.
Bw—10 to 16 inches; brown (10YR 4/3) silt loam; weak very fine and fine subangular blocky structure; friable; few very fine roots; many faint dark brown (10YR 3/3) organic coatings on faces of peds; neutral; clear smooth boundary.
Bt—16 to 26 inches; yellowish brown (10YR 5/4) silt loam; weak fine and medium subangular blocky structure; friable; few very fine roots; common faint brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.
C1—26 to 30 inches; 80 percent pale brown (10YR 6/3) and 20 percent yellowish brown (10YR 5/6) silt loam; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; massive; friable; few very fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.
C2—30 to 60 inches; 80 percent light brownish gray (10YR 6/2) and 20 percent yellowish brown (10YR 5/6) silt; many medium and coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation; massive; friable; few very fine roots; few fine black (10YR 2/1) masses of manganese accumulation; few fine carbonate masses; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to the base of the diagnostic horizon: 15 to 35 inches
Depth to carbonates: 15 to 35 inches
Thickness of the mollic epipedon: 7 to 15 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bw or Bt horizon(s):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam

C horizon(s):
Hue—10YR
Value—5 or 6
Chroma—2 to 6
Texture—silt loam or silt

34B2—Tallula silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

Tallula and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the subsoil and have carbonates at a depth of more than 35 inches
- Soils that have more clay in the subsoil
- Soils that have a lighter colored surface layer
- Soils that have slopes of more than 5 percent

Dissimilar soils:
- The well drained Bold soils on shoulders and backslopes
- The moderately well drained Buckhart soils on summits

Properties and Qualities of the Tallula Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

965C2—Tallula-Bold silt loams, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 6)

Map Unit Composition

Tallula and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 35 inches and have more clay in the subsoil
- Soils that have more clay in the subsoil

- Soils that have slopes of less than 5 percent
- Soils that have slopes of more than 10 percent

Dissimilar soils:
- The moderately well drained Buckhart soils on summits and shoulders

Properties and Qualities of the Tallula Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Tallula—3e; Bold—3e
Prime farmland category: Not prime farmland
Hydric soil status: Tallula—not hydric; Bold—not hydric

965D2—Tallula-Bold silt loams, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes (fig. 6)

Map Unit Composition

Tallula and similar soils: 50 percent
Bold and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 35 inches and have more clay in the subsoil
- Soils that have more clay in the subsoil
- Soils that have slopes of less than 10 percent
- Soils that have slopes of more than 18 percent

Dissimilar soils:
- The moderately well drained Buckhart soils on summits and shoulders

Properties and Qualities of the Tallula Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Bold Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Tallula—3e; Bold—3e

Prime farmland category: Not prime farmland
Hydric soil status: Tallula—not hydric; Bold—not hydric

Thebes Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Thebes silt loam, 5 to 10 percent slopes, at an elevation of about 670 feet; Mercer County, Illinois; about 1,060 feet west and 1,800 feet south of the northeast corner of sec. 3, T. 13 N., R. 3 W.; USGS Aledo East topographic quadrangle; lat. 41 degrees 09 minutes 02 seconds N. and long. 90 degrees 42 minutes 30 seconds W.; UTM zone 15, 692289E 4558005N, NAD 83:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; slightly acid; clear smooth boundary.

Bt1—9 to 14 inches; yellowish brown (10YR 5/4) silty clay loam; weak fine and medium subangular blocky structure; friable; few distinct brown (10YR 5/3) clay films on faces of peds and in pores; strongly acid; clear wavy boundary.

Bt2—14 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; moderately acid; clear wavy boundary.

Bt3—26 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few medium faint pale brown (10YR 6/3) and few medium distinct strong brown (7.5YR 4/6) masses of iron and manganese accumulation in the matrix; slightly acid; clear wavy boundary.

2Bt4—31 to 40 inches; dark yellowish brown (10YR 4/4) loam; moderate medium subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common coarse faint pale brown (10YR 6/3) and common coarse distinct strong brown (7.5YR 4/6) masses of iron and manganese accumulation in the matrix; slightly acid; clear wavy boundary.

2BC—40 to 50 inches; 55 percent yellowish brown (10YR 5/4) and 43 percent brown (7.5YR 4/4), stratified sandy loam and loamy sand; weak medium subangular blocky structure; friable; few medium distinct pale brown (10YR 6/3) masses of iron and manganese accumulation in the matrix; moderately acid; clear wavy boundary.

2C—50 to 80 inches; dark yellowish brown (10YR 4/4), stratified loamy sand and sand; single grain; loose; common medium and coarse faint brown (7.5YR 4/4) masses of iron and manganese accumulation in the matrix; slightly acid.

Range in Characteristics

Thickness of the loess or silty material: 20 to 40 inches
Depth to the base of the diagnostic horizon: 25 to 55 inches

Ap or A horizon(s):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—4 or 5

Chroma—3 to 6
Texture—silt loam

Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—loam, sandy loam, fine sandy loam, sandy clay loam, or clay loam

2BC horizon(s) (where present):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—sandy loam, loamy sand, or sand

2C horizon(s):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—loamy sand, fine sand, loamy fine sand, or sand; strata of sandy loam, fine sandy loam, or silt loam in the lower part of the profile in some pedons

212C2—Thebes silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines; knolls
Position on the landform: Summits and backslopes

Map Unit Composition

Thebes and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the surface layer
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have sand at a depth of more than 40 inches
- Soils that have more clay in the surface layer
- Soils that have more sand in the upper part of the subsoil

Properties and Qualities of the Thebes Soil

Parent material: Loess over eolian sands
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate

Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Thorp Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon

Thorp silt loam, 0 to 2 percent slopes, at an elevation of about 640 feet; La Salle County, Illinois; 990 feet north and 2,240 feet west of the southeast corner of sec. 27, T. 36 N., R. 5 E.; USGS Sheridan, Illinois, topographic quadrangle; lat. 41 degrees 33 minutes 42 seconds N. and long. 88 degrees 38 minutes 49 seconds W.; UTM zone 16, 362665E 4602414N, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate very fine granular structure; friable; neutral; abrupt smooth boundary.

A—7 to 14 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

Eg—14 to 19 inches; dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; weak fine granular structure; friable; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg1—19 to 21 inches; dark gray (10YR 4/1) and dark grayish brown (2.5Y 4/2) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg2—21 to 33 inches; gray (5Y 5/1) and olive gray (5Y 4/2) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg3—33 to 43 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure parting to moderate fine angular and subangular blocky; firm; many distinct very dark gray (10YR 3/1) and dark gray (N 4/) organo-clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation and distinct light yellowish brown (2.5Y 6/4) masses of iron and manganese accumulation in the matrix; slightly acid; clear smooth boundary.

2Btg4—43 to 50 inches; grayish brown (10YR 5/2) and yellowish brown (10YR 5/6) sandy clay loam; weak coarse subangular blocky structure; friable; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; neutral; clear smooth boundary.

2Cg—50 to 65 inches; mixed grayish brown (10YR 5/2) and yellowish brown (10YR 5/8) sandy loam with thin strata of sand; friable in the sandy loam; loose in the sand; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 65 inches
Thickness of the mollic epipedon: 10 to 14 inches
Depth to carbonates: More than 40 inches

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Eg horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—typically silty clay loam; subhorizons of silt loam in some pedons

2Btg and/or 2BCg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 8
Texture—sandy clay loam, loam, clay loam, silt loam, or sandy loam; strata of silty clay loam, loamy sand, or sand in many pedons

2Cg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 8
Texture—stratified with textures of sandy loam, sandy clay loam, clay loam, loam, silt loam, and silty clay loam; thin strata of sand or loamy sand in some pedons

206A—Thorp silt loam, 0 to 2 percent slopes

Setting

Landform: Depressions

Map Unit Composition

Thorp and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 1 foot
- Soils that have a dark subsurface layer
- Soils that have a thinner dark surface layer and have more clay in the subsoil

Dissimilar soils:
- The well drained Broadwell, Onarga, and Plano soils on summits and shoulders
- The excessively drained Sparta soils on summits and shoulders

Properties and Qualities of the Thorp Soil

Parent material: Loess over outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Tice Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of about 465 feet; Adams County, Illinois; 1,670 feet north and 990 feet west of the southeast corner of sec. 22, T. 2 S., R. 9 W.; USGS Quincy West, Illinois, topographic quadrangle; lat. 39 degrees 52 minutes 56 seconds N. and long. 91 degrees 25 minutes 08 seconds W.; UTM zone 15, 635209E 4415887N, NAD 83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to weak medium granular; firm; common very fine roots throughout; neutral; abrupt smooth boundary.

A—9 to 14 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; firm; few very fine roots throughout; few fine faint brown (10YR 4/3) masses of iron and manganese accumulation in the matrix; neutral; clear smooth boundary.

BA—14 to 19 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; firm; few very fine roots throughout; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common fine faint brown (7.5YR 4/3) masses of iron and manganese accumulation in the matrix; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bw—19 to 35 inches; brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; many medium prominent strong brown (7.5YR 4/6) masses of iron and manganese accumulation in the matrix; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bg1—35 to 44 inches; dark grayish brown (10YR 4/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; many medium prominent strong brown (7.5YR 4/6) masses of iron and manganese accumulation in the matrix; moderately acid; gradual smooth boundary.

Bg2—44 to 61 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium prismatic structure; firm; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium prominent strong brown (7.5YR 4/6) masses of iron and manganese accumulation in the matrix; slightly acid; clear smooth boundary.

Bg3—61 to 80 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium prismatic structure; firm; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium prominent strong brown (7.5YR 4/6) masses of iron and manganese accumulation in the matrix; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of the diagnostic horizon: 30 to more than 80 inches
Other features: Some pedons have an AB or BA horizon. Also, the Tice soil in map unit 3284S has, within a depth of 80 inches, a sandy substratum. The properties are the same as those described for the 2Cg horizon(s) below.

Ap or A horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silty clay loam or silt loam

Bw or Bg horizon(s):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

BC or BCg horizon(s) (where present):
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—1 to 4
Texture—silty clay loam or silt loam; strata of loam, clay loam, or sandy loam in some pedons

Cg or C horizon(s) (where present):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 3
Texture—typically stratified silty clay loam, clay loam, loam, sandy loam, or silt loam

2Cg or 2C horizon(s) (where present):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—fine sand, sand, loamy fine sand, or loamy sand

3284A—Tice silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Tice and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface soil more than 24 inches thick
- Soils that have more sand throughout
- Soils that have more sand in the underlying material
- Soils that are subject to occasional flooding
- Soils that have less clay throughout

Dissimilar soils:
- The well drained Ross and Arenzville soils in the slightly higher positions
- The poorly drained Beaucoup and Sawmill soils in the lower positions

Properties and Qualities of the Tice Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

3284S—Tice silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains (fig. 8)

Map Unit Composition

Tice and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface soil more than 24 inches thick
- Soils that have more sand throughout
- Soils that have less sand in the underlying material
- Soils that are subject to occasional flooding
- Soils that have less clay throughout

Dissimilar soils:
- The well drained Ross soils in the slightly higher positions
- The poorly drained Beaucoup and Sawmill soils in swales

Properties and Qualities of the Tice Soil

Parent material: Alluvium over sandy sediments
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

8284A—Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Tice and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface soil more than 24 inches thick
- Soils that have more sand throughout
- Soils that have less clay throughout

Dissimilar soils:
- The well drained Proctor soils in the higher positions
- The poorly drained Beaucoup soils in depressions

Properties and Qualities of the Tice Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Occasional, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

W—Water

- This map unit consists of rivers, streams, lakes, reservoirs, and ponds. These areas are covered with water in most years, at least during the period that is warm enough for the growth of plants. Many areas are covered throughout the year.

Worthen Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Worthen silt loam, 2 to 5 percent slopes, rarely flooded, at an elevation of 465 feet; Scott County, Illinois; 160 feet south and 640 feet west of the northeast corner of sec. 26, T. 13 N., R. 13 W.; USGS Bedford, Illinois, topographic quadrangle; lat. 39 degrees 32 minutes 59 seconds N. and long. 90 degrees 30 minutes 28 seconds W.; UTM zone 15, 714128E 4380754N, NAD 83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine and fine roots; neutral; abrupt smooth boundary.
A—9 to 20 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak medium granular structure; friable; few very fine and fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.
AB—20 to 29 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; few very fine and fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.
Bw1—29 to 41 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; few very fine and fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds, few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and pores, and few distinct very pale brown (10YR 7/3) silt coatings on faces of peds; neutral; clear smooth boundary.
Bw2—41 to 64 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable; few very fine and fine roots; few distinct dark brown (10YR 3/3) organic coatings in root channels and pores and few distinct very pale brown (10YR 7/3) silt coatings on faces of peds; neutral; gradual smooth boundary.
C—64 to 80 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates (if they occur): More than 50 inches
Depth to the base of the diagnostic horizon: 30 to 80 inches

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bw horizon(s):
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—2 to 6
Texture—silt loam

C horizon(s):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam

7037A—Worthen silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Loess bluffs
Position on the landform: Footslopes

Map Unit Composition

Worthen and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface soil less than 24 inches thick
- Soils that have a dark surface soil less than 24 inches thick and have more sand in the lower part of the subsoil and in the underlying material
- Soils that have more clay in the subsoil
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have more sand throughout
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The somewhat poorly drained Littleton soils in the slightly lower positions
- The somewhat poorly drained Tice and well drained Arenzville soils in the lower areas

Properties and Qualities of the Worthen Soil

Parent material: Silty valley-side alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Frequency and most likely period of flooding: Rare, November to June
Potential for frost action: High
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

7037B—Worthen silt loam, 2 to 5 percent slopes, rarely flooded

Setting

Landform: Loess bluffs
Position on the landform: Footslopes

Map Unit Composition

Worthen and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface soil less than 24 inches thick
- Soils that have more clay in the subsoil
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have more sand throughout
- Soils that have slopes of less than 2 percent

Dissimilar soils:
- The somewhat poorly drained Littleton soils in the slightly lower positions
- The somewhat poorly drained Tice and well drained Arenzville soils in the lower areas

Properties and Qualities of the Worthen Soil

Parent material: Silty valley-side alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Frequency and most likely period of flooding: Rare, November to June
Potential for frost action: High
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Zook Series

Taxonomic classification: Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Typical Pedon

Zook silty clay loam, 0 to 2 percent slopes, frequently flooded, at an elevation of about 600 feet; Warren County, Illinois; about 2,640 feet west and 1,200 feet south of the northeast corner of sec. 22, T. 12 N., R. 3 W.; USGS Little York topographic quadrangle; lat. 41 degrees 01 minute 14 seconds N. and long. 90 degrees 43 minutes 03 seconds W.; UTM zone 15, 691898E 4543552N, NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; many fine roots; slightly acid; clear smooth boundary.

A—8 to 22 inches; very dark gray (N 3/) silty clay, gray (N 5/) dry; moderate fine subangular blocky structure; firm; common medium and many fine roots; slightly acid; clear smooth boundary.

Bg1—22 to 38 inches; very dark gray (10YR 3/1) silty clay, gray (10YR 5/1) dry; weak fine prismatic structure parting to moderate fine subangular and angular blocky;

firm; common fine and medium and few coarse roots; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; neutral; clear wavy boundary.

Bg2—38 to 55 inches; dark gray (5Y 4/1) silty clay; weak medium prismatic structure parting to moderate fine subangular and angular blocky; firm; common fine and medium and few coarse roots; common faint very dark gray (5Y 3/1) organic coatings in root channels and krotovinas; common medium faint olive gray (5Y 5/2) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; neutral; clear wavy boundary.

BCg—55 to 60 inches; olive gray (5Y 5/2) silty clay loam; weak fine and medium subangular blocky structure; firm; few medium and coarse and common fine roots; common faint gray (5Y 5/1) organic coatings in root channels and on faces of peds; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 36 to more than 60 inches

Ap or A horizon(s):
Hue—10YR or N
Value—2 or 3
Chroma—0 or 1
Texture—silty clay loam or silty clay

Bg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—2 to 5
Chroma—1
Texture—silty clay loam or silty clay

BCg and/or Cg horizon(s) (where present):
Hue—10YR, 2.5Y, or 5Y
Value—2 to 5
Chroma—1 or 2
Texture—silty clay, silty clay loam, or silt loam

3405A—Zook silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains (fig. 8)

Map Unit Composition

Zook and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the surface soil and subsoil
- Soils that have less clay in the surface soil and subsoil and have a dark surface soil less than 36 inches thick
- Soils that have less clay in the surface soil and subsoil
- Soils that have a dark surface soil less than 24 inches thick, have less clay in the surface soil and subsoil, and have a seasonal high water table at a depth of more than 1 foot

Dissimilar soils:
- The well drained Arenzville and Ross soils in the slightly higher positions

Properties and Qualities of the Zook Soil

Parent material: Clayey alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 5.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Frequent, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

8405A—Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Zook and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the surface soil and subsoil
- Soils that have less clay in the surface soil and subsoil and have a dark surface soil less than 36 inches thick
- Soils that have less clay in the surface soil and subsoil
- Soils that have a dark surface soil less than 24 inches thick, have less clay in the surface soil and subsoil, and have a seasonal high water table at a depth of more than 1 foot

Dissimilar soils:
- The well drained Proctor soils in the higher positions

Properties and Qualities of the Zook Soil

Parent material: Clayey alluvium
Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 5.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Occasional, November to June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Use and Management of the Soils

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

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

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

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

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

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

Interpretive Ratings

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

Rating Class Terms

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

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

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

In 2002, a total of 139,523 acres in Menard County was cropland (USDA, 2002). The major row crops are corn and soybeans. Wheat is the major small grain crop grown. The soils in Menard County have good potential for continued crop production, especially if the latest crop production technology is applied.

Limitations Affecting Cropland and Pastureland

The management concerns affecting the use of the detailed soil map units in the survey area for crops and pasture are shown in table 6.

Cropland

The main concerns affecting the management of cropland in Menard County include crusting, excessive permeability, flooding, ponding, poor tilth, water erosion, and wetness. Other concerns include excess lime, high pH, limited available water capacity, and wind erosion.

Crusting occurs when flowing water or raindrops break down soil structural units, moving clay downward and leaving a concentration of sand and silt particles on the soil surface. Crusts can reduce water infiltration, increase runoff, inhibit seedling emergence and proper growth, and reduce oxygen diffusion to seedlings. Practices that help to minimize surface crusting and improve tilth are those that protect the surface from the impact of raindrops and from flowing water. Incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage help to prevent crusting and improve tilth.

Excessive permeability can occur in soils that have a high content of sand in the surface layer and thus have many pores of large diameter. The capacity of the soil to retain moisture for use by plants is restricted. Deep leaching of nutrients and pesticides can occur, and the risk of ground-water pollution is a concern. Irrigation can be used to supply the moisture needed for crops. Frequent applications of a small amount of fertilizer are needed. One large application of fertilizer can result in excessive loss of plant nutrients through leaching.

Flooding occurs in unprotected areas along the major rivers and their tributaries. Levees or diversions reduce the extent of crop damage caused by floodwater. Surface drainage ditches can be used to improve drainage if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. Selecting crop varieties adapted to a shorter growing season and wetter conditions can help to minimize the extent of damage caused by flooding.

Ponding occurs when the seasonal high water table is above the surface of the soil. Land grading helps to control ponding. Surface ditches and surface inlet tile also help to remove excess water if suitable outlets are available. Management of drainage in conformance with wetland regulations may require special permits and extra planning.

Poor tilth can occur in soils because of erosion, when part of the subsoil is incorporated into the plow layer. The erosion reduces the content of organic matter and increases the clay content in the surface soil. Intensive rainfall often results in the formation of a crust on the surface. Poor tilth also occurs in poorly drained soils that have a high clay content, regardless of organic matter content, and in soils that have been excessively tilled. Poor tilth reduces the rate of water infiltration and increases the runoff rate and the susceptibility to erosion on the more sloping soils. Soils with poor tilth generally have a surface layer that is sticky when wet and hard and cloddy when dry. Because these soils can be tilled only within a narrow range in moisture content, seedbed preparation is difficult. Minimizing tillage and timing conservation tillage operations to near optimal soil moisture conditions can improve tilth.

Water erosion reduces the stability of soil aggregates and thus reduces the rate of water infiltration and increases the rate of surface runoff. Soils with long or steep slopes are susceptible to water erosion. Sheet and rill erosion is a hazard in areas where slopes are long or are subject to concentrated flow. Excessive runoff reduces the quality of surface water through sedimentation and contamination by agricultural chemicals attached to soil particles in the sediment. Sediment then enters streams, rivers, water impoundments, and road ditches and reduces the quality of surface water. Erosion can be controlled by a conservation tillage system that leaves crop residue on the surface after planting or by a cropping system that rotates grasses and legumes in the cropping sequence (fig. 9). On soils with long, uniform slopes, contour farming and/or terraces in combination with a conservation tillage system can help to control erosion.

Wetness occurs when the seasonal high water table is at or near the surface. Subsurface tile drains can lower the seasonal high water table if suitable outlets are available. In soils that have restricted permeability and a high content of clay, subsurface drainage may not be practical. In areas of these soils, surface ditches may reduce the wetness. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning.

Excess lime occurs in soils that contain a high content of calcium carbonate at or near the surface or in the upper part of the subsoil. This limitation affects the availability of many plant nutrients and influences the effectiveness of herbicides. More frequent applications of a small amount of fertilizer are needed to correct nutrient imbalances. Crops may respond well to additions of phosphate fertilizer on these soils. The applications of herbicides should be adjusted as the level of alkalinity increases. Incorporating green manure crops, manure, or crop residue into the soil, applying a system of conservation tillage, and using conservation cropping systems also help to overcome this limitation.

High pH refers to a pH of 7.4 or more. This limitation affects the availability of many plant nutrients and influences the effectiveness of herbicides. More frequent applications of a small amount of fertilizer are needed to correct nutrient imbalances. Crops may respond well to additions of phosphate fertilizer on these soils. The applications of herbicides should be adjusted as the level of alkalinity increases. Incorporating green manure crops, manure, or crop residue into the soil, applying a system of conservation tillage, and using conservation cropping systems also help to overcome this limitation.

Limited available water capacity can occur in soils that have a high content of sand, a low content of clay, and a low content of organic matter. Reducing the evaporation and runoff rates and increasing the rate of water infiltration can conserve soil moisture.

Figure 9.—Grassed waterways and crop residue management help to control erosion in an area of the moderately sloping Sylvan, Bold, and Tallula soils.

Measures that conserve soil moisture include applying conservation tillage and conservation cropping systems, establishing field windbreaks, and leaving crop residue on the surface.

Wind erosion can occur when the surface of the soil is not protected. Wind erosion can be controlled by applying a system of conservation tillage that leaves crop residue on the surface after planting, by using tillage systems that leave the surface rough, by establishing field windbreaks, and by regularly adding organic material to the soil.

Following are explanations of the criteria used to determine the limitations or hazards.

Crusting.—The average content of organic matter in the surface layer is 2.5 percent or less, and the content of clay is between 20 and 35 percent.

Excess lime.—The upper limit of the calcium carbonate equivalent is 15 percent or more within a depth of 20 inches.

Excessive permeability.—The lower limit of the permeability rate is more than 6.0 inches per hour within the soil profile.

Flooding.—The soil is subject to occasional or frequent flooding.

High pH.—The lower limit of pH within a depth of 40 inches is 7.4 or more.

Limited available water capacity.—The available water capacity in the upper 60 inches of the profile is less than 6 inches.

Ponding.—The upper limit of the ponding depth is greater than 0 inches.

Poor tilth.—The content of clay in the surface layer is 27 percent or more.

Water erosion.—The Kw factor multiplied by the slope is 0.8 or more, and the slope is 3 percent or more.

Wetness.—The seasonal high water table is within a depth of 1.5 feet at some time during the growing season in normal years.

Wind erosion.—The wind erodibility group (WEG) is 1 or 2.

Erosion factors (for example, the Kw factor) and wind erodibility groups are described under the heading “Physical Properties.”

Pastureland

The main management concerns affecting pastureland in Menard County are excessive permeability, high pH, low fertility, low pH, poor tilth, and water erosion. Other concerns include equipment limitations, excess lime, flooding, limited available water capacity, wetness, and wind erosion.

Excessive permeability can occur in soils that have a high content of sand and thus have many large pores. The capacity of these soils to retain moisture for plant use is limited. The deep leaching of nutrients and pesticides that can result can increase the risk of ground-water pollution. Irrigation can be used to supply the moisture needed for plant growth. Frequent applications of a small amount of fertilizer are needed. A single large application of fertilizer can result in excessive loss of plant nutrients through leaching.

High pH refers to a pH of 7.4 or more. This limitation affects the availability of many nutrients for plant growth. More frequent applications of a small amount of fertilizer are needed to correct nutrient imbalances. Selecting adapted forage and hay varieties helps to overcome this limitation.

Low fertility occurs in soils that have a low content of organic matter and a low cation-exchange capacity. The capacity of the soil to retain nutrients for plant use is limited. Frequent applications of small amounts of fertilizer help to prevent excessive loss of plant nutrients through leaching. Using legumes as part of a seeding mixture can provide nitrogen to the grass varieties. Timely deferment of grazing helps to maintain a cover of vegetation on the surface and thus helps to maintain the content of organic matter. Organic matter is a source of nutrients in the soil.

Low pH refers to a pH of 5.5 or less. This limitation can reduce the solubility and availability of nutrients for plant growth. Selecting adapted forage and hay varieties and applying lime according to the results of soil tests can help to overcome this limitation.

Poor tilth can occur in soils because of erosion, when part of the subsoil is incorporated into the plow layer. The erosion reduces the content of organic matter and increases the clay content in the surface soil. Intensive rainfall often results in the formation of a crust on the surface. Poor tilth also occurs in poorly drained soils that have a high clay content, regardless of organic matter content, and in soils that have been excessively tilled. Poor tilth reduces the rate of water infiltration and increases the runoff rate and the susceptibility to erosion on the more sloping soils. Soils with poor tilth generally have a surface layer that is sticky when wet and hard and cloddy when dry. Because these soils can be tilled only within a narrow range in moisture content, seedbed preparation is difficult. Minimizing tillage and timing conservation tillage operations to near optimal soil moisture conditions during pasture establishment or pasture renovation can improve tilth.

Water erosion can occur in overgrazed areas or during pasture establishment and renovation if the surface is not protected against the impact of raindrops. Erosion results in poor tilth, which reduces the rate of water infiltration and increases the runoff rate. Soils with long or steep slopes also are susceptible to water erosion. Erosion can be controlled by deferring grazing, which prevents overgrazing and thus also helps to prevent surface compaction and excessive runoff and erosion. Tilling on the contour, using a no-till system of seeding when a seedbed is prepared or the pasture is renovated, and selecting adapted forage and hay varieties also help to control erosion (fig. 10).

Equipment limitations occur in areas that have slopes of more than 18 percent. These limitations can cause rapid wear of equipment. They can also present problems with fertilization, harvest, pasture renovation, and seedbed preparation. They cannot be easily overcome.

Excess lime occurs in soils that contain a high content of calcium carbonate at or near the surface or in the upper part of the subsoil. This limitation affects the availability of many plant nutrients for plant growth. More frequent applications of a

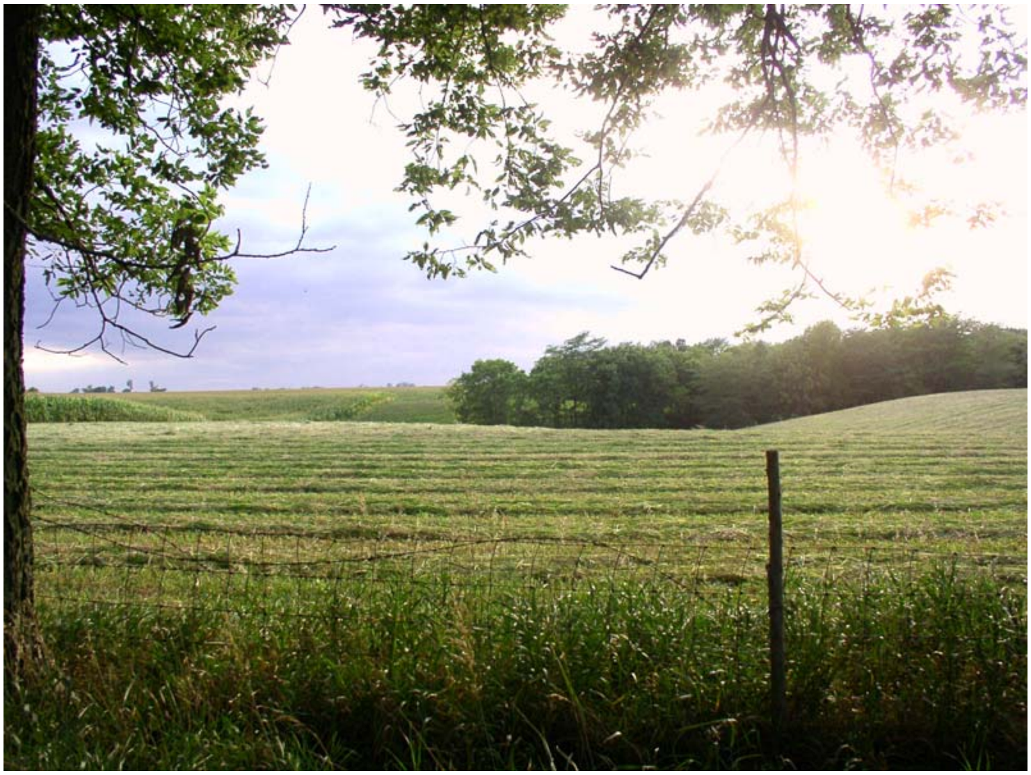


Figure 10.—Maintaining a cover of forage crops helps to control erosion. The gently sloping Rozetta soils are in the foreground, and the moderately sloping Sylvan and Bold soils are in the background.

small amount of fertilizer are needed to correct nutrient imbalances. Selecting adapted forage and hay varieties helps to overcome this limitation.

Flooding occurs in unprotected areas along the major rivers and their tributaries. Surface drainage ditches help to remove floodwater if suitable outlets are available. Management of drainage in conformance with regulations may require special permits and extra planning. Selecting forage and hay varieties adapted to a shorter growing season and wetter conditions can also minimize the damage caused by flooding. Restricted use during wet periods helps to keep the pasture in good condition.

A limited available water capacity can occur in soils that have a high content of sand, a low content of clay, and a low content of organic matter. Reducing the evaporation and runoff rates and increasing the rate of water infiltration can conserve soil moisture. Measures that conserve soil moisture include applying conservation tillage and conservation cropping systems, establishing field windbreaks, and leaving crop residue on the surface.

Wetness occurs when the seasonal high water table is at or near the surface. Subsurface tile drains can lower the seasonal high water table if suitable outlets are available. Management of drainage in conformance with regulations may require special permits and extra planning. Selecting forage and hay varieties adapted to wet conditions can improve forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Wind erosion can occur in overgrazed areas or during pasture establishment and renovation if the surface is not protected. Wind erosion can be controlled by applying a system of conservation tillage that leaves residue on the surface after planting, by using tillage systems that leave the surface rough, by establishing field windbreaks, and by regularly adding organic material to the soil.

Following are explanations of the criteria used to determine the limitations or hazards.

Equipment limitation.—The slope is more than 18 percent.

Excess lime.—The upper limit of the calcium carbonate equivalent is 15 percent or more within a depth of 20 inches.

Excessive permeability.—The lower limit of the permeability rate is more than 6.0 inches per hour within the soil profile.

Flooding.—The soil is subject to occasional or frequent flooding.

High pH.—The lower limit of pH within a depth of 40 inches is 7.4 or more.

Limited available water capacity.—The available water capacity is less than 6 inches in the upper 60 inches of the profile.

Low fertility.—The average content of organic matter in the surface layer is less than 1 percent, or the average cation-exchange capacity (CEC) is less than 7.

Low pH.—The lower limit of pH within a depth of 40 inches is 5.5 or less.

Poor tilth.—The content of clay in the surface layer is 27 percent or more.

Water erosion.—The Kw factor multiplied by the slope is more than 1.0, and the slope is 3 percent or more.

Wetness.—The seasonal high water table is within a depth of 1.5 feet.

Wind erosion.—The wind erodibility group (WEG) is 1 or 2.

Erosion factors (for example, the Kw factor) and wind erodibility groups are described under the heading “Physical Properties.”

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents (Olson and Lang, 2000; Olson and others, 2000). Available yield data from nearby counties and results of field trials and demonstrations also are considered.

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

Yields for grass-legume pasture under an average level of management also are shown in table 7. Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

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

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

Land Capability Classification

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

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

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

Class 1 soils have slight limitations that restrict their use.

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

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

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

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

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

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

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

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

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

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of the soils in this survey area is given in the section “Soil Series and Detailed Soil Map Units” and in the yields table.

Prime Farmland

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

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

About 160,754 acres in the survey area, or about 80 percent of the total acreage, meets the soil requirements for prime farmland.

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

The map units in the survey area that are considered prime farmland are listed in table 8. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps. Some of the soil qualities that affect use and management are described under the heading “Soil Series and Detailed Soil Map Units.”

Hydric Soils

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

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

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

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Table 9 lists the map units that include hydric soils, either as major components or as inclusions. The hydric soils listed in the table meet the definition of a hydric soil and have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and Vasilas, 2006).

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   - B. are poorly drained or very poorly drained and have either:
     - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
     - 2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
     - 3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is less than 6.0 in/hr in any layer within a depth of 20 inches.

3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service or from a commercial nursery.

Forestland Management and Productivity

Matt Peterson, District Forester, Illinois Department of Natural Resources, helped prepare this section.

When the survey area was first settled, forestland covered approximately 69,000 acres, or about 34 percent of the total acreage (Bretthauer and Edgington, 2002). As the population of the county increased, the woodland eventually was cleared for farming. Today, woodland makes up approximately 8 percent of the total acreage, or about 15,183 acres (Illinois Department of Agriculture, 2001). The majority of the woodland is in relatively small, privately owned woodlots.

Most of the forestland in Menard County is in areas of soils that generally are not suited to cultivation because of wetness, droughtiness, or slope. These soils have fair or good potential for production of high-quality trees.

Many of the woodland acres in the county are still subject to grazing, which destroys the leaf layer on the surface, compacts the soils, and eliminates or damages tree seedlings. Grazing encourages the growth of poor timber species, such as hedge, locust, and multiflora rose (after the grazing stops). Much of the woodland can be improved by harvesting mature trees and by removing the nonmerchantable trees that retard the growth of desirable species. Protecting the woodland from fire, excluding livestock from the woodland, and controlling disease and insects increase productivity. Tree planting is needed unless stocking is adequate. Control of competing vegetation is needed if seedlings are planted. Seeding non-sodforming 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 10 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. State and Federal cost-share programs have been established to encourage tree planting by landowners. These types of programs improve water quality, enhance wildlife habitat, and reduce streambank erosion.

In Menard County, red oak, white oak, black walnut, American elm, red elm, and shagbark hickory are the dominant species on upland soils, such as Sylvan, Rozetta, Bold, Hamburg, Fayette, and Keomah soils. Silver maple, cottonwood, and American elm are well adapted to the bottom-land soils, such as Beaucoup, Arenzville, Sawmill, and Tice soils. The sandy upland soils, such as Bloomfield and Alvin soils, have stands of oaks and hickories; however, these soils are well suited to red pine, white pine, and jack pine. Christmas tree production is also common on these soils.

Menard County currently ranks 65th among counties in Illinois in percent of land covered by forest/woodlands and 79th in forest/woodland total acres for the State (Illinois Department of Natural Resources, 1996).

In table 11, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

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

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

In tables 12a through 12e, interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

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

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

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Table 12a

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

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

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

Table 12b

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

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erosion factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

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

Table 12c

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

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

Table 12d

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

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

Table 12e

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

Recreational Development

The demand for land and facilities for boating, swimming, picnicking, fishing, hunting, hiking, camping, and other forms of outdoor recreation is increasing throughout the county. Facilities for these activities are available in city parks and on a few privately owned tracts. Lincoln’s New Salem Historic Site provides an opportunity to see New Salem as it appeared in Abraham Lincoln’s time.

In tables 13a and 13b, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

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

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Areas used as wildlife habitat are not necessarily set aside for this purpose. Many of the nearly level to strongly sloping soils used for crops and pasture in Menard County generally are well suited to habitat for openland wildlife species, such as rabbits, pheasant, bobwhite quail, red fox, and meadowlark. Habitat for woodland wildlife generally is in areas of soils that are too steep for cultivation, in small dissected areas along streams, and in areas of soils that are not suitable for farming because of poor drainage or droughtiness. Habitat for wetland wildlife consists of open, marshy areas of shallow water.

The kinds and abundance of wildlife in Menard County reflect the soil types, land use, and vegetation. About 54 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 34 percent of the county (Bretthauer and Edgington, 2002). After the county was settled, drainage systems 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 horned lark, cardinal, mourning dove, raccoon, and white-tailed deer.

Good management can improve the habitat for wildlife. Keeping crop residue on the surface during fall and winter not only helps to control erosion but also greatly improves wildlife habitat in cropped areas. Deferring the mowing of grassed waterways, roadsides, and fence rows until early August, after the nesting season, can significantly increase the annual production of songbirds, quail, rabbits, and other kinds of wildlife that nest on the ground. Measures that exclude livestock from woodland, wetland, and streambanks can markedly improve wildlife habitat.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

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

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

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

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Examples are corn, soybeans, wheat, and oats. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Selection should be made from a list of locally adapted species.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Examples are bromegrass, timothy, orchardgrass, clover, and alfalfa. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Examples are bluestems, indiangrass, goldenrod, beggarweed, ragweed, and foxtail. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Examples are oak, cherry, cottonwood, apple, hawthorn, hickory, blackberry, elderberry, maple, and willow. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are American plum, hazelnut, dogwood, and arrowwood. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness.

Coniferous plants are cone-bearing trees, shrubs, or ground cover that provides habitat or supplies food in the form of browse, seed, or fruit-like cones. Examples are pine, spruce, cedar, juniper, and fir. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness.

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

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include ring-necked pheasant, bobwhite quail, meadowlark, field sparrow, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, thrushes, woodpeckers, owls, tree squirrels, raccoon, woodcock, and white-tailed deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

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

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

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

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 15a and 15b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 16a and 16b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 17a and 17b give information about the soils as potential sources of sand, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand occurs as natural aggregates suitable for commercial use with a minimum of processing. It is used in many kinds of construction. Specifications for each use vary widely. In table 17a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand, the soil is considered a likely source regardless of thickness. The assumption is that the sand layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In table 17b, the soils are rated as *good, fair,* or *poor* sources of roadfill and topsoil. The features that limit the soils as sources of roadfill and topsoil are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of roadfill and topsoil. The lower the number, the greater the limitation.

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

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Tables 18a, 18b, and 18c give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; grassed waterways and surface drains; terraces and diversions; tile drains and underground outlets; and sprinkler irrigation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Table 18a

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

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Table 18b

Grassed waterways and surface drains are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Tile drains and underground outlets are used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to undisturbed soils that commonly have a seasonal high water table within a depth of about 3.0 feet. Current land use is not considered in the ratings. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade and stability of tile drains. Limitations affecting areas where the tile line passes through soils in which the water table is generally below a depth of 3.0 feet are provided in the table that includes the column “shallow excavations,” which is described under the heading “Building Site Development.”

Table 18c

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The table shows ratings for *sprinkler irrigation*, in which water is sprayed over the soil surface through pipes or nozzles from a pressure system.

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 depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 19 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 11). "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

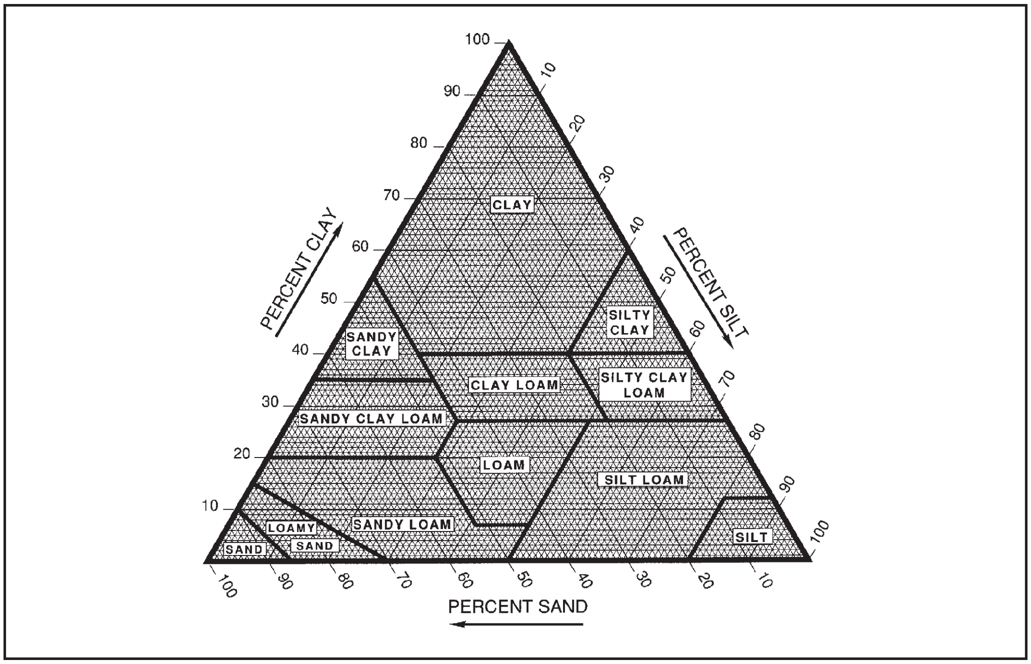


Figure 11.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

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

Physical Properties

Table 20 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 20, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in table 20 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook” (available online at http://soils.usda.gov).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 21 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases 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. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Water Features

Table 22 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

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

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

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

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 22 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* of flooding are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Water table refers to a saturated zone in the soil. Table 22 indicates the depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone for the specified *months* in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

The table also shows the *kind of water table*, that is, apparent or perched. 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.

Soil Features

Table 23 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

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

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

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

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the "National Soil Survey Handbook" (available in local offices of the Natural Resources Conservation Service or on the Internet).

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

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.

Alluvial fan. A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction toward which a slope faces. Also called slope aspect.

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

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal till. Compact till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed; the adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Calcium carbonate. A common mineral in sediments and soils.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence of soils across a landscape that are about the same age and formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. See Terracettes.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. See Redoximorphic features.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. See Redoximorphic features.

Conglomerate. A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression. Any relatively sunken part of the earth's surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage. An open depression has a natural outlet for surface drainage.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

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

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Drift. A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill. See Mine spoil.

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

End moraine. A ridgelike accumulation that is being or was produced at the outer margin of an actively flowing glacier at any given time.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit. Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Esker. A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

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

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

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

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

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

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

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Geomorphology. The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground moraine. An extensive, fairly even layer of till having an uneven or undulating surface.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

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

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

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. See Redoximorphic features.

Kame. A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Krotovinas. Irregular, tubular streaks in a soil horizon that are created when tunnels made by a burrowing animal are filled with material from another horizon.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lamella. A thin (commonly less than 1 centimeter thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).

Landscape. A collection of related natural landforms; usually the land surface which the eye can comprehend in a single view.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

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

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

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

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Masses. See Redoximorphic features.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

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

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

MLRA (major land resource area). A geographic area characterized by a particular pattern of land uses, elevation and topography, soils, climate, water resources, and potential natural vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

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

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash. Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain. An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleosol. A general term used to describe a soil that formed on a landscape of the past; it may be a buried soil, a relict soil, or an exhumed soil.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment (regional geology). A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permafrost. Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

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

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

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

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

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

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

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

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
   A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
   B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
   C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
   A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
   B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.
Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.
Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.
Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.
Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.
Rise. A slight increase in slope and elevation of the land surface, typically with a broad summit and gently sloping sides.
Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.
Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.
Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.
Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside, bounding a drainageway and lying between the drainageway and the adjacent interfluve. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over 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.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

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 alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

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

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (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 wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Swale. A shallow, open depression in unconsolidated materials that lacks a defined channel but can funnel overland or subsurface flow into a drainageway. A small, shallow, typically closed depression in an undulating ground moraine formed by uneven glacial deposition.

Talf. A geomorphic component of flat plains consisting of an essentially flat and broad area dominated by closed depressions and a nonintegrated or poorly integrated drainage system. Precipitation tends to pond locally, and lateral transport is slow both above and below ground. These conditions favor the accumulation of soil organic matter and a retention of fine earth sediments; better drained soils are commonly adjacent to drainageways.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family or higher taxonomic category of the series for which the soils are named.

Terminal moraine. An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain. An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Valley-side alluvium. A concave “slope wash” deposit at the base of a hillslope that may or may not include the alluvial toeslope.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth’s surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Lincoln, Illinois)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	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----	32.5	15.5	24.0	60	-16	1	1.70	0.64	2.70	4	7.0
February---	38.9	20.8	29.9	69	-10	4	1.49	.64	2.32	3	4.7
March------	50.9	30.7	40.8	81	8	42	3.10	1.76	4.28	6	2.1
April------	63.7	40.6	52.1	86	21	150	3.70	1.88	5.38	7	.5
May--------	74.6	51.6	63.1	92	33	406	4.41	2.36	6.21	7	.0
June-------	83.4	61.1	72.3	97	45	668	3.85	1.91	5.71	6	.0
July-------	86.3	64.8	75.6	98	51	791	4.34	1.93	6.46	6	.0
August-----	84.3	62.5	73.4	97	48	722	4.02	2.09	5.98	5	.0
September--	78.5	54.0	66.3	94	34	491	3.05	1.63	4.23	5	.0
October----	66.7	42.4	54.5	87	23	198	2.87	1.61	3.74	5	.0
November---	51.0	32.4	41.7	76	11	42	3.06	1.49	4.59	6	1.2
December---	38.4	21.7	30.1	66	-7	6	2.62	1.28	3.75	5	5.0
Yearly:											
Average---	62.4	41.5	52.0	---	---	---	---	---	---	---	---
Extreme---	104	-25	---	99	-17	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,521	38.21	29.70	44.17	65	20.5

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

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Lincoln, 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--	Apr. 12	Apr. 19	May 1
2 years in 10 later than--	Apr. 7	Apr. 15	Apr. 26
5 years in 10 later than--	Mar. 29	Apr. 6	Apr. 17
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 21	Oct. 4	Sept. 29
2 years in 10 earlier than--	Oct. 26	Oct. 10	Oct. 4
5 years in 10 earlier than--	Nov. 5	Oct. 22	Oct. 13

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Lincoln, 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	201	176	161
8 years in 10	208	184	167
5 years in 10	221	200	179
2 years in 10	235	216	191
1 year in 10	242	224	197

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Alvin	Coarse-loamy, mixed, superactive, mesic Typic Hapludalfs
Arenzville	Coarse-silty, mixed, superactive, nonacid, mesic Typic Udifluvents
Beaucoup	Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
Bloomfield	Sandy, mixed, mesic Lamellic Hapludalfs
Bold	Coarse-silty, mixed, superactive, calcareous, mesic Typic Udorthents
Broadwell	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Broadwell	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Brooklyn	Fine, smectitic, mesic Mollic Albaqualfs
Buckhart	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Camden	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Clarksdale	Fine, smectitic, mesic Udollic Endoaqualfs
Dakota	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls
Denny	Fine, smectitic, mesic Mollic Albaqualfs
Drummer	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Elburn	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Elco	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
*Elkhart	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Fayette	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Greenbush	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Hamburg	Coarse-silty, mixed, superactive, calcareous, mesic Typic Udorthents
Harpster	Fine-silty, mixed, superactive, mesic Typic Calciaquolls
Hartsburg	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Hickory	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Ipava	Fine, smectitic, mesic Aquic Argiudolls
Keomah	Fine, smectitic, mesic Aeric Endoaqualfs
Lawndale	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Lawson	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Lenzburg	Fine-loamy, mixed, active, calcareous, mesic Haplic Udarents
Littleton	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Middletown	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Navlys	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Onarga	Coarse-loamy, mixed, superactive, mesic Typic Argiudolls
*Onarga	Coarse-loamy, mixed, superactive, mesic Mollic Hapludalfs
Orthents	Fine-loamy, mixed, active, nonacid, mesic Typic Udorthents
Osco	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Osco	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Plano	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Princeton	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Proctor	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Radford	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Riley	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Fluvaquentic Hapludolls
Ross	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
Rozetta	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Sable	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Sawmill	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Shiloh	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
Sparta	Sandy, mixed, mesic Entic Hapludolls
*Sparta	Mixed, mesic Typic Udipsamments
St. Charles	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Stronghurst	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Sylvan	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Tallula	Coarse-silty, mixed, superactive, mesic Typic Hapludolls
Thebes	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Thorp	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Tice	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Worthen	Fine-silty, mixed, superactive, mesic Cumulic Hapludolls
Zook	Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
8D	Hickory silt loam, 10 to 18 percent slopes	1	*
8D2	Hickory loam, 10 to 18 percent slopes, eroded	4	*
8F	Hickory silt loam, 18 to 35 percent slopes	26	*
17A	Keomah silt loam, 0 to 2 percent slopes	2,324	1.2
30G	Hamburg silt loam, 35 to 60 percent slopes	165	*
34B2	Tallula silt loam, 2 to 5 percent slopes, eroded	470	0.2
43A	Ipava silt loam, 0 to 2 percent slopes	22,499	11.1
45A	Denny silt loam, 0 to 2 percent slopes	104	*
53B	Bloomfield fine sand, 1 to 7 percent slopes	247	0.1
53D	Bloomfield fine sand, 7 to 15 percent slopes	154	*
67A	Harpster silty clay loam, 0 to 2 percent slopes	247	0.1
68A	Sable silty clay loam, 0 to 2 percent slopes	18,826	9.3
86B	Osco silt loam, 2 to 5 percent slopes	5,789	2.9
86C2	Osco silt loam, 5 to 10 percent slopes, eroded	41	*
119D	Elco silt loam, 10 to 18 percent slopes	1	*
119D2	Elco silt loam, 10 to 18 percent slopes, eroded	1	*
119D3	Elco silty clay loam, 10 to 18 percent slopes, severely eroded	1	*
131C2	Alvin fine sandy loam, 5 to 10 percent slopes, eroded	5	*
131D2	Alvin fine sandy loam, 10 to 18 percent slopes, eroded	3	*
134C2	Camden silt loam, 5 to 10 percent slopes, eroded	228	0.1
136A	Brooklyn silt loam, 0 to 2 percent slopes	874	0.4
138A	Shiloh silty clay loam, 0 to 2 percent slopes	3	*
152A	Drummer silty clay loam, 0 to 2 percent slopes	4,116	2.0
198A	Elburn silt loam, 0 to 2 percent slopes	2,056	1.0
199A	Plano silt loam, 0 to 2 percent slopes	5,529	2.7
199B	Plano silt loam, 2 to 5 percent slopes	1,938	1.0
206A	Thorp silt loam, 0 to 2 percent slopes	1,377	0.7
212C2	Thebes silt loam, 5 to 10 percent slopes, eroded	3	*
243A	St. Charles silt loam, 0 to 2 percent slopes	266	0.1
243B	St. Charles silt loam, 2 to 5 percent slopes	578	0.3
244A	Hartsburg silty clay loam, 0 to 2 percent slopes	2,304	1.1
257A	Clarksdale silt loam, 0 to 2 percent slopes	2,908	1.4
270A	Stronghurst silt loam, sandy substratum, 0 to 2 percent slopes	694	0.3
279B	Rozetta silt loam, 2 to 5 percent slopes	15,228	7.5
279B3	Rozetta silty clay loam, 2 to 5 percent slopes, severely eroded	235	0.1
279C2	Rozetta silt loam, 5 to 10 percent slopes, eroded	441	0.2
279C3	Rozetta silty clay loam, 5 to 10 percent slopes, severely eroded	171	*
280C2	Fayette silt loam, 5 to 10 percent slopes, eroded	318	0.2
379A	Dakota loam, 0 to 2 percent slopes	211	0.1
567C2	Elkhart silt loam, 5 to 10 percent slopes, eroded	1,617	0.8
630C2	Navlys silt loam, 5 to 10 percent slopes, eroded	8	*
630D3	Navlys silty clay loam, 10 to 18 percent slopes, severely eroded	7	*
675B	Greenbush silt loam, 2 to 5 percent slopes	1,485	0.7
683A	Lawndale silt loam, 0 to 2 percent slopes	7,438	3.7
684A	Broadwell silt loam, 0 to 2 percent slopes	2,188	1.1
684B	Broadwell silt loam, 2 to 5 percent slopes	10,656	5.3
684C2	Broadwell silt loam, 5 to 10 percent slopes, eroded	2,949	1.5
685B	Middletown silt loam, 2 to 5 percent slopes	4,579	2.3
685C2	Middletown silt loam, 5 to 10 percent slopes, eroded	1,687	0.8
685C3	Middletown silty clay loam, 5 to 10 percent slopes, severely eroded	819	0.4
685D2	Middletown silt loam, 10 to 18 percent slopes, eroded	1,281	0.6
685D3	Middletown silty clay loam, 10 to 18 percent slopes, severely eroded	547	0.3
705A	Buckhart silt loam, 0 to 2 percent slopes	5	*
705B	Buckhart silt loam, 2 to 5 percent slopes	11,050	5.5
802E	Orthents, loamy, hilly	11	*
827B	Broadwell-Onarga complex, 2 to 5 percent slopes	1,819	0.9
827C2	Broadwell-Onarga complex, 5 to 10 percent slopes, eroded	816	0.4
828B	Broadwell-Sparta complex, 1 to 7 percent slopes	844	0.4
828D2	Broadwell-Sparta complex, 7 to 15 percent slopes, eroded	659	0.3
835G	Earthen dam	10	*
861B2	Princeton-Bloomfield fine sands, 1 to 7 percent slopes, eroded	3,229	1.6
861D2	Princeton-Bloomfield fine sands, 7 to 15 percent slopes, eroded	1,558	0.8

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
861F	Princeton-Bloomfield fine sands, 15 to 35 percent slopes	684	0.3
864	Pits, quarry	103	*
871B	Lenzburg silt loam, 1 to 7 percent slopes	271	0.1
871D	Lenzburg silty clay loam, 7 to 20 percent slopes	150	*
871G	Lenzburg silty clay loam, 20 to 60 percent slopes	34	*
898D2	Hickory-Sylvan complex, 10 to 18 percent slopes, eroded	1,192	0.6
898D3	Hickory-Sylvan complex, 10 to 18 percent slopes, severely eroded	648	0.3
898F2	Hickory-Sylvan complex, 18 to 35 percent slopes, eroded	3,551	1.8
898F3	Hickory-Sylvan complex, 18 to 35 percent slopes, severely eroded	720	0.4
898G	Hickory-Sylvan silt loams, 35 to 60 percent slopes	683	0.3
962C2	Sylvan-Bold silt loams, 5 to 10 percent slopes, eroded	3,072	1.5
962C3	Sylvan-Bold complex, 5 to 10 percent slopes, severely eroded	2,775	1.4
962D2	Sylvan-Bold silt loams, 10 to 18 percent slopes, eroded	3,929	1.9
962D3	Sylvan-Bold complex, 10 to 18 percent slopes, severely eroded	1,612	0.8
962E2	Sylvan-Bold silt loams, 18 to 25 percent slopes, eroded	296	0.1
962F2	Sylvan-Bold silt loams, 18 to 35 percent slopes, eroded	2,862	1.4
962G	Sylvan-Bold silt loams, 35 to 60 percent slopes	395	0.2
965C2	Tallula-Bold silt loams, 5 to 10 percent slopes, eroded	4,309	2.1
965D2	Tallula-Bold silt loams, 10 to 18 percent slopes, eroded	268	0.1
3070A	Beaucoup silty clay loam, 0 to 2 percent slopes, frequently flooded	938	0.5
3070S	Beaucoup silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded	1,106	0.5
3073A	Ross silt loam, 0 to 2 percent slopes, frequently flooded	1,411	0.7
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded	2,605	1.3
3078A	Arenzville silt loam, 0 to 2 percent slopes, frequently flooded	4,944	2.4
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	957	0.5
3107L	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, long duration	19	*
3107S	Sawmill silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded	2,205	1.1
3284A	Tice silty clay loam, 0 to 2 percent slopes, frequently flooded	4,422	2.2
3284S	Tice silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded	2,748	1.4
3405A	Zook silty clay loam, 0 to 2 percent slopes, frequently flooded	228	0.1
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded	6	*
7037A	Worthen silt loam, 0 to 2 percent slopes, rarely flooded	492	0.2
7037B	Worthen silt loam, 2 to 5 percent slopes, rarely flooded	338	0.2
7081A	Littleton silt loam, 0 to 2 percent slopes, rarely flooded	1,018	0.5
7148A	Proctor silt loam, 0 to 2 percent slopes, rarely flooded	198	*
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded	750	0.4
8284A	Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded	1,844	0.9
8405A	Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded	153	*
8452A	Riley loam, 0 to 2 percent slopes, occasionally flooded	674	0.3
M-W	Miscellaneous water	47	*
W	Water	1,725	0.9
	Total	202,030	100.0

* Less than 0.1 percent.

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland

(See text for a description of the limitations and hazards listed in this table. Only the soils that are generally available for use as cropland or pastureland are listed. Absence of an entry indicates that the soil is generally not suited to use as cropland or pastureland)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
8D:		
Hickory	Crusting, water erosion	Low pH, water erosion
8D2:		
Hickory	Crusting, water erosion	Low pH, water erosion
8F:		
Hickory	---	Equipment limitation, low pH, water erosion
17A:		
Keomah	Wetness, crusting	Wetness, low pH
30G:		
Hamburg	---	---
34B2:		
Tallula	High pH, water erosion	High pH, water erosion
43A:		
Ipava	Wetness	Generally not used as pastureland
45A:		
Denny	Ponding, crusting	Generally not used as pastureland
53B:		
Bloomfield	Wind erosion, limited available water capacity, excessive permeability	Low pH, wind erosion, limited available water capacity, low fertility, excessive permeability
53D:		
Bloomfield	Wind erosion, limited available water capacity, excessive permeability	Low pH, wind erosion, limited available water capacity, low fertility, excessive permeability
67A:		
Harpster	Ponding, poor tilth, excess lime	Generally not used as pastureland
68A:		
Sable	Ponding, poor tilth	Generally not used as pastureland
86B:		
Osco	Water erosion	Low pH
86C2:		
Osco	Crusting, water erosion	Low pH, water erosion
119D:		
Elco	Crusting, water erosion	Low pH, water erosion
119D2:		
Elco	Crusting, water erosion	Low pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
119D3:		
Elco	Poor tilth, crusting, water erosion	Poor tilth, low pH, water erosion, low fertility
131C2:		
Alvin	Water erosion	Low pH, water erosion, low fertility
131D2:		
Alvin	Water erosion	Low pH, water erosion, low fertility
134C2:		
Camden	Crusting, water erosion	Low pH, water erosion
136A:		
Brooklyn	Ponding	Generally not used as pastureland
138A:		
Shiloh	Ponding, poor tilth	Generally not used as pastureland
152A:		
Drummer	Ponding, poor tilth	Generally not used as pastureland
198A:		
Elburn	Wetness	Generally not used as pastureland
199A:		
Plano	No major limitations	Generally not used as pastureland
199B:		
Plano	Water erosion	Low pH
206A:		
Thorp	Ponding	Generally not used as pastureland
212C2:		
Thebes	Crusting, water erosion, excessive permeability	Low pH, water erosion, excessive permeability
243A:		
St. Charles	Crusting	Low pH
243B:		
St. Charles	Crusting, water erosion	Low pH, water erosion
244A:		
Hartsburg	Ponding, high pH, poor tilth	Generally not used as pastureland
257A:		
Clarksdale	Wetness, crusting	Wetness, low pH
270A:		
Stronghurst	Wetness, crusting	Wetness, low pH
279B:		
Rozetta	Crusting, water erosion	Low pH, water erosion
279B3:		
Rozetta	Poor tilth, crusting, water erosion	Poor tilth, low pH, water erosion, low fertility

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
279C2:		
Rozetta	Crusting, water erosion	Low pH, water erosion
279C3:		
Rozetta	Poor tilth, crusting, water erosion	Poor tilth, low pH, water erosion, low fertility
280C2:		
Fayette	Crusting, water erosion	Low pH, water erosion
379A:		
Dakota	Excessive permeability	Generally not used as pastureland
567C2:		
Elkhart	High pH, crusting, water erosion	High pH, water erosion
630C2:		
Navlys	High pH, crusting, water erosion	High pH, water erosion
630D3:		
Navlys	Poor tilth, high pH, crusting, water erosion	Poor tilth, high pH, water erosion, low fertility
675B:		
Greenbush	Crusting, water erosion	Low pH, water erosion
683A:		
Lawndale	Wetness, excessive permeability	Generally not used as pastureland
684A:		
Broadwell	Excessive permeability	Generally not used as pastureland
684B:		
Broadwell	Water erosion, excessive permeability	Excessive permeability
684C2:		
Broadwell	Crusting, water erosion, excessive permeability	Water erosion, excessive permeability
685B:		
Middletown	Crusting, water erosion, excessive permeability	Low pH, water erosion, excessive permeability
685C2:		
Middletown	Crusting, water erosion, excessive permeability	Low pH, water erosion, excessive permeability
685C3:		
Middletown	Poor tilth, crusting, water erosion, excessive permeability	Poor tilth, low pH, water erosion, low fertility, excessive permeability
685D2:		
Middletown	Crusting, water erosion, excessive permeability	Low pH, water erosion, excessive permeability

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
685D3:		
Middletown	Poor tilth, crusting, water erosion, excessive permeability	Poor tilth, low pH, water erosion, low fertility, excessive permeability
705A:		
Buckhart	No major limitations	Generally not used as pastureland
705B:		
Buckhart	Water erosion	No major limitations
827B:		
Broadwell	Water erosion, excessive permeability	Excessive permeability
Onarga	Excessive permeability	Low pH, excessive permeability
827C2:		
Broadwell	Crusting, water erosion, excessive permeability	Water erosion, excessive permeability
Onarga	Water erosion, excessive permeability	Low pH, water erosion, excessive permeability
828B:		
Broadwell	Water erosion, excessive permeability	Water erosion, excessive permeability
Sparta	Wind erosion, limited available water capacity, excessive permeability	Low pH, wind erosion, limited available water capacity, excessive permeability
828D2:		
Broadwell	Crusting, water erosion, excessive permeability	Water erosion, excessive permeability
Sparta	Wind erosion, limited available water capacity, excessive permeability	Low pH, wind erosion, limited available water capacity, excessive permeability
861B2:		
Princeton	Wind erosion, excessive permeability	Low pH, wind erosion, low fertility, excessive permeability
Bloomfield	Wind erosion, limited available water capacity, excessive permeability	Low pH, wind erosion, limited available water capacity, low fertility, excessive permeability
861D2:		
Princeton	Water erosion, wind erosion, excessive permeability	Low pH, water erosion, wind erosion, low fertility, excessive permeability
Bloomfield	Wind erosion, limited available water capacity, excessive permeability	Low pH, wind erosion, limited available water capacity, low fertility, excessive permeability

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
861F:		
Princeton	---	Equipment limitation, low pH, water erosion, low fertility, excessive permeability, wind erosion
Bloomfield	---	Equipment limitation, low pH, low fertility, excessive permeability, wind erosion, limited available water capacity
871B:		
Lenzburg	Generally not used as cropland	Water erosion, low fertility, excess lime
871D:		
Lenzburg	---	Water erosion, low fertility, excess lime
871G:		
Lenzburg	---	---
898D2:		
Hickory	Crusting, water erosion	Low pH, water erosion
Sylvan	High pH, crusting, water erosion	High pH, water erosion
898D3:		
Hickory	Poor tilth, crusting, water erosion	Poor tilth, low pH, water erosion, low fertility
Sylvan	Poor tilth, high pH, crusting, water erosion	Poor tilth, high pH, water erosion, low fertility
898F2:		
Hickory	---	Equipment limitation, low pH, water erosion
Sylvan	---	Equipment limitation, high pH, water erosion
898F3:		
Hickory	---	Equipment limitation, poor tilth, low pH, water erosion, low fertility
Sylvan	---	Equipment limitation, poor tilth, high pH, water erosion, low fertility
898G:		
Hickory	---	---
Sylvan	---	---
962C2:		
Sylvan	High pH, crusting, water erosion	High pH, water erosion
Bold	Excess lime, water erosion	Water erosion, excess lime

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
962C3:		
Sylvan	Poor tilth, high pH, crusting, water erosion	Poor tilth, high pH, water erosion, low fertility
Bold	Excess lime, water erosion	Water erosion, low fertility, excess lime
962D2:		
Sylvan	High pH, crusting, water erosion	High pH, water erosion
Bold	Excess lime, water erosion	Water erosion, excess lime
962D3:		
Sylvan	Poor tilth, high pH, crusting, water erosion	Poor tilth, high pH, water erosion, low fertility
Bold	Excess lime, water erosion	Water erosion, low fertility, excess lime
962E2:		
Sylvan	---	Equipment limitation, high pH, water erosion
Bold	---	Equipment limitation, water erosion, excess lime
962F2:		
Sylvan	---	Equipment limitation, high pH, water erosion
Bold	---	Equipment limitation, water erosion, excess lime
962G:		
Sylvan	---	---
Bold	---	---
965C2:		
Tallula	High pH, water erosion	High pH, water erosion
Bold	Excess lime, water erosion	Water erosion, excess lime
965D2:		
Tallula	High pH, water erosion	High pH, water erosion
Bold	Excess lime, water erosion	Water erosion, excess lime
3070A:		
Beaucoup	Flooding, ponding, poor tilth	Generally not used as pastureland
3070S:		
Beaucoup	Flooding, ponding, poor tilth	Generally not used as pastureland
3073A:		
Ross	Flooding	Generally not used as pastureland
3074A:		
Radford	Flooding, wetness	Flooding, wetness

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
3078A:		
Arenzville	Flooding	Flooding
3107A:		
Sawmill	Flooding, ponding, poor tilth	Generally not used as pastureland
3107L:		
Sawmill	Flooding, ponding, poor tilth	Generally not used as pastureland
3107S:		
Sawmill	Flooding, ponding, poor tilth	Generally not used as pastureland
3284A:		
Tice	Flooding, wetness, poor tilth	Generally not used as pastureland
3284S:		
Tice	Flooding, wetness, poor tilth	Generally not used as pastureland
3405A:		
Zook	Flooding, ponding, poor tilth	Generally not used as pastureland
3451A:		
Lawson	Flooding, wetness	Generally not used as pastureland
7037A:		
Worthen	No major limitations	Generally not used as pastureland
7037B:		
Worthen	Water erosion	Water erosion
7081A:		
Littleton	Wetness	Generally not used as pastureland
7148A:		
Proctor	No major limitations	Generally not used as pastureland
8070A:		
Beaucoup	Flooding, ponding, poor tilth	Generally not used as pastureland
8284A:		
Tice	Flooding, wetness, poor tilth	Generally not used as pastureland
8405A:		
Zook	Flooding, ponding, poor tilth	Generally not used as pastureland
8452A:		
Riley	Flooding, wetness, excessive permeability	Generally not used as pastureland

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(Yields for crops are those that can be expected under a high level of management, and yields for pasture are those that can be expected under an average level of management. All yields are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
8D:						
Hickory-------------	3e	99	34	40	3.29	4.80
8D2:						
Hickory-------------	3e	95	32	38	3.10	4.50
8F:						
Hickory-------------	6e	---	---	---	2.79	4.00
17A:						
Keomah--------------	2w	145	46	59	4.63	6.80
30G:						
Hamburg-------------	7e	---	---	---	---	---
34B2:						
Tallula-------------	2e	156	48	58	4.30	6.40
43A:						
Ipava---------------	1	172	56	69	---	---
45A:						
Denny---------------	3w	143	47	---	---	---
53B:						
Bloomfield----------	3s	103	33	44	3.50	5.20
53D:						
Bloomfield----------	4e	95	30	40	3.20	4.70
67A:						
Harpster------------	2w	164	52	---	---	---
68A:						
Sable---------------	2w	173	57	---	---	---
86B:						
Osco----------------	2e	170	53	67	6.16	9.10
86C2:						
Osco----------------	3e	160	50	63	5.78	8.30
119D:						
Elco----------------	3e	124	41	48	3.49	5.00
119D2:						
Elco----------------	3e	118	39	46	3.32	4.80
119D3:						
Elco----------------	4e	107	36	42	3.03	4.30
131C2:						
Alvin---------------	3e	126	41	49	3.15	4.60

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
131D2:						
Alvin---------------	4e	120	39	47	2.97	4.20
134C2:						
Camden--------------	3e	139	43	54	3.99	5.80
136A:						
Brooklyn------------	2w	136	44	---	---	---
138A:						
Shiloh--------------	2w	158	52	---	---	---
152A:						
Drummer-------------	2w	175	57	---	---	---
198A:						
Elburn--------------	1	178	55	67	---	---
199A:						
Plano---------------	1	175	54	67	---	---
199B:						
Plano---------------	2e	173	53	66	6.27	9.10
206A:						
Thorp---------------	2w	153	50	---	---	---
212C2:						
Thebes--------------	3e	126	41	49	3.40	4.90
243A:						
St. Charles---------	1	151	47	59	4.63	6.80
243B:						
St. Charles---------	2e	149	47	58	4.58	6.80
244A:						
Hartsburg-----------	2w	164	53	---	---	---
257A:						
Clarksdale----------	2w	157	50	62	4.75	7.00
270A:						
Stronghurst---------	2w	154	48	60	4.75	7.00
279B:						
Rozetta-------------	2e	147	46	58	4.70	6.90
279B3:						
Rozetta-------------	3e	130	40	52	4.20	6.00
279C2:						
Rozetta-------------	3e	138	43	55	4.42	6.50
279C3:						
Rozetta-------------	4e	127	40	51	4.10	5.80
280C2:						
Fayette-------------	3e	140	44	56	4.42	6.40

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
379A:						
Dakota	2s	135	45	55	---	---
567C2:						
Elkhart	3e	143	46	55	4.40	6.50
630C2:						
Navlys	3e	117	38	47	3.89	5.60
630D3:						
Navlys	4e	100	32	40	3.30	4.70
675B:						
Greenbush	2e	164	51	62	4.81	7.10
683A:						
Lawndale	1	178	55	67	---	---
684A:						
Broadwell	1	169	53	66	---	---
684B:						
Broadwell	2e	167	52	65	6.04	8.80
684C2:						
Broadwell	3e	157	49	61	5.70	8.30
685B:						
Middletown	2e	144	44	58	4.14	6.00
685C2:						
Middletown	3e	136	41	55	3.89	5.60
685C3:						
Middletown	4e	126	38	51	3.60	5.20
685D2:						
Middletown	3e	136	41	55	3.89	5.60
685D3:						
Middletown	4e	115	35	47	3.30	4.80
705A:						
Buckhart	1	171	55	67	---	---
705B:						
Buckhart	2e	169	54	66	6.60	9.20
802E:						
Orthents	6e	---	---	---	---	---
827B		155	49	61	5.22	7.70
Broadwell	2e					
Onarga	2e					
827C2		146	46	58	4.90	7.18
Broadwell	3e					
Onarga	3e					

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
828B-----------------		149	48	58	5.20	9.20
Broadwell-----------	2e					
Sparta--------------	4s					
828D2----------------		---	---	---	4.52	6.58
Broadwell-----------	3e					
Sparta--------------	6s					
835G.						
Earthen dam						
861B2----------------		108	41	44	3.34	5.08
Princeton-----------	2e					
Bloomfield----------	3s					
861D2----------------		99	31	40	3.10	4.54
Princeton-----------	3e					
Bloomfield----------	4e					
861F-----------------		---	---	---	2.67	3.84
Princeton-----------	6e					
Bloomfield----------	6e					
864.						
Pits, quarry						
871B:						
Lenzburg------------	2e	---	---	---	3.58	5.20
871D:						
Lenzburg------------	6e	---	---	---	3.29	4.80
871G:						
Lenzburg------------	7e	---	---	---	---	---
898D2----------------		106	35	42	3.12	4.50
Hickory-------------	3e					
Sylvan--------------	3e					
898D3----------------		96	32	39	2.90	4.10
Hickory-------------	4e					
Sylvan--------------	4e					
898F2----------------		---	---	---	2.50	3.40
Hickory-------------	6e					
Sylvan--------------	6e					
898F3----------------		---	---	---	2.20	3.10
Hickory-------------	6e					
Sylvan--------------	6e					
898G-----------------		---	---	---	---	---
Hickory-------------	7e					
Sylvan--------------	7e					
962C2----------------		131	39	48	3.60	5.16
Sylvan--------------	3e					
Bold----------------	3e					

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
962C3----------------		119	36	45	3.62	4.76
Sylvan--------------	4e					
Bold----------------	4e					
962D2----------------		120	37	46	3.24	4.64
Sylvan--------------	3e					
Bold----------------	3e					
962D3----------------		108	34	42	2.97	4.18
Sylvan--------------	4e					
Bold----------------	4e					
962E2----------------		---	---	---	3.07	3.98
Sylvan--------------	6e					
Bold----------------	6e					
962F2----------------		---	---	---	2.61	3.62
Sylvan--------------	6e					
Bold----------------	6e					
962G-----------------		---	---	---	---	---
Sylvan--------------	7e					
Bold----------------	7e					
965C2----------------		140	42	52	3.92	5.70
Tallula-------------	3e					
Bold----------------	3e					
965D2----------------		134	40	49	3.68	5.30
Tallula-------------	3e					
Bold----------------	3e					
3070A:						
Beaucoup------------	3w	143	48	---	---	---
3070S:						
Beaucoup------------	3w	143	48	---	---	---
3073A:						
Ross----------------	3w	147	48	---	---	---
3074A:						
Radford-------------	3w	150	48	---	4.50	6.70
3078A:						
Arenzville----------	2w	145	45	---	4.80	7.00
3107A:						
Sawmill-------------	3w	153	49	---	---	---
3107L:						
Sawmill-------------	4w	119	38	---	---	---
3107S:						
Sawmill-------------	3w	153	49	---	---	---
3284A:						
Tice----------------	3w	149	46	---	---	---

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
3284S:						
Tice----------------	3w	149	46	---	---	---
3405A:						
Zook----------------	3w	123	42	---	---	---
3451A:						
Lawson--------------	3w	154	50	---	---	---
7037A:						
Worthen-------------	1	175	54	67	---	---
7037B:						
Worthen-------------	2e	173	54	66	6.27	9.20
7081A:						
Littleton-----------	1	175	54	67	---	---
7148A:						
Proctor-------------	1	144	44	59	---	---
8070A:						
Beaucoup------------	2w	159	53	---	---	---
8284A:						
Tice----------------	2w	166	51	63	---	---
8405A:						
Zook----------------	3w	137	47	---	---	---
8452A:						
Riley---------------	2w	155	50	60	---	---

* Animal unit month: The amount of forage required to feed one mature cow, of approximately 1,000 pounds weight, with or without a calf, for 30 days.

Table 8.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
17A	Keomah silt loam, 0 to 2 percent slopes (where drained)
34B2	Tallula silt loam, 2 to 5 percent slopes, eroded
43A	Ipava silt loam, 0 to 2 percent slopes
45A	Denny silt loam, 0 to 2 percent slopes (where drained)
67A	Harpster silty clay loam, 0 to 2 percent slopes (where drained)
68A	Sable silty clay loam, 0 to 2 percent slopes (where drained)
86B	Osco silt loam, 2 to 5 percent slopes
131C2	Alvin fine sandy loam, 5 to 10 percent slopes, eroded
136A	Brooklyn silt loam, 0 to 2 percent slopes (where drained)
138A	Shiloh silty clay loam, 0 to 2 percent slopes (where drained)
152A	Drummer silty clay loam, 0 to 2 percent slopes (where drained)
198A	Elburn silt loam, 0 to 2 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B	Plano silt loam, 2 to 5 percent slopes
206A	Thorp silt loam, 0 to 2 percent slopes (where drained)
243A	St. Charles silt loam, 0 to 2 percent slopes
243B	St. Charles silt loam, 2 to 5 percent slopes
244A	Hartsburg silty clay loam, 0 to 2 percent slopes (where drained)
257A	Clarksdale silt loam, 0 to 2 percent slopes (where drained)
270A	Stronghurst silt loam, sandy substratum, 0 to 2 percent slopes (where drained)
279B	Rozetta silt loam, 2 to 5 percent slopes
279B3	Rozetta silty clay loam, 2 to 5 percent slopes, severely eroded
379A	Dakota loam, 0 to 2 percent slopes
675B	Greenbush silt loam, 2 to 5 percent slopes
683A	Lawndale silt loam, 0 to 2 percent slopes
684A	Broadwell silt loam, 0 to 2 percent slopes
684B	Broadwell silt loam, 2 to 5 percent slopes
685B	Middletown silt loam, 2 to 5 percent slopes
705A	Buckhart silt loam, 0 to 2 percent slopes
705B	Buckhart silt loam, 2 to 5 percent slopes
827B	Broadwell-Onarga complex, 2 to 5 percent slopes
828B	Broadwell-Sparta complex, 1 to 7 percent slopes
861B2	Princeton-Bloomfield fine sands, 1 to 7 percent slopes, eroded
861D2	Princeton-Bloomfield fine sands, 7 to 15 percent slopes, eroded
871B	Lenzburg silt loam, 1 to 7 percent slopes
3070A	Beaucoup silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3070S	Beaucoup silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3073A	Ross silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3078A	Arenzville silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3107S	Sawmill silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3284A	Tice silty clay loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3284S	Tice silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3405A	Zook silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)

Table 8.--Prime Farmland--Continued

Map symbol	Soil name
7037A	Worthen silt loam, 0 to 2 percent slopes, rarely flooded
7037B	Worthen silt loam, 2 to 5 percent slopes, rarely flooded
7081A	Littleton silt loam, 0 to 2 percent slopes, rarely flooded
7148A	Proctor silt loam, 0 to 2 percent slopes, rarely flooded
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8284A	Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded
8405A	Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8452A	Riley loam, 0 to 2 percent slopes, occasionally flooded

Table 9.--Hydric Soils

(Only map units that have hydric components are listed. See text for a description of hydric qualities and definitions of the hydric criteria codes)

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
17A:				
Keomah silt loam, 0 to 2 percent slopes	Keomah	Not hydric	ground moraine	---
	Denny	Hydric	depression	2B3
	Rushville	Hydric	depression	2B3
	Sable	Hydric	depression	2B3
43A:				
Ipava silt loam, 0 to 2 percent slopes	Ipava	Not hydric	ground moraine	---
	Sable	Hydric	depression	2B3
	Denny	Hydric	depression	2B3
45A:				
Denny silt loam, 0 to 2 percent slopes	Denny	Hydric	depression	2B3
67A:				
Harpster silty clay loam, 0 to 2 percent slopes	Harpster	Hydric	stream terrace	2B3
68A:				
Sable silty clay loam, 0 to 2 percent slopes	Sable	Hydric	ground moraine	2B3
136A:				
Brooklyn silt loam, 0 to 2 percent slopes	Brooklyn	Hydric	depression	2B3
138A:				
Shiloh silty clay loam, 0 to 2 percent slopes	Shiloh	Hydric	depression	2B3
152A:				
Drummer silty clay loam, 0 to 2 percent slopes	Drummer	Hydric	stream terrace	2B3
198A:				
Elburn silt loam, 0 to 2 percent slopes	Elburn	Not hydric	stream terrace	---
	Drummer	Hydric	depression	2B3
	Thorp	Hydric	depression	2B3
206A:				
Thorp silt loam, 0 to 2 percent slopes	Thorp	Hydric	depression	2B3
244A:				
Hartsburg silty clay loam, 0 to 2 percent slopes	Hartsburg	Hydric	ground moraine	2B3
257A:				
Clarksdale silt loam, 0 to 2 percent slopes	Clarksdale	Not hydric	ground moraine	---
	Sable	Hydric	depression	2B3
	Denny	Hydric	depression	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
270A:				
Stronghurst silt loam, sandy substratum, 0 to 2 percent slopes	Stronghurst	Not hydric	ground moraine	---
	Denny	Hydric	depression	2B3
	Rushville	Hydric	depression	2B3
	Sable	Hydric	depression	2B3
683A:				
Lawndale silt loam, 0 to 2 percent slopes	Lawndale	Not hydric	ground moraine	---
	Brooklyn	Hydric	depression	2B3
	Drummer	Hydric	depression	2B3
	Thorp	Hydric	depression	2B3
3070A:				
Beaucoup silty clay loam, 0 to 2 percent slopes, frequently flooded	Beaucoup	Hydric	flood plain	2B3
3070S:				
Beaucoup silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded	Beaucoup	Hydric	flood plain	2B3
3073A:				
Ross silt loam, 0 to 2 percent slopes, frequently flooded	Ross	Not hydric	flood plain	---
	Sawmill	Hydric	flood plain	2B3
3074A:				
Radford silt loam, 0 to 2 percent slopes, frequently flooded	Radford	Not hydric	flood plain	---
	Sawmill	Hydric	swale	2B3
3107A:				
Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	Sawmill	Hydric	flood plain	2B3
3107L:				
Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, long duration	Sawmill	Hydric	flood plain	2B3,3,4
3107S:				
Sawmill silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded	Sawmill	Hydric	flood plain	2B3
3284A:				
Tice silty clay loam, 0 to 2 percent slopes, frequently flooded	Tice	Not hydric	flood plain	---
	Beaucoup	Hydric	swale	2B3
	Sawmill	Hydric	swale	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
3284S:				
Tice silty clay loam, sandy substratum, 0 to 2 percent slopes, frequently flooded	Tice	Not hydric	flood plain	---
	Beaucoup	Hydric	swale	2B3
	Sawmill	Hydric	swale	2B3
3405A:				
Zook silty clay loam, 0 to 2 percent slopes, frequently flooded	Zook	Hydric	flood plain	2B3
3451A:				
Lawson silt loam, 0 to 2 percent slopes, frequently flooded	Lawson	Not hydric	flood plain	---
	Sawmill	Hydric	swale	2B3
7081A:				
Littleton silt loam, 0 to 2 percent slopes, rarely flooded	Littleton	Not hydric	alluvial fan	---
	Beaucoup	Hydric	depression	2B3
7148A:				
Proctor silt loam, 0 to 2 percent slopes, rarely flooded	Proctor	Not hydric	flood-plain step	---
	Sawmill	Hydric	flood plain	2B3
8070A:				
Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded	Beaucoup	Hydric	flood plain	2B3
8284A:				
Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded	Tice	Not hydric	flood plain	---
	Beaucoup	Hydric	depression	2B3
8405A:				
Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded	Zook	Hydric	flood plain	2B3
8452A:				
Riley loam, 0 to 2 percent slopes, occasionally flooded	Riley	Not hydric	flood plain	---
	Beaucoup	Hydric	swale	2B3

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8D:					
Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
8D2:					
Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
8F:					
Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
17A:					
Keomah	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
30G:					
Hamburg	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar
34B2:					
Tallula	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
43A:					
Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
45A:					
Denny	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
53B:					
Bloomfield	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
53D:					
Bloomfield	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
67A:					
Harpster	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
68A:					
Sable	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
86B:					
Osco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
86C2:					
Osco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
119D:					
Elco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
119D2:					
Elco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
119D3:					
Elco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
131C2:					
Alvin	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
131D2:					
Alvin------------------	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
134C2:					
Camden-----------------	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
136A:					
Brooklyn---------------	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
138A:					
Shiloh-----------------	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
152A:					
Drummer	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
198A:					
Elburn	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
199A:					
Plano	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
199B:					
Plano	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
206A:					
Thorp	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
212C2:					
Thebes	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
243A:					
St. Charles	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
243B:					
St. Charles	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
244A:					
Hartsburg	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
257A:					
Clarksdale	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
270A:					
Stronghurst	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
279B:					
Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
279B3:					
Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
279C2:					
Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
279C3:					
Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
280C2:					
Fayette	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
379A:					
Dakota	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
567C2:					
Elkhart	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
630C2:					
Navlys	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
630D3:					
Navlys	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
675B:					
Greenbush	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
683A:					
Lawndale	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
684A:					
Broadwell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
684B: Broadwell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
684C2: Broadwell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
685B: Middletown	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
685C2: Middletown	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
685C3:					
Middletown	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
685D2:					
Middletown	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
685D3:					
Middletown	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
705A:					
Buckhart	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
705B:					
Buckhart	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
802E. Orthents					
827B:					
Broadwell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Onarga	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
827C2:					
Broadwell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
827C2:					
Onarga	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
828B:					
Broadwell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Sparta	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
828D2:					
Broadwell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
828D2:					
Sparta	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
835G. Earthen dam					
861B2:					
Princeton	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
Bloomfield	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
861D2:					
Princeton	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
Bloomfield	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
861F:					
Princeton	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
Bloomfield	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
864. Pits, quarry					
871B:					
Lenzburg	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, thornless honeylocust	---	---
871D:					
Lenzburg	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, thornless honeylocust	---	---
871G:					
Lenzburg	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, thornless honeylocust	---	---
898D2:					
Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
898D3:					
Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
898F2:					
Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
898F3:					
Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
898G:					
Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
962C2:					
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Bold	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar
962C3:					
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Bold	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar
962D2:					
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
962D2:					
Bold	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar
962D3:					
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Bold	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar
962E2:					
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Bold	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
962F2:					
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Bold	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar
962G:					
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Bold	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar
965C2:					
Tallula	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
965C2:					
Bold	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar
965D2:					
Tallula	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Bold	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry	Eastern cottonwood	Carolina poplar
3070A:					
Beaucoup	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3070S:					
Beaucoup	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3073A:					
Ross	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3074A:					
Radford	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
3078A: Arenzville	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3107A: Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3107L: Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3107S:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3284A:					
Tice	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3284S:					
Tice	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3405A:					
Zook	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3451A:					
Lawson	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
7037A:					
Worthen	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
7037B: Worthen	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
7081A: Littleton	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
7148A: Proctor	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8070A:					
Beaucoup	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8284A:					
Tice	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8405A:					
Zook	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8452A:					
Riley	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--Forestland Productivity

(Only the soils suitable for production of commercial trees are listed)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
8D:				
Hickory	Bitternut hickory	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	White oak	85	72	
8D2:				
Hickory	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	85	72	
	Black oak	---	---	
	Green ash	---	---	
	Bitternut hickory	---	---	
8F:				
Hickory	Bitternut hickory	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	White oak	85	72	
17A:				
Keomah	Northern red oak	70	57	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	White oak	65	43	
30G:				
Hamburg	Black oak	---	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood.
	Bur oak	---	---	
	Eastern redcedar	---	---	
	Post oak	---	---	
	White oak	45	29	
53B:				
Bloomfield	Black oak	70	57	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine.
	Scarlet oak	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
53D:				
Bloomfield	Black oak	70	57	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine.
	Scarlet oak	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
119D:				
Elco	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	---	---	
	White oak	80	57	
119D2:				
Elco	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	White oak	85	72	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber	
			cu ft/acre	
119D3:				
Elco	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	White oak	85	72	
131C2:				
Alvin	Black walnut	---	---	Black walnut, bur oak, eastern white pine, pecan pin oak, tuliptree.
	Northern red oak	80	57	
	White oak	80	57	
131D2:				
Alvin	Black walnut	---	---	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree.
	Northern red oak	80	57	
	White oak	80	57	
134C2:				
Camden	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	85	72	
	Green ash	76	72	
212C2:				
Thebes	Black walnut	---	---	Black oak, common hackberry, eastern white pine.
	Northern red oak	---	---	
	White oak	80	57	
243A:				
St. Charles	Green ash	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	White oak	85	72	
243B:				
St. Charles	Green ash	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	White oak	85	72	
257A:				
Clarksdale	White oak	80	57	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Northern red oak	80	57	
270A:				
Stronghurst	Bur oak	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
279B:				
Rozetta	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Black walnut	---	---	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
279B3:				
Rozetta	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
279C2:				
Rozetta	Northern red oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	80	57	
	Black walnut	---	---	
279C3:				
Rozetta	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
280C2:				
Fayette	Northern red oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	80	57	
	Black walnut	---	---	
630C2:				
Navlys	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	White oak	85	72	
	Green ash	---	---	
	Pecan	---	---	
	Baldcypress	---	---	
630D3:				
Navlys	White oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	Green ash	---	---	
	Black walnut	---	---	
	Baldcypress	---	---	
	Pecan	---	---	
675B:				
Greenbush	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Black walnut	---	---	
685B:				
Middletown	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
685C2:				
Middletown	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
685C3:				
Middletown	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
685D2:				
Middletown	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
685D3:				
Middletown	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
802E. Orthents				
835G. Earthen dam				
861B2:				
Princeton	White oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree.
Bloomfield	Black oak	70	57	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine.
	Scarlet oak	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
861D2:				
Princeton	White oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree.
Bloomfield	Black oak	70	57	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine.
	Scarlet oak	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
861F:				
Princeton	White oak	90	72	Bur oak, eastern white pine, pecan, pin oak, tuliptree.
Bloomfield	Black oak	70	57	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine.
	Scarlet oak	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
864. Pits, quarry				
871B: Lenzburg	Black walnut	73	70	Bur oak, chinkapin oak, eastern redcedar, honeylocust.
	Eastern cottonwood	---	---	
871D: Lenzburg	Black walnut	73	70	Bur oak, chinkapin oak, eastern redcedar, honeylocust.
	Eastern cottonwood	---	---	
871G: Lenzburg	Black walnut	73	70	Bur oak, chinkapin oak, eastern redcedar, honeylocust.
	Eastern cottonwood	---	---	
898D2: Hickory	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	85	72	
	Black oak	---	---	
	Green ash	---	---	
	Bitternut hickory	---	---	
Sylvan	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
898D3: Hickory	Bitternut hickory	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	White oak	85	72	
Sylvan	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
898F2: Hickory	Bitternut hickory	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	White oak	85	72	
Sylvan	Black walnut	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
898F3:				
Hickory	Bitternut hickory	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	White oak	85	72	
Sylvan	Black walnut	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
898G:				
Hickory	Bitternut hickory	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	White oak	85	72	
Sylvan	Black walnut	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
962C2:				
Sylvan	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
Bold	---	---	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood.
962C3:				
Sylvan	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
Bold	---	---	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood.
962D2:				
Sylvan	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
Bold	---	---	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood.

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
962D3:				
Sylvan	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
Bold	---	---	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood.
962E2:				
Sylvan	Black walnut	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
Bold	---	---	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood.
962F2:				
Sylvan	Black walnut	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
Bold	---	---	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood.
962G:				
Sylvan	Black walnut	---	---	Eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	White oak	80	57	
Bold	---	---	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood.
3070A:				
Beaucoup	American sycamore	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	Pin oak	90	72	
	Eastern cottonwood	100	129	
3070S:				
Beaucoup	American sycamore	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	Pin oak	90	72	
	Eastern cottonwood	100	129	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
3073A:				
Ross	Black cherry	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Black walnut	---	---	
	Northern red oak	86	72	
	Sugar maple	85	57	
	White ash	---	---	
	White oak	---	---	
3074A:				
Radford	Pin oak	96	72	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Eastern cottonwood	---	---	
	White ash	---	---	
3078A:				
Arenzville	Bur oak	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Northern red oak	65	43	
	Silver maple	---	---	
3107A:				
Sawmill	Pin oak	90	72	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	American sycamore	---	---	
	Eastern cottonwood	---	---	
3107L:				
Sawmill	Pin oak	90	72	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	American sycamore	---	---	
	Eastern cottonwood	---	---	
3107S:				
Sawmill	Pin oak	90	72	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	American sycamore	---	---	
	Eastern cottonwood	---	---	
3284A:				
Tice	Virginia pine	90	90	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Eastern cottonwood	---	---	
	Pin oak	96	78	
	White ash	---	---	
3284S:				
Tice	Virginia pine	90	90	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Eastern cottonwood	---	---	
	Pin oak	96	78	
	White ash	---	---	
3405A:				
Zook	---	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
3451A:				
Lawson	Silver maple	70	29	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	White ash	---	---	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
8070A:				
Beaucoup	American sycamore	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	Pin oak	90	72	
	Eastern cottonwood	100	129	
8284A:				
Tice	Pin oak	96	72	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Eastern cottonwood	---	---	
	Green ash	---	---	
	White ash	---	---	
8405A:				
Zook	---	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
8452A:				
Riley	---	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.

Table 12a.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:						
Hickory-------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
8D2:						
Hickory-------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
8F:						
Hickory-------------	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
17A:						
Keomah--------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
30G:						
Hamburg-------------	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
34B2:						
Tallula-------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
43A:						
Ipava---------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
45A:						
Denny---------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
53B:						
Bloomfield----------	Moderate		Moderately suited		Moderate	
	Sandiness	0.50	Sandiness	0.50	Low strength	0.50
53D:						
Bloomfield----------	Moderate		Moderately suited		Moderate	
	Sandiness	0.50	Slope	0.50	Low strength	0.50
			Sandiness	0.50		

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
67A:						
Harpster	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
68A:						
Sable	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
86B:						
Osco	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
86C2:						
Osco	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
119D:						
Elco	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
119D2:						
Elco	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
119D3:						
Elco	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
131C2:						
Alvin	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
131D2:						
Alvin	Slight		Poorly suited		Moderate	
			Slope	1.00	Low strength	0.50
134C2:						
Camden	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
136A:						
Brooklyn	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
138A:						
Shiloh	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
152A:						
Drummer-------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
198A:						
Elburn--------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
199A:						
Plano---------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
199B:						
Plano---------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
206A:						
Thorp---------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
212C2:						
Thebes--------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
243A:						
St. Charles---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
243B:						
St. Charles---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
244A:						
Hartsburg-----------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
257A:						
Clarksdale----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
270A:						
Stronghurst---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
279B:						
Rozetta-------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
279B3:						
Rozetta-------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
279C2:						
Rozetta-------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
279C3:						
Rozetta-------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
280C2:						
Fayette-------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
379A:						
Dakota--------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
567C2:						
Elkhart-------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
630C2:						
Navlys--------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
630D3:						
Navlys--------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
675B:						
Greenbush-----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
683A:						
Lawndale------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
684A:						
Broadwell-----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
684B:						
Broadwell-----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
684C2:						
Broadwell-----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
685B:						
Middletown----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
685C2:						
Middletown----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
685C3:						
Middletown----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
685D2:						
Middletown----------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
685D3:						
Middletown----------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
705A:						
Buckhart-----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
705B:						
Buckhart-----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
802E:						
Orthents-----------	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
827B:						
Broadwell----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
Onarga-------------	Slight		Well suited		Moderate	
					Low strength	0.50
827C2:						
Broadwell----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
Onarga-------------	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
828B:						
Broadwell----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
Sparta-------------	Slight		Well suited		Moderate	
					Low strength	0.50

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
828D2:						
Broadwell-----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Slope	0.50	Low strength	1.00
			Low strength	0.50		
Sparta--------------	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
861B2:						
Princeton-----------	Moderate		Moderately suited		Moderate	
	Sandiness	0.50	Sandiness	0.50	Low strength	0.50
Bloomfield----------	Moderate		Moderately suited		Moderate	
	Sandiness	0.50	Sandiness	0.50	Low strength	0.50
861D2:						
Princeton-----------	Moderate		Moderately suited		Moderate	
	Sandiness	0.50	Slope	0.50	Low strength	0.50
			Sandiness	0.50		
Bloomfield----------	Moderate		Moderately suited		Moderate	
	Sandiness	0.50	Slope	0.50	Low strength	0.50
			Sandiness	0.50		
861F:						
Princeton-----------	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Sandiness	0.50	Sandiness	0.50		
Bloomfield----------	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Sandiness	0.50	Sandiness	0.50		
864:						
Pits, quarry--------	Not rated		Not rated		Not rated	
871B:						
Lenzburg------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
871D:						
Lenzburg------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
871G:						
Lenzburg------------	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
898D2:						
Hickory-------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
898D2:						
Sylvan--------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
898D3:						
Hickory-------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
Sylvan--------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
898F2:						
Hickory-------------	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
Sylvan--------------	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
898F3:						
Hickory-------------	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
Sylvan--------------	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
898G:						
Hickory-------------	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
Sylvan--------------	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
962C2:						
Sylvan--------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
Bold----------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
962C3:						
Sylvan--------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
Bold----------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
962D2:						
Sylvan	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
Bold	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
962D3:						
Sylvan	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
Bold	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
962E2:						
Sylvan	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
Bold	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
962F2:						
Sylvan	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
Bold	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
962G:						
Sylvan	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
Bold	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
965C2:						
Tallula	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
Bold	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
965D2:						
Tallula	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
965D2:						
Bold	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
3070A:						
Beaucoup	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
3070S:						
Beaucoup	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
3073A:						
Ross	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
3074A:						
Radford	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
3078A:						
Arenzville	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
3107A:						
Sawmill	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
3107L:						
Sawmill	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
3107S:						
Sawmill	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
3284A:						
Tice	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
3284S:						
Tice	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
3405A:						
Zook	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
3451A:						
Lawson	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
7037A:						
Worthen	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
7037B:						
Worthen	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
7081A:						
Littleton	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
7148A:						
Proctor	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
8070A:						
Beaucoup	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
8284A:						
Tice	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		

Table 12a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8405A:						
Zook----------------	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
8452A:						
Riley---------------	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		

Table 12b.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:						
Hickory	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
8D2:						
Hickory	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
8F:						
Hickory	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
17A:						
Keomah	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
30G:						
Hamburg	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
34B2:						
Tallula	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
43A:						
Ipava	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
45A:						
Denny	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
53B:						
Bloomfield	Slight		Slight		Moderately suited	
					Sandiness	0.50
53D:						
Bloomfield	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
					Sandiness	0.50
67A:						
Harpster	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50

Table 12b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A:						
Sable	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
86B:						
Osco	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
86C2:						
Osco	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
119D:						
Elco	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
119D2:						
Elco	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
119D3:						
Elco	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
131C2:						
Alvin	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
131D2:						
Alvin	Slight		Moderate		Poorly suited	
			Slope/erodibility	0.50	Slope	1.00
134C2:						
Camden	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
136A:						
Brooklyn	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
138A:						
Shiloh	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
152A:						
Drummer	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50

Table 12b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
198A:						
Elburn	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
199A:						
Plano	Slight		Slight		Moderately suited	
					Low strength	0.50
199B:						
Plano	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
206A:						
Thorp	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
212C2:						
Thebes	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
243A:						
St. Charles	Slight		Slight		Moderately suited	
					Low strength	0.50
243B:						
St. Charles	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
244A:						
Hartsburg	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
257A:						
Clarksdale	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
270A:						
Stronghurst	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
279B:						
Rozetta	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
279B3:						
Rozetta	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
279C2:						
Rozetta	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50

Table 12b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
279C3:						
Rozetta	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
280C2:						
Fayette	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
379A:						
Dakota	Slight		Slight		Moderately suited	
					Low strength	0.50
567C2:						
Elkhart	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
630C2:						
Navlys	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
630D3:						
Navlys	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
675B:						
Greenbush	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
683A:						
Lawndale	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
684A:						
Broadwell	Slight		Slight		Moderately suited	
					Low strength	0.50
684B:						
Broadwell	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
684C2:						
Broadwell	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
685B:						
Middletown	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
685C2:						
Middletown	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50

Table 12b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
685C3:						
Middletown	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
685D2:						
Middletown	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
685D3:						
Middletown	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
705A:						
Buckhart	Slight		Slight		Moderately suited	
					Low strength	0.50
705B:						
Buckhart	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
802E:						
Orthents	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
827B:						
Broadwell	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
Onarga	Slight		Slight		Well suited	
827C2:						
Broadwell	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
Onarga	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
828B:						
Broadwell	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
Sparta	Slight		Slight		Well suited	
828D2:						
Broadwell	Moderate		Severe		Moderately suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
					Low strength	0.50
Sparta	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
835G:						
Earthen dam	Not rated		Not rated		Not rated	

Table 12b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
861B2:						
Princeton-----------	Slight		Slight		Moderately suited	
					Sandiness	0.50
Bloomfield----------	Slight		Slight		Moderately suited	
					Sandiness	0.50
861D2:						
Princeton-----------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
					Sandiness	0.50
Bloomfield----------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
					Sandiness	0.50
861F:						
Princeton-----------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Sandiness	0.50
Bloomfield----------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Sandiness	0.50
864:						
Pits, quarry--------	Not rated		Not rated		Not rated	
871B:						
Lenzburg------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
871D:						
Lenzburg------------	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
871G:						
Lenzburg------------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
898D2:						
Hickory-------------	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Sylvan--------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
898D3:						
Hickory-------------	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Sylvan--------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50

Table 12b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
898F2:						
Hickory----------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Sylvan----------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
898F3:						
Hickory----------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Sylvan----------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
898G:						
Hickory----------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Sylvan----------	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
962C2:						
Sylvan----------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
Bold------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
962C3:						
Sylvan----------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
Bold------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
962D2:						
Sylvan----------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Bold------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
962D3:						
Sylvan----------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50

Table 12b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
962D3:						
Bold----------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
962E2:						
Sylvan--------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Bold----------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
962F2:						
Sylvan--------------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Bold----------------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
962G:						
Sylvan--------------	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Bold----------------	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
965C2:						
Tallula-------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
Bold----------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
965D2:						
Tallula-------------	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Bold----------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
3070A:						
Beaucoup------------	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50

Table 12b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
3070S:						
Beaucoup	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
3073A:						
Ross	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
3074A:						
Radford	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
3078A:						
Arenzville	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
3107A:						
Sawmill	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
3107L:						
Sawmill	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
3107S:						
Sawmill	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
3284A:						
Tice	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
3284S:						
Tice	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50

Table 12b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3405A:						
Zook----------------	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
3451A:						
Lawson--------------	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
7037A:						
Worthen-------------	Slight		Slight		Moderately suited	
					Low strength	0.50
7037B:						
Worthen-------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
7081A:						
Littleton-----------	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
7148A:						
Proctor-------------	Slight		Slight		Moderately suited	
					Low strength	0.50
8070A:						
Beaucoup------------	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
8284A:						
Tice----------------	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
8405A:						
Zook----------------	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
8452A:						
Riley---------------	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50

Table 12c.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
8D:						
Hickory	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
8D2:						
Hickory	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
8F:						
Hickory	Well suited		Unsuited		Moderately suited	
			Slope	1.00	Low strength	0.50
					Slope	0.50
17A:						
Keomah	Well suited		Well suited		Moderately suited	
					Low strength	0.50
30G:						
Hamburg	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
					Low strength	0.50
34B2:						
Tallula	Well suited		Well suited		Moderately suited	
					Low strength	0.50
43A:						
Ipava	Well suited		Well suited		Moderately suited	
					Low strength	0.50
45A:						
Denny	Well suited		Well suited		Moderately suited	
					Low strength	0.50
53B:						
Bloomfield	Moderately suited		Moderately suited		Moderately suited	
	Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
53D:						
Bloomfield	Moderately suited		Moderately suited		Moderately suited	
	Sandiness	0.50	Slope	0.50	Sandiness	0.50
			Sandiness	0.50		
67A:						
Harpster	Well suited		Well suited		Moderately suited	
					Low strength	0.50
68A:						
Sable	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 12c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
86B:						
Osco	Well suited		Well suited		Moderately suited	
					Low strength	0.50
86C2:						
Osco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
119D:						
Elco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
119D2:						
Elco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
119D3:						
Elco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
131C2:						
Alvin	Well suited		Moderately suited		Well suited	
			Slope	0.50		
131D2:						
Alvin	Well suited		Moderately suited		Well suited	
			Slope	0.50		
134C2:						
Camden	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
136A:						
Brooklyn	Well suited		Well suited		Moderately suited	
					Low strength	0.50
138A:						
Shiloh	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
152A:						
Drummer	Well suited		Well suited		Moderately suited	
					Low strength	0.50
198A:						
Elburn	Well suited		Well suited		Moderately suited	
					Low strength	0.50
199A:						
Plano	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 12c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
199B:						
Plano	Well suited		Well suited		Moderately suited	
					Low strength	0.50
206A:						
Thorp	Well suited		Well suited		Moderately suited	
					Low strength	0.50
212C2:						
Thebes	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
243A:						
St. Charles	Well suited		Well suited		Moderately suited	
					Low strength	0.50
243B:						
St. Charles	Well suited		Well suited		Moderately suited	
					Low strength	0.50
244A:						
Hartsburg	Well suited		Well suited		Moderately suited	
					Low strength	0.50
257A:						
Clarksdale	Well suited		Well suited		Moderately suited	
					Low strength	0.50
270A:						
Stronghurst	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
279B:						
Rozetta	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
279B3:						
Rozetta	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
279C2:						
Rozetta	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
279C3:						
Rozetta	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
280C2:						
Fayette	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		

Table 12c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
379A:						
Dakota	Well suited		Well suited		Moderately suited	
					Low strength	0.50
567C2:						
Elkhart	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
630C2:						
Navlys	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
630D3:						
Navlys	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
675B:						
Greenbush	Well suited		Well suited		Moderately suited	
					Low strength	0.50
683A:						
Lawndale	Well suited		Well suited		Moderately suited	
					Low strength	0.50
684A:						
Broadwell	Well suited		Well suited		Moderately suited	
					Low strength	0.50
684B:						
Broadwell	Well suited		Well suited		Moderately suited	
					Low strength	0.50
684C2:						
Broadwell	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
685B:						
Middletown	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
685C2:						
Middletown	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
685C3:						
Middletown	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		

Table 12c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
685D2:						
Middletown----------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
685D3:						
Middletown----------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
705A:						
Buckhart------------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
705B:						
Buckhart------------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
802E:						
Orthents------------	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Low strength	0.50
					Slope	0.50
827B:						
Broadwell-----------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
Onarga--------------	Well suited		Well suited		Well suited	
827C2:						
Broadwell-----------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
Onarga--------------	Well suited		Moderately suited		Well suited	
			Slope	0.50		
828B:						
Broadwell-----------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
Sparta--------------	Well suited		Well suited		Well suited	
828D2:						
Broadwell-----------	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
Sparta--------------	Well suited		Moderately suited		Well suited	
			Slope	0.50		
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
861B2:						
Princeton-----------	Moderately suited		Moderately suited		Moderately suited	
	Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
Bloomfield----------	Moderately suited		Moderately suited		Moderately suited	
	Sandiness	0.50	Sandiness	0.50	Sandiness	0.50

Table 12c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
861D2:						
Princeton-----------	Moderately suited		Moderately suited		Moderately suited	
	Sandiness	0.50	Slope	0.50	Sandiness	0.50
			Sandiness	0.50		
Bloomfield----------	Moderately suited		Moderately suited		Moderately suited	
	Sandiness	0.50	Slope	0.50	Sandiness	0.50
			Sandiness	0.50		
861F:						
Princeton-----------	Moderately suited		Poorly suited		Moderately suited	
	Sandiness	0.50	Slope	0.75	Sandiness	0.50
			Sandiness	0.50	Slope	0.50
Bloomfield----------	Moderately suited		Poorly suited		Moderately suited	
	Sandiness	0.50	Slope	0.75	Sandiness	0.50
			Sandiness	0.50	Slope	0.50
864:						
Pits, quarry--------	Not rated		Not rated		Not rated	
871B:						
Lenzburg------------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
871D:						
Lenzburg------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
871G:						
Lenzburg------------	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
898D2:						
Hickory-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
Sylvan--------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
898D3:						
Hickory-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
Sylvan--------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		

Table 12c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
898F2:						
Hickory	Moderately suited		Unsuited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	1.00	Low strength	0.50
			Stickiness; high plasticity index	0.50	Slope	0.50
Sylvan	Moderately suited		Unsuited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	1.00	Low strength	0.50
			Stickiness; high plasticity index	0.50	Slope	0.50
898F3:						
Hickory	Moderately suited		Unsuited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	1.00	Low strength	0.50
			Stickiness; high plasticity index	0.50	Slope	0.50
Sylvan	Moderately suited		Unsuited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	1.00	Low strength	0.50
			Stickiness; high plasticity index	0.50	Slope	0.50
898G:						
Hickory	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Sylvan	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
962C2:						
Sylvan	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
Bold	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
962C3:						
Sylvan	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
Bold	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
962D2:						
Sylvan	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
Bold	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50

Table 12c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
962D3:						
Sylvan	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
Bold	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
962E2:						
Sylvan	Moderately suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
			Stickiness; high plasticity index	0.50	Slope	0.50
Bold	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Low strength	0.50
					Slope	0.50
962F2:						
Sylvan	Moderately suited		Unsuited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	1.00	Low strength	0.50
			Stickiness; high plasticity index	0.50	Slope	0.50
Bold	Well suited		Unsuited		Moderately suited	
			Slope	1.00	Low strength	0.50
					Slope	0.50
962G:						
Sylvan	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Bold	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
					Low strength	0.50
965C2:						
Tallula	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
Bold	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
965D2:						
Tallula	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
Bold	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
3070A:						
Beaucoup	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3070S:						
Beaucoup	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 12c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
3073A:						
Ross	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3074A:						
Radford	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3078A:						
Arenzville	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3107A:						
Sawmill	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3107L:						
Sawmill	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3107S:						
Sawmill	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3284A:						
Tice	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3284S:						
Tice	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3405A:						
Zook	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
3451A:						
Lawson	Well suited		Well suited		Moderately suited	
					Low strength	0.50
7037A:						
Worthen	Well suited		Well suited		Moderately suited	
					Low strength	0.50
7037B:						
Worthen	Well suited		Well suited		Moderately suited	
					Low strength	0.50
7081A:						
Littleton	Well suited		Well suited		Moderately suited	
					Low strength	0.50
7148A:						
Proctor	Well suited		Well suited		Moderately suited	
					Low strength	0.50
8070A:						
Beaucoup	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 12c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
8284A:						
Tice----------------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
8405A:						
Zook----------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
8452A:						
Riley---------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50

Table 12d.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:				
Hickory	Well suited		Well suited	
8D2:				
Hickory	Well suited		Well suited	
8F:				
Hickory	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
17A:				
Keomah	Well suited		Well suited	
30G:				
Hamburg	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
34B2:				
Tallula	Well suited		Well suited	
43A:				
Ipava	Well suited		Well suited	
45A:				
Denny	Well suited		Well suited	
53B:				
Bloomfield	Well suited		Well suited	
53D:				
Bloomfield	Well suited		Well suited	
67A:				
Harpster	Well suited		Well suited	
68A:				
Sable	Well suited		Well suited	
86B:				
Osco	Well suited		Well suited	
86C2:				
Osco	Well suited		Well suited	
119D:				
Elco	Well suited		Well suited	
119D2:				
Elco	Well suited		Well suited	
119D3:				
Elco	Well suited		Well suited	

Table 12d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
131C2:				
Alvin	Well suited		Well suited	
131D2:				
Alvin	Well suited		Well suited	
134C2:				
Camden	Well suited		Well suited	
136A:				
Brooklyn	Well suited		Well suited	
138A:				
Shiloh	Well suited		Well suited	
152A:				
Drummer	Well suited		Well suited	
198A:				
Elburn	Well suited		Well suited	
199A:				
Plano	Well suited		Well suited	
199B:				
Plano	Well suited		Well suited	
206A:				
Thorp	Well suited		Well suited	
212C2:				
Thebes	Well suited		Well suited	
243A:				
St. Charles	Well suited		Well suited	
243B:				
St. Charles	Well suited		Well suited	
244A:				
Hartsburg	Well suited		Well suited	
257A:				
Clarksdale	Well suited		Well suited	
270A:				
Stronghurst	Well suited		Well suited	
279B:				
Rozetta	Well suited		Well suited	
279B3:				
Rozetta	Well suited		Well suited	
279C2:				
Rozetta	Well suited		Well suited	
279C3:				
Rozetta	Well suited		Well suited	

Table 12d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
280C2:				
Fayette	Well suited		Well suited	
379A:				
Dakota	Well suited		Well suited	
567C2:				
Elkhart	Well suited		Well suited	
630C2:				
Navlys	Well suited		Well suited	
630D3:				
Navlys	Well suited		Well suited	
675B:				
Greenbush	Well suited		Well suited	
683A:				
Lawndale	Well suited		Well suited	
684A:				
Broadwell	Well suited		Well suited	
684B:				
Broadwell	Well suited		Well suited	
684C2:				
Broadwell	Well suited		Well suited	
685B:				
Middletown	Well suited		Well suited	
685C2:				
Middletown	Well suited		Well suited	
685C3:				
Middletown	Well suited		Well suited	
685D2:				
Middletown	Well suited		Well suited	
685D3:				
Middletown	Well suited		Well suited	
705A:				
Buckhart	Well suited		Well suited	
705B:				
Buckhart	Well suited		Well suited	
802E:				
Orthents	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
827B:				
Broadwell	Well suited		Well suited	
Onarga	Well suited		Well suited	

Table 12d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
827C2:				
Broadwell-----------	Well suited		Well suited	
Onarga--------------	Well suited		Well suited	
828B:				
Broadwell-----------	Well suited		Well suited	
Sparta--------------	Well suited		Well suited	
828D2:				
Broadwell-----------	Well suited		Well suited	
Sparta--------------	Well suited		Well suited	
835G:				
Earthen dam---------	Not rated		Not rated	
861B2:				
Princeton-----------	Well suited		Well suited	
Bloomfield----------	Well suited		Well suited	
861D2:				
Princeton-----------	Well suited		Well suited	
Bloomfield----------	Well suited		Well suited	
861F:				
Princeton-----------	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Bloomfield----------	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
864:				
Pits, quarry--------	Not rated		Not rated	
871B:				
Lenzburg------------	Well suited		Well suited	
871D:				
Lenzburg------------	Well suited		Well suited	
871G:				
Lenzburg------------	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
898D2:				
Hickory-------------	Well suited		Well suited	
Sylvan--------------	Well suited		Well suited	
898D3:				
Hickory-------------	Well suited		Well suited	
Sylvan--------------	Well suited		Well suited	

Table 12d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
898F2:				
Hickory	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Sylvan	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
898F3:				
Hickory	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Sylvan	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
898G:				
Hickory	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
Sylvan	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
962C2:				
Sylvan	Well suited		Well suited	
Bold	Well suited		Well suited	
962C3:				
Sylvan	Well suited		Well suited	
Bold	Well suited		Well suited	
962D2:				
Sylvan	Well suited		Well suited	
Bold	Well suited		Well suited	
962D3:				
Sylvan	Well suited		Well suited	
Bold	Well suited		Well suited	
962E2:				
Sylvan	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Bold	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
962F2:				
Sylvan	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Bold	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
962G:				
Sylvan	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
Bold	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00

Table 12d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
965C2:				
Tallula	Well suited		Well suited	
Bold	Well suited		Well suited	
965D2:				
Tallula	Well suited		Well suited	
Bold	Well suited		Well suited	
3070A:				
Beaucoup	Well suited		Well suited	
3070S:				
Beaucoup	Well suited		Well suited	
3073A:				
Ross	Well suited		Well suited	
3074A:				
Radford	Well suited		Well suited	
3078A:				
Arenzville	Well suited		Well suited	
3107A:				
Sawmill	Well suited		Well suited	
3107L:				
Sawmill	Well suited		Well suited	
3107S:				
Sawmill	Well suited		Well suited	
3284A:				
Tice	Well suited		Well suited	
3284S:				
Tice	Well suited		Well suited	
3405A:				
Zook	Well suited		Well suited	
3451A:				
Lawson	Well suited		Well suited	
7037A:				
Worthen	Well suited		Well suited	
7037B:				
Worthen	Well suited		Well suited	
7081A:				
Littleton	Well suited		Well suited	
7148A:				
Proctor	Well suited		Well suited	
8070A:				
Beaucoup	Well suited		Well suited	

Table 12d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8284A:				
Tice	Well suited		Well suited	
8405A:				
Zook	Well suited		Well suited	
8452A:				
Riley	Well suited		Well suited	

Table 12e.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential for seedling mortality	
	Rating class and limiting features	Value
8D:		
Hickory	Low	
8D2:		
Hickory	Low	
8F:		
Hickory	Low	
17A:		
Keomah	High	
	Wetness	1.00
30G:		
Hamburg	Moderate	
	Lime	0.50
	Soil reaction	0.50
34B2:		
Tallula	Low	
43A:		
Ipava	Low	
45A:		
Denny	High	
	Wetness	1.00
53B:		
Bloomfield	Low	
53D:		
Bloomfield	Low	
67A:		
Harpster	High	
	Wetness	1.00
	Lime	0.50
	Soil reaction	0.50
68A:		
Sable	High	
	Wetness	1.00
86B:		
Osco	Low	
86C2:		
Osco	Low	

Table 12e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
119D:		
Elco	Low	
119D2:		
Elco	Low	
119D3:		
Elco	Low	
131C2:		
Alvin	Low	
131D2:		
Alvin	Low	
134C2:		
Camden	Low	
136A:		
Brooklyn	High	
	Wetness	1.00
138A:		
Shiloh	High	
	Wetness	1.00
152A:		
Drummer	High	
	Wetness	1.00
198A:		
Elburn	Low	
199A:		
Plano	Low	
199B:		
Plano	Low	
206A:		
Thorp	High	
	Wetness	1.00
212C2:		
Thebes	Low	
243A:		
St. Charles	Low	
243B:		
St. Charles	Low	
244A:		
Hartsburg	High	
	Wetness	1.00
257A:		
Clarksdale	High	
	Wetness	1.00

Table 12e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
270A:		
Stronghurst----------	High	
	Wetness	1.00
279B:		
Rozetta-------------	Low	
279B3:		
Rozetta-------------	Low	
279C2:		
Rozetta-------------	Low	
279C3:		
Rozetta-------------	Low	
280C2:		
Fayette-------------	Low	
379A:		
Dakota--------------	Low	
567C2:		
Elkhart-------------	Low	
630C2:		
Navlys--------------	Low	
630D3:		
Navlys--------------	Low	
675B:		
Greenbush-----------	Low	
683A:		
Lawndale------------	Low	
684A:		
Broadwell-----------	Low	
684B:		
Broadwell-----------	Low	
684C2:		
Broadwell-----------	Low	
685B:		
Middletown----------	Low	
685C2:		
Middletown----------	Low	
685C3:		
Middletown----------	Low	
685D2:		
Middletown----------	Low	
685D3:		
Middletown----------	Low	

Table 12e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
705A:		
Buckhart	Low	
705B:		
Buckhart	Low	
802E:		
Orthents	Low	
827B:		
Broadwell	Low	
Onarga	Low	
827C2:		
Broadwell	Low	
Onarga	Low	
828B:		
Broadwell	Low	
Sparta	Low	
828D2:		
Broadwell	Low	
Sparta	Low	
835G:		
Earthen dam	Not rated	
861B2:		
Princeton	Low	
Bloomfield	Low	
861D2:		
Princeton	Low	
Bloomfield	Low	
861F:		
Princeton	Low	
Bloomfield	Low	
864:		
Pits, quarry	Not rated	
871B:		
Lenzburg	Low	
871D:		
Lenzburg	Low	
871G:		
Lenzburg	Low	

Table 12e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
898D2:		
Hickory	Low	
Sylvan	Low	
898D3:		
Hickory	Low	
Sylvan	Low	
898F2:		
Hickory	Low	
Sylvan	Low	
898F3:		
Hickory	Low	
Sylvan	Low	
898G:		
Hickory	Low	
Sylvan	Low	
962C2:		
Sylvan	Low	
Bold	Moderate	
	Lime	0.50
	Soil reaction	0.50
962C3:		
Sylvan	Low	
Bold	Moderate	
	Lime	0.50
	Soil reaction	0.50
962D2:		
Sylvan	Low	
Bold	Moderate	
	Lime	0.50
	Soil reaction	0.50
962D3:		
Sylvan	Low	
Bold	Moderate	
	Lime	0.50
	Soil reaction	0.50
962E2:		
Sylvan	Low	
Bold	Moderate	
	Lime	0.50
	Soil reaction	0.50

Table 12e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
962F2:		
Sylvan	Low	
Bold	Moderate	
	Lime	0.50
	Soil reaction	0.50
962G:		
Sylvan	Low	
Bold	Moderate	
	Lime	0.50
	Soil reaction	0.50
965C2:		
Tallula	Low	
Bold	Moderate	
	Lime	0.50
	Soil reaction	0.50
965D2:		
Tallula	Low	
Bold	Moderate	
	Lime	0.50
	Soil reaction	0.50
3070A:		
Beaucoup	High	
	Wetness	1.00
3070S:		
Beaucoup	High	
	Wetness	1.00
3073A:		
Ross	Low	
3074A:		
Radford	Low	
3078A:		
Arenzville	Low	
3107A:		
Sawmill	High	
	Wetness	1.00
3107L:		
Sawmill	High	
	Wetness	1.00
3107S:		
Sawmill	High	
	Wetness	1.00
3284A:		
Tice	Low	

Table 12e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality	
	Rating class and limiting features	Value
3284S:		
Tice	Low	
3405A:		
Zook	High	
	Wetness	1.00
3451A:		
Lawson	Low	
7037A:		
Worthen	Low	
7037B:		
Worthen	Low	
7081A:		
Littleton	Low	
7148A:		
Proctor	Low	
8070A:		
Beaucoup	High	
	Wetness	1.00
8284A:		
Tice	Low	
8405A:		
Zook	High	
	Wetness	1.00
8452A:		
Riley	Low	

Table 13a.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
8D2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
8F:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
17A:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.94	Restricted permeability	0.96
30G:						
Hamburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
34B2:						
Tallula	Not limited		Not limited		Somewhat limited	
					Slope	0.28
43A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
45A:						
Denny	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
53B:						
Bloomfield	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
					Slope	0.50
53D:						
Bloomfield	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Slope	1.00
	Slope	0.37	Slope	0.37	Too sandy	1.00

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
86B:						
Osco	Not limited		Not limited		Somewhat limited	
					Slope	0.28
86C2:						
Osco	Not limited		Not limited		Very limited	
					Slope	1.00
119D:						
Elco	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
119D2:						
Elco	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
119D3:						
Elco	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
131C2:						
Alvin	Not limited		Not limited		Very limited	
					Slope	1.00
131D2:						
Alvin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
134C2:						
Camden	Not limited		Not limited		Very limited	
					Slope	1.00
136A:						
Brooklyn	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
138A:						
Shiloh	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
198A:						
Elburn	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
199A:						
Plano	Not limited		Not limited		Not limited	
199B:						
Plano	Not limited		Not limited		Somewhat limited	
					Slope	0.28
206A:						
Thorp	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
212C2:						
Thebes	Not limited		Not limited		Very limited	
					Slope	1.00
243A:						
St. Charles	Not limited		Not limited		Not limited	
243B:						
St. Charles	Not limited		Not limited		Somewhat limited	
					Slope	0.28
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
257A:						
Clarksdale	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
270A:						
Stronghurst	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
279B:						
Rozetta	Not limited		Not limited		Somewhat limited	
					Slope	0.28
279B3:						
Rozetta	Not limited		Not limited		Somewhat limited	
					Slope	0.28
279C2:						
Rozetta	Not limited		Not limited		Very limited	
					Slope	1.00
279C3:						
Rozetta	Not limited		Not limited		Very limited	
					Slope	1.00
280C2:						
Fayette	Not limited		Not limited		Very limited	
					Slope	1.00
379A:						
Dakota	Not limited		Not limited		Not limited	
567C2:						
Elkhart	Not limited		Not limited		Very limited	
					Slope	1.00
630C2:						
Navlys	Not limited		Not limited		Very limited	
					Slope	1.00
630D3:						
Navlys	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
675B:						
Greenbush	Not limited		Not limited		Somewhat limited	
					Slope	0.28
683A:						
Lawndale	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
684A:						
Broadwell	Not limited		Not limited		Not limited	
684B:						
Broadwell	Not limited		Not limited		Somewhat limited	
					Slope	0.28
684C2:						
Broadwell	Not limited		Not limited		Very limited	
					Slope	1.00

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
685B:						
Middletown----------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
685C2:						
Middletown----------	Not limited		Not limited		Very limited	
					Slope	1.00
685C3:						
Middletown----------	Not limited		Not limited		Very limited	
					Slope	1.00
685D2:						
Middletown----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
685D3:						
Middletown----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
705A:						
Buckhart------------	Not limited		Not limited		Not limited	
705B:						
Buckhart------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
802E:						
Orthents------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
827B:						
Broadwell-----------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
Onarga--------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
827C2:						
Broadwell-----------	Not limited		Not limited		Very limited	
					Slope	1.00
Onarga--------------	Not limited		Not limited		Very limited	
					Slope	1.00
828B:						
Broadwell-----------	Not limited		Not limited		Somewhat limited	
					Slope	0.50
Sparta--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84	Too sandy	0.84
					Slope	0.50
828D2:						
Broadwell-----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
Sparta--------------	Somewhat limited		Somewhat limited		Very limited	
	Too sandy	0.84	Too sandy	0.84	Slope	1.00
	Slope	0.37	Slope	0.37	Too sandy	0.84

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
835G:						
Earthen dam----------	Not rated		Not rated		Not rated	
861B2:						
Princeton-----------	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
					Slope	0.50
Bloomfield----------	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
					Slope	0.50
861D2:						
Princeton-----------	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Slope	1.00
	Slope	0.37	Slope	0.37	Too sandy	1.00
Bloomfield----------	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Slope	1.00
	Slope	0.37	Slope	0.37	Too sandy	1.00
861F:						
Princeton-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Too sandy	1.00	Slope	1.00
	Too sandy	1.00	Slope	1.00	Too sandy	1.00
Bloomfield----------	Very limited		Very limited		Very limited	
	Slope	1.00	Too sandy	1.00	Slope	1.00
	Too sandy	1.00	Slope	1.00	Too sandy	1.00
864:						
Pits, quarry--------	Not rated		Not rated		Not rated	
871B:						
Lenzburg------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
					Gravel content	0.02
					Content of large stones	0.01
871D:						
Lenzburg------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.02
					Content of large stones	0.01
871G:						
Lenzburg------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.02
					Content of large stones	0.01

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
898D2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
898D3:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
898F2:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Sylvan	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
898F3:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Sylvan	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
898G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Sylvan	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
962C2:						
Sylvan	Not limited		Not limited		Very limited	
					Slope	1.00
Bold	Not limited		Not limited		Very limited	
					Slope	1.00
962C3:						
Sylvan	Not limited		Not limited		Very limited	
					Slope	1.00
Bold	Not limited		Not limited		Very limited	
					Slope	1.00
962D2:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
Bold	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
962D3:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
Bold	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
962E2:						
Sylvan	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Bold	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
962F2:						
Sylvan	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Bold	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
962G:						
Sylvan	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Bold	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
965C2:						
Tallula	Not limited		Not limited		Very limited Slope	 1.00
Bold	Not limited		Not limited		Very limited Slope	 1.00
965D2:						
Tallula	Somewhat limited Slope	 0.96	Somewhat limited Slope	 0.96	Very limited Slope	 1.00
Bold	Somewhat limited Slope	 0.96	Somewhat limited Slope	 0.96	Very limited Slope	 1.00
3070A:						
Beaucoup	Very limited Depth to saturated zone Flooding Ponding Restricted permeability	 1.00 1.00 1.00 0.21	Very limited Ponding Depth to saturated zone Flooding Restricted permeability	 1.00 1.00 0.40 0.21	Very limited Depth to saturated zone Flooding Ponding Restricted permeability	 1.00 1.00 1.00 0.21
3070S:						
Beaucoup	Very limited Depth to saturated zone Flooding Ponding Restricted permeability	 1.00 1.00 1.00 0.21	Very limited Ponding Depth to saturated zone Flooding Restricted permeability	 1.00 1.00 0.40 0.21	Very limited Depth to saturated zone Flooding Ponding Restricted permeability	 1.00 1.00 1.00 0.21
3073A:						
Ross	Very limited Flooding	 1.00	Somewhat limited Flooding	 0.40	Very limited Flooding	 1.00
3074A:						
Radford	Very limited Flooding Depth to saturated zone	 1.00 0.98	Somewhat limited Depth to saturated zone Flooding	 0.75 0.40	Very limited Flooding Depth to saturated zone	 1.00 0.98

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
3078A:						
Arenzville----------	Very limited Flooding	 1.00	Somewhat limited Flooding	 0.40	Very limited Flooding	 1.00
3107A:						
Sawmill------------	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00 0.40	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00
3107L:						
Sawmill------------	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00 0.40	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00
3107S:						
Sawmill------------	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00 0.40	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00
3284A:						
Tice---------------	Very limited Flooding Depth to saturated zone	 1.00 0.98	Somewhat limited Depth to saturated zone Flooding	 0.75 0.40	Very limited Flooding Depth to saturated zone	 1.00 0.98
3284S:						
Tice---------------	Very limited Flooding Depth to saturated zone	 1.00 0.98	Somewhat limited Depth to saturated zone Flooding	 0.75 0.40	Very limited Flooding Depth to saturated zone	 1.00 0.98
3405A:						
Zook---------------	Very limited Depth to saturated zone Flooding Ponding Restricted permeability	 1.00 1.00 1.00 0.96	Very limited Ponding Depth to saturated zone Restricted permeability Flooding	 1.00 1.00 0.96 0.40	Very limited Depth to saturated zone Flooding Ponding Restricted permeability	 1.00 1.00 1.00 0.96
3451A:						
Lawson-------------	Very limited Flooding Depth to saturated zone	 1.00 0.98	Somewhat limited Depth to saturated zone Flooding	 0.75 0.40	Very limited Flooding Depth to saturated zone	 1.00 0.98
7037A:						
Worthen------------	Very limited Flooding	 1.00	Not limited		Not limited	
7037B:						
Worthen------------	Very limited Flooding	 1.00	Not limited		Somewhat limited Slope	 0.28

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7081A:						
Littleton-----------	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Depth to saturated zone	0.98				
7148A:						
Proctor-------------	Very limited		Not limited		Not limited	
	Flooding	1.00				
8070A:						
Beaucoup------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Restricted permeability	0.21	Flooding	0.60
	Restricted permeability	0.21			Restricted permeability	0.21
8284A:						
Tice----------------	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Depth to saturated zone	0.98			Flooding	0.60
8405A:						
Zook----------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Restricted permeability	0.96	Restricted permeability	0.96
	Restricted permeability	0.96			Flooding	0.60
8452A:						
Riley---------------	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Depth to saturated zone	0.98			Flooding	0.60

Table 13b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:						
Hickory-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.96
8D2:						
Hickory-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.96
8F:						
Hickory-------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.02	Slope	1.00
17A:						
Keomah--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
30G:						
Hamburg-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
34B2:						
Tallula-------------	Not limited		Not limited		Not limited	
43A:						
Ipava---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
45A:						
Denny---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
53B:						
Bloomfield----------	Very limited		Very limited		Somewhat limited	
	Too sandy	1.00	Too sandy	1.00	Droughty	0.01
53D:						
Bloomfield----------	Very limited		Very limited		Somewhat limited	
	Too sandy	1.00	Too sandy	1.00	Slope	0.37
					Droughty	0.01
67A:						
Harpster------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
68A:						
Sable---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
86B:						
Osco	Not limited		Not limited		Not limited	
86C2:						
Osco	Not limited		Not limited		Not limited	
119D:						
Elco	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
119D2:						
Elco	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
119D3:						
Elco	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
131C2:						
Alvin	Not limited		Not limited		Not limited	
131D2:						
Alvin	Not limited		Not limited		Somewhat limited	
					Slope	0.96
134C2:						
Camden	Not limited		Not limited		Not limited	
136A:						
Brooklyn	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
138A:						
Shiloh	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
198A:						
Elburn	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
199A:						
Plano	Not limited		Not limited		Not limited	
199B:						
Plano	Not limited		Not limited		Not limited	
206A:						
Thorp	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails Rating class and limiting features	Value	Off-road motorcycle trails Rating class and limiting features	Value	Golf fairways Rating class and limiting features	Value
212C2:						
Thebes--------------	Not limited		Not limited		Not limited	
243A:						
St. Charles---------	Not limited		Not limited		Not limited	
243B:						
St. Charles---------	Not limited		Not limited		Not limited	
244A:						
Hartsburg-----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
257A:						
Clarksdale----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
270A:						
Stronghurst---------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
279B:						
Rozetta-------------	Not limited		Not limited		Not limited	
279B3:						
Rozetta-------------	Not limited		Not limited		Not limited	
279C2:						
Rozetta-------------	Not limited		Not limited		Not limited	
279C3:						
Rozetta-------------	Not limited		Not limited		Not limited	
280C2:						
Fayette-------------	Not limited		Not limited		Not limited	
379A:						
Dakota--------------	Not limited		Not limited		Not limited	
567C2:						
Elkhart-------------	Not limited		Not limited		Not limited	
630C2:						
Navlys--------------	Not limited		Not limited		Not limited	
630D3:						
Navlys--------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
675B:						
Greenbush-----------	Not limited		Not limited		Not limited	
683A:						
Lawndale------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
684A:						
Broadwell	Not limited		Not limited		Not limited	
684B:						
Broadwell	Not limited		Not limited		Not limited	
684C2:						
Broadwell	Not limited		Not limited		Not limited	
685B:						
Middletown	Not limited		Not limited		Not limited	
685C2:						
Middletown	Not limited		Not limited		Not limited	
685C3:						
Middletown	Not limited		Not limited		Not limited	
685D2:						
Middletown	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
685D3:						
Middletown	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
705A:						
Buckhart	Not limited		Not limited		Not limited	
705B:						
Buckhart	Not limited		Not limited		Not limited	
802E:						
Orthents	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.68				
827B:						
Broadwell	Not limited		Not limited		Not limited	
Onarga	Not limited		Not limited		Not limited	
827C2:						
Broadwell	Not limited		Not limited		Not limited	
Onarga	Not limited		Not limited		Not limited	
828B:						
Broadwell	Not limited		Not limited		Not limited	
Sparta	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84	Droughty	0.03
828D2:						
Broadwell	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.37
Sparta	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84	Slope	0.37
					Droughty	0.03

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
835G:						
Earthen dam	Not rated		Not rated		Not rated	
861B2:						
Princeton	Very limited		Very limited		Not limited	
	Too sandy	1.00	Too sandy	1.00		
Bloomfield	Very limited		Very limited		Somewhat limited	
	Too sandy	1.00	Too sandy	1.00	Droughty	0.01
861D2:						
Princeton	Very limited		Very limited		Somewhat limited	
	Too sandy	1.00	Too sandy	1.00	Slope	0.37
Bloomfield	Very limited		Very limited		Somewhat limited	
	Too sandy	1.00	Too sandy	1.00	Slope	0.37
					Droughty	0.01
861F:						
Princeton	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Slope	1.00
	Slope	1.00				
Bloomfield	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Slope	1.00
	Slope	1.00			Droughty	0.01
864:						
Pits, quarry	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Not limited		Not limited		Somewhat limited	
					Content of large stones	0.01
871D:						
Lenzburg	Not limited		Not limited		Somewhat limited	
					Slope	0.96
					Content of large stones	0.01
871G:						
Lenzburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Content of large stones	0.01
898D2:						
Hickory	Not limited		Not limited		Somewhat limited	
					Slope	0.96
Sylvan	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
898D3:						
Hickory	Not limited		Not limited		Somewhat limited	
					Slope	0.96
Sylvan	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
898F2:						
Hickory	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.02	Slope	1.00
Sylvan	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.02		
898F3:						
Hickory	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.02	Slope	1.00
Sylvan	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.02		
898G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Sylvan	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
962C2:						
Sylvan	Not limited		Not limited		Not limited	
Bold	Not limited		Not limited		Not limited	
962C3:						
Sylvan	Not limited		Not limited		Not limited	
Bold	Not limited		Not limited		Not limited	
962D2:						
Sylvan	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
Bold	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
962D3:						
Sylvan	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
Bold	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
962E2:						
Sylvan	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.82				
Bold	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.82				

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
962F2:						
Sylvan	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.04		
Bold	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.04		
962G:						
Sylvan	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
Bold	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
965C2:						
Tallula	Not limited		Not limited		Not limited	
Bold	Not limited		Not limited		Not limited	
965D2:						
Tallula	Not limited		Not limited		Somewhat limited	
					Slope	0.96
Bold	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
3070A:						
Beaucoup	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40		
3070S:						
Beaucoup	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40		
3073A:						
Ross	Somewhat limited		Somewhat limited		Very limited	
	Flooding	0.40	Flooding	0.40	Flooding	1.00
3074A:						
Radford	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
					Depth to saturated zone	0.75
	Flooding	0.40	Flooding	0.40		
3078A:						
Arenzville	Somewhat limited		Somewhat limited		Very limited	
	Flooding	0.40	Flooding	0.40	Flooding	1.00

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
3107L:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
3107S:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
3284A:						
Tice	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
3284S:						
Tice	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
3405A:						
Zook	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
3451A:						
Lawson	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
7037A:						
Worthen	Not limited		Not limited		Not limited	
7037B:						
Worthen	Not limited		Not limited		Not limited	
7081A:						
Littleton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
7148A:						
Proctor	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8070A:						
Beaucoup------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00		
					Flooding	0.60
8284A:						
Tice----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60
8405A:						
Zook----------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00		
					Flooding	0.60
8452A:						
Riley---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60

Table 14.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
8D:										
Hickory-----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
8D2:										
Hickory-----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
8F:										
Hickory-----------	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
17A:										
Keomah------------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
30G:										
Hamburg-----------	Very poor.	Poor	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
34B2:										
Tallula-----------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
43A:										
Ipava-------------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
45A:										
Denny-------------	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
53B:										
Bloomfield--------	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
53D:										
Bloomfield--------	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
67A:										
Harpster----------	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
68A:										
Sable-------------	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
86B:										
Osco--------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
86C2:										
Osco--------------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
119D:										
Elco--------------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
119D2:										
Elco	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
119D3:										
Elco	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
131C2:										
Alvin	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
131D2:										
Alvin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
134C2:										
Camden	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
136A:										
Brooklyn	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
138A:										
Shiloh	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
152A:										
Drummer	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
198A:										
Elburn	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
199A:										
Plano	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
199B:										
Plano	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
206A:										
Thorp	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
212C2:										
Thebes	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
243A:										
St. Charles	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
243B:										
St. Charles	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
244A:										
Hartsburg	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
257A:										
Clarksdale	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
270A: Stronghurst	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
279B: Rozetta	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
279B3: Rozetta	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
279C2: Rozetta	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
279C3: Rozetta	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
280C2: Fayette	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
379A: Dakota	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
567C2: Elkhart	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
630C2: Navlys	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
630D3: Navlys	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
675B: Greenbush	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
683A: Lawndale	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
684A: Broadwell	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
684B: Broadwell	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
684C2: Broadwell	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
685B: Middletown	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
685C2:										
Middletown--------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
685C3:										
Middletown--------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
685D2:										
Middletown--------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
685D3:										
Middletown--------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
705A:										
Buckhart----------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
705B:										
Buckhart----------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
802E.										
Orthents										
827B:										
Broadwell---------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Onarga------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
827C2:										
Broadwell---------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Onarga------------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
828B:										
Broadwell---------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Sparta------------	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
828D2:										
Broadwell---------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Sparta------------	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
835G.										
Earthen dam										

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
861B2:										
Princeton	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
Bloomfield	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
861D2:										
Princeton	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Bloomfield	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
861F:										
Princeton	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Bloomfield	Very poor.	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
864. Pits, quarry										
871B:										
Lenzburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
871D:										
Lenzburg	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
871G:										
Lenzburg	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
898D2:										
Hickory	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Sylvan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
898D3:										
Hickory	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Sylvan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
898F2:										
Hickory	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Sylvan	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
898F3:										
Hickory	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Sylvan	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
898G:										
Hickory	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Sylvan	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
962C2:										
Sylvan	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Bold	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
962C3:										
Sylvan	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Bold	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
962D2:										
Sylvan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Bold	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
962D3:										
Sylvan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Bold	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
962E2:										
Sylvan	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Bold	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
962F2:										
Sylvan	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Bold	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
962G:										
Sylvan	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Bold	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
965C2:										
Tallula	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Bold	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
965D2:										
Tallula	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Bold	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
3070A:										
Beaucoup	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3070S:										
Beaucoup	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3073A:										
Ross	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
3074A:										
Radford	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
3078A:										
Arenzville	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
3107A:										
Sawmill	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3107L:										
Sawmill	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3107S:										
Sawmill	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3284A:										
Tice	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
3284S:										
Tice	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
3405A:										
Zook	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3451A:										
Lawson	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
7037A:										
Worthen	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
7037B:										
Worthen	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
7081A:										
Littleton---------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
7148A:										
Proctor-----------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
8070A:										
Beaucoup----------	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
8284A:										
Tice--------------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
8405A:										
Zook--------------	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
8452A:										
Riley-------------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.

Table 15a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8D2:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8F:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
17A:						
Keomah--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00			Shrink-swell	1.00
30G:						
Hamburg-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
34B2:						
Tallula-------------	Not limited		Not limited		Not limited	
43A:						
Ipava---------------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
45A:						
Denny---------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
53B:						
Bloomfield----------	Not limited		Not limited		Not limited	
53D:						
Bloomfield----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
67A:						
Harpster------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
68A:						
Sable	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
86B:						
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
86C2:						
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to saturated zone	0.15	Shrink-swell	0.50
119D:						
Elco	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Shrink-swell	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Slope	0.96		
119D2:						
Elco	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Shrink-swell	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Slope	0.96		
119D3:						
Elco	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Shrink-swell	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Slope	0.96		
131C2:						
Alvin	Not limited		Not limited		Somewhat limited	
					Slope	0.97
131D2:						
Alvin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
134C2:						
Camden	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
136A:						
Brooklyn	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
138A:						
Shiloh	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
198A:						
Elburn	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199A:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199B:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.27	Shrink-swell	0.27	Shrink-swell	0.27
206A:						
Thorp	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
212C2:						
Thebes	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
243A:						
St. Charles	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
243B:						
St. Charles	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
257A:						
Clarksdale	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
270A:						
Stronghurst	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
279B:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
279B3:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.15	Shrink-swell	0.50
279C2:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to saturated zone	0.15	Shrink-swell	0.50
279C3:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.15	Slope	0.97
					Shrink-swell	0.50
280C2:						
Fayette	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
379A:						
Dakota	Not limited		Not limited		Not limited	
567C2:						
Elkhart	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
630C2:						
Navlys	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.15	Slope	0.97
					Shrink-swell	0.50
630D3:						
Navlys	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.15	Shrink-swell	0.50
675B:						
Greenbush	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
683A:						
Lawndale-----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
684A:						
Broadwell----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
684B:						
Broadwell----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
684C2:						
Broadwell----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
685B:						
Middletown---------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
685C2:						
Middletown---------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
685C3:						
Middletown---------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
685D2:						
Middletown---------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
685D3:						
Middletown---------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
705A:						
Buckhart-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
705B:						
Buckhart-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
802E:						
Orthents-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
827B:						
Broadwell-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Onarga--------------	Not limited		Not limited		Not limited	
827C2:						
Broadwell-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
Onarga--------------	Not limited		Not limited		Somewhat limited	
					Slope	0.97
828B:						
Broadwell-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Sparta--------------	Not limited		Not limited		Not limited	
828D2:						
Broadwell-----------	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.37	Slope	0.37	Shrink-swell	0.50
Sparta--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
861B2:						
Princeton-----------	Not limited		Not limited		Not limited	
Bloomfield----------	Not limited		Not limited		Not limited	
861D2:						
Princeton-----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
Bloomfield----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
861F:						
Princeton-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Bloomfield----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
864:						
Pits, quarry--------	Not rated		Not rated		Not rated	
871B:						
Lenzburg------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
871D:						
Lenzburg------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
871G:						
Lenzburg------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
898D2:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Sylvan--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
898D3:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Sylvan--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
898F2:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
898F3:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
898G:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
962C2:						
Sylvan--------------	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
962C2:						
Bold----------------	Not limited		Not limited		Somewhat limited	
					Slope	0.97
962C3:						
Sylvan--------------	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
Bold----------------	Not limited		Not limited		Somewhat limited	
					Slope	0.97
962D2:						
Sylvan--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
Bold----------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
962D3:						
Sylvan--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
Bold----------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
962E2:						
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
Bold----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
962F2:						
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
Bold----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
962G:						
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
Bold----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
965C2:						
Tallula-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.97
Bold----------------	Not limited		Not limited		Somewhat limited	
					Slope	0.97

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
965D2:						
Tallula	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
Bold	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
3070A:						
Beaucoup	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3070S:						
Beaucoup	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3073A:						
Ross	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.35		
3074A:						
Radford	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
			Shrink-swell	0.50		
3078A:						
Arenzville	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Shrink-swell	0.50		
			Depth to saturated zone	0.24		
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3107L:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3107S:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3284A:						
Tice	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3284S:						
Tice	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3405A:						
Zook	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
3451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
			Shrink-swell	0.50		
7037A:						
Worthen	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
7037B:						
Worthen	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
7081A:						
Littleton	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
7148A:						
Proctor	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50			Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8070A:						
Beaucoup------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8284A:						
Tice----------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8405A:						
Zook----------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
8452A:						
Riley---------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50			Shrink-swell	0.50

Table 15b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
8D:						
Hickory	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
8D2:						
Hickory	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
8F:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
17A:						
Keomah	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
30G:						
Hamburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.50		
34B2:						
Tallula	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
43A:						
Ipava	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
45A:						
Denny	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53B:						
Bloomfield----------	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Droughty	0.00
53D:						
Bloomfield----------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.37	Cutbanks cave	1.00	Slope	0.37
			Slope	0.37	Droughty	0.00
67A:						
Harpster------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
68A:						
Sable---------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
86B:						
Osco----------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
86C2:						
Osco----------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
119D:						
Elco----------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
119D2:						
Elco----------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
119D3:						
Elco----------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
131C2:						
Alvin---------------	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
131D2:						
Alvin---------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.96	Cutbanks cave	1.00	Slope	0.96
	Frost action	0.50	Slope	0.96		
134C2:						
Camden--------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
136A:						
Brooklyn------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00	Too clayey	0.01		
	Shrink-swell	1.00				
138A:						
Shiloh--------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				
152A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
198A:						
Elburn--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
199A:						
Plano---------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
199B:						
Plano---------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.27				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
206A:						
Thorp	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
212C2:						
Thebes	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
243A:						
St. Charles	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
243B:						
St. Charles	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
257A:						
Clarksdale	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
270A:						
Stronghurst	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
279B:						
Rozetta	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
279B3:						
Rozetta	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
279C2:						
Rozetta	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
279C3:						
Rozetta	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
280C2:						
Fayette	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
379A:						
Dakota	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
567C2:						
Elkhart	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
630C2:						
Navlys	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
630D3:						
Navlys	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Depth to saturated zone	0.15		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
675B:						
Greenbush	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
683A:						
Lawndale	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
684A:						
Broadwell-----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
684B:						
Broadwell-----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
684C2:						
Broadwell-----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
685B:						
Middletown----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
685C2:						
Middletown----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
685C3:						
Middletown----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
685D2:						
Middletown----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Cutbanks cave	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96				
	Shrink-swell	0.50				
685D3:						
Middletown----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Cutbanks cave	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96				
	Shrink-swell	0.50				
705A:						
Buckhart------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		
705B:						
Buckhart------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
802E:						
Orthents	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
827B:						
Broadwell	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
Onarga	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
827C2:						
Broadwell	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
Onarga	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
828B:						
Broadwell	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
Sparta	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Droughty	0.03
828D2:						
Broadwell	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Cutbanks cave	1.00	Slope	0.37
	Low strength	1.00	Slope	0.37		
	Shrink-swell	0.50				
	Slope	0.37				
Sparta	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.37	Cutbanks cave	1.00	Slope	0.37
			Slope	0.37	Droughty	0.03
835G:						
Earthen dam	Not rated		Not rated		Not rated	
861B2:						
Princeton	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
Bloomfield	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Droughty	0.00
861D2:						
Princeton	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	1.00	Slope	0.37
	Slope	0.37	Slope	0.37		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
861D2:						
Bloomfield----------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.37	Cutbanks cave	1.00	Slope	0.37
			Slope	0.37	Droughty	0.00
861F:						
Princeton-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00		
Bloomfield----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	1.00	Droughty	0.00
864:						
Pits, quarry--------	Not rated		Not rated		Not rated	
871B:						
Lenzburg-----------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Cutbanks cave	1.00	Content of large stones	0.01
	Shrink-swell	0.50				
	Frost action	0.50				
871D:						
Lenzburg-----------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Cutbanks cave	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Content of large stones	0.01
	Shrink-swell	0.50				
	Frost action	0.50				
871G:						
Lenzburg-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	1.00	Content of large stones	0.01
	Shrink-swell	0.50				
	Frost action	0.50				
898D2:						
Hickory-------------	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
Sylvan--------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.50		
	Slope	0.96				
	Shrink-swell	0.50				
898D3:						
Hickory-------------	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
898D3:						
Sylvan--------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.50		
	Slope	0.96				
	Shrink-swell	0.50				
898F2:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
898F3:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
898G:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
962C2:						
Sylvan--------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
Bold----------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	0.78				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
962C3:						
Sylvan--------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
Bold----------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	0.78				
962D2:						
Sylvan--------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.50		
	Slope	0.96				
	Shrink-swell	0.50				
Bold----------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.50		
	Low strength	0.78				
962D3:						
Sylvan--------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.50		
	Slope	0.96				
	Shrink-swell	0.50				
Bold----------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Low strength	0.78				
962E2:						
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
Bold----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	0.78				
962F2:						
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
Bold----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	0.78				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
962G:						
Sylvan	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
Bold	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	0.78				
965C2:						
Tallula	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
Bold	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	0.78				
965D2:						
Tallula	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.50		
	Slope	0.96				
Bold	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Low strength	0.78				
3070A:						
Beaucoup	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
3070S:						
Beaucoup	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.80		
	Low strength	1.00				
3073A:						
Ross	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Flooding	0.80	Flooding	1.00
	Frost action	0.50	Depth to saturated zone	0.35		
			Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3074A:						
Radford-------------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
3078A:						
Arenzville----------	Very limited		Somewhat limited		Very limited	
	Frost action	1.00	Flooding	0.80	Flooding	1.00
	Flooding	1.00	Depth to saturated zone	0.24		
			Cutbanks cave	0.10		
3107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
3107L:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
3107S:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.80		
	Low strength	1.00				
3284A:						
Tice----------------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
3284S:						
Tice----------------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Cutbanks cave	1.00	Depth to saturated	0.75
	Low strength	1.00	Flooding	0.80		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3405A:						
Zook----------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00	Too clayey	0.00		
3451A:						
Lawson--------------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
7037A:						
Worthen-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	0.78				
	Flooding	0.40				
7037B:						
Worthen-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	0.78				
	Flooding	0.40				
7081A:						
Littleton-----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Flooding	0.40				
7148A:						
Proctor-------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
	Flooding	0.40				
8070A:						
Beaucoup------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8284A:						
Tice	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
8405A:						
Zook	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00	Too clayey	0.00		
8452A:						
Riley	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
	Low strength	1.00	Flooding	0.60		
	Depth to saturated zone	0.78				
	Shrink-swell	0.50				

Table 16a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:				
Hickory-------------	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
8D2:				
Hickory-------------	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
8F:				
Hickory-------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
17A:				
Keomah--------------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
30G:				
Hamburg-------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
34B2:				
Tallula-------------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
43A:				
Ipava---------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
45A:				
Denny---------------	Very limited		Very limited	
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
53B:				
Bloomfield----------	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
	Filtering capacity	1.00	Slope	0.32
53D:				
Bloomfield----------	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Slope	1.00
	Filtering capacity	1.00	Seepage	1.00
	Slope	0.37		
67A:				
Harpster------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.46	Seepage	0.53
68A:				
Sable---------------	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
86B:				
Osco----------------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.40	Slope	0.18
86C2:				
Osco----------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
	Depth to saturated zone	0.40	Seepage	0.53
119D:				
Elco----------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
	Slope	0.96	Depth to saturated zone	0.04
119D2:				
Elco----------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
	Slope	0.96	Depth to saturated zone	0.04

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
119D3:				
Elco	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
	Slope	0.96	Depth to saturated zone	0.04
131C2:				
Alvin	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	1.00
131D2:				
Alvin	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Slope	1.00
	Slope	0.96	Seepage	1.00
134C2:				
Camden	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	1.00
136A:				
Brooklyn	Very limited		Very limited	
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
138A:				
Shiloh	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
152A:				
Drummer	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.46	Seepage	0.53
198A:				
Elburn	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage (bottom layer)	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
199A:				
Plano	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
	Restricted permeability	0.46		
199B:				
Plano	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	0.18
	Restricted permeability	0.46		
206A:				
Thorp	Very limited		Very limited	
	Restricted permeability	1.00	Ponding	1.00
			Seepage	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
	Seepage (bottom layer)	1.00		
212C2:				
Thebes	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	1.00
	Restricted permeability	0.46		
243A:				
St. Charles	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
243B:				
St. Charles	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
244A:				
Hartsburg	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
257A:				
Clarksdale	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
270A:				
Stronghurst---------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage (bottom layer)	1.00	Seepage	0.53
	Restricted permeability	0.46		
279B:				
Rozetta------------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
279B3:				
Rozetta------------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
279C2:				
Rozetta------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.40		
279C3:				
Rozetta------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.40		
280C2:				
Fayette------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
379A:				
Dakota-------------	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
	Restricted permeability	0.46		
567C2:				
Elkhart------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
630C2:				
Navlys-------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.40		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
630D3:				
Navlys	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.40		
675B:				
Greenbush	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
683A:				
Lawndale	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
			Depth to saturated zone	1.00
	Seepage (bottom layer)	1.00		
	Restricted permeability	0.46		
684A:				
Broadwell	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
	Restricted permeability	0.46		
684B:				
Broadwell	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	0.18
	Restricted permeability	0.46		
684C2:				
Broadwell	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	1.00
	Restricted permeability	0.46		
685B:				
Middletown	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	0.18
	Restricted permeability	0.46		
685C2:				
Middletown	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	1.00
	Restricted permeability	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
685C3:				
Middletown----------	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	1.00
	Restricted permeability	0.46		
685D2:				
Middletown----------	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Slope	1.00
			Seepage	1.00
	Slope	0.96		
	Restricted permeability	0.46		
685D3:				
Middletown----------	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Slope	1.00
			Seepage	1.00
	Slope	0.96		
	Restricted permeability	0.46		
705A:				
Buckhart------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
705B:				
Buckhart------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
802E:				
Orthents------------	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00		
827B:				
Broadwell-----------	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	0.18
	Restricted permeability	0.46		
Onarga--------------	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	0.18
827C2:				
Broadwell-----------	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	1.00
	Restricted permeability	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
827C2:				
Onarga	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	1.00
828B:				
Broadwell	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	0.32
	Restricted permeability	0.46		
Sparta	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.32
	Seepage (bottom layer)	1.00		
828D2:				
Broadwell	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Slope	1.00
			Seepage	1.00
	Restricted permeability	0.46		
	Slope	0.37		
Sparta	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
			Seepage	1.00
	Seepage (bottom layer)	1.00		
	Slope	0.37		
835G:				
Earthen dam	Not rated		Not rated	
861B2:				
Princeton	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	0.32
	Restricted permeability	0.46		
Bloomfield	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Slope	0.32
	Filtering capacity	1.00		
861D2:				
Princeton	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Slope	1.00
			Seepage	1.00
	Restricted permeability	0.46		
	Slope	0.37		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
861D2:				
Bloomfield	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Slope	1.00
	Filtering capacity	1.00	Seepage	1.00
	Slope	0.37		
861F:				
Princeton	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage (bottom layer)	1.00	Seepage	1.00
	Restricted permeability	0.46		
Bloomfield	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage (bottom layer)	1.00	Seepage	1.00
	Filtering capacity	1.00		
864:				
Pits, quarry	Not rated		Not rated	
871B:				
Lenzburg	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.32
871D:				
Lenzburg	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.96		
871G:				
Lenzburg	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00		
898D2:				
Hickory	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Sylvan	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
898D3:				
Hickory	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
898D3:				
Sylvan	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
898F2:				
Hickory	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Sylvan	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
898F3:				
Hickory	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Sylvan	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
898G:				
Hickory	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Sylvan	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
962C2:				
Sylvan	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
Bold	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
962C3:				
Sylvan	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
Bold	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
962D2:				
Sylvan	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Bold	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
962D3:				
Sylvan	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Bold	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
962E2:				
Sylvan	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Bold	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
962F2:				
Sylvan	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Bold	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
962G:				
Sylvan	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Bold	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
965C2:				
Tallula	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
965C2:				
Bold----------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
965D2:				
Tallula-------------	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Bold----------------	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
3070A:				
Beaucoup------------	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
3070S:				
Beaucoup------------	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage (bottom layer)	1.00		
	Restricted permeability	1.00		
3073A:				
Ross----------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Seepage (bottom layer)	1.00	Seepage	1.00
	Depth to saturated zone	0.84	Depth to saturated zone	0.17
	Restricted permeability	0.46		
3074A:				
Radford-------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3078A:				
Arenzville----------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.65	Seepage	0.53
	Restricted permeability	0.46	Depth to saturated zone	0.02

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
3107A:				
Sawmill-------------	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3107L:				
Sawmill-------------	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3107S:				
Sawmill-------------	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage (bottom layer)	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46		
3284A:				
Tice----------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3284S:				
Tice----------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage (bottom layer)	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46		
3405A:				
Zook----------------	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Restricted permeability	1.00	Flooding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
3451A:				
Lawson	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
7037A:				
Worthen	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Flooding	0.40
	Flooding	0.40		
7037B:				
Worthen	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Flooding	0.40
	Flooding	0.40	Slope	0.18
7081A:				
Littleton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
			Flooding	0.40
	Flooding	0.40		
7148A:				
Proctor	Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00
			Flooding	0.40
	Restricted permeability	0.46		
	Flooding	0.40		
8070A:				
Beaucoup	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
8284A:				
Tice	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
8405A:				
Zook	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Restricted permeability	1.00	Flooding	1.00
			Depth to saturated zone	1.00
	Ponding	1.00		
	Depth to saturated zone	1.00		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8452A:				
Riley---------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage (bottom layer)	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46		

Table 16b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:						
Hickory	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
8D2:						
Hickory	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
8F:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
17A:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
30G:						
Hamburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
34B2:						
Tallula	Not limited		Not limited		Not limited	
43A:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
45A:						
Denny	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
53B:						
Bloomfield	Very limited		Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
53D:						
Bloomfield	Very limited		Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	0.50	Slope	0.37	Too sandy	0.50
	Slope	0.37			Slope	0.37

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
86B:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
86C2:						
Osco	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
119D:						
Elco	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
119D2:						
Elco	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
119D3:						
Elco	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
131C2:						
Alvin	Very limited		Very limited		Somewhat limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Seepage	0.52
131D2:						
Alvin	Very limited		Very limited		Somewhat limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Seepage	0.52
134C2:						
Camden	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too sandy	0.50
	Too sandy	0.50			Too clayey	0.50
					Seepage	0.22

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
136A:						
Brooklyn------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
138A:						
Shiloh--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Hard to compact	1.00
					Too clayey	0.50
152A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
198A:						
Elburn--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
199A:						
Plano---------------	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
199B:						
Plano---------------	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
206A:						
Thorp---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
212C2:						
Thebes--------------	Very limited		Not limited		Very limited	
	Seepage (bottom layer)	1.00			Seepage	1.00
					Too sandy	0.50
	Too sandy	0.50			Too clayey	0.50
243A:						
St. Charles---------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
243B:						
St. Charles----------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
244A:						
Hartsburg-----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
257A:						
Clarksdale----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Hard to compact	1.00
					Too clayey	0.50
270A:						
Stronghurst---------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
279B:						
Rozetta-------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
279B3:						
Rozetta-------------	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
279C2:						
Rozetta-------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
279C3:						
Rozetta-------------	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
280C2:						
Fayette-------------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
379A:						
Dakota--------------	Very limited		Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
567C2:						
Elkhart-------------	Not limited		Not limited		Not limited	

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
630C2:						
Navlys	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
630D3:						
Navlys	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96		
675B:						
Greenbush	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
683A:						
Lawndale	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
684A:						
Broadwell	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
684B:						
Broadwell	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
684C2:						
Broadwell	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
685B:						
Middletown	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
685C2:						
Middletown	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
685C3:						
Middletown	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
685D2:						
Middletown----------	Very limited		Somewhat limited		Somewhat limited	
	Seepage (bottom layer)	1.00	Slope	0.96	Slope	0.96
	Slope	0.96			Too clayey	0.50
	Too clayey	0.50				
685D3:						
Middletown----------	Very limited		Somewhat limited		Somewhat limited	
	Seepage (bottom layer)	1.00	Slope	0.96	Slope	0.96
	Slope	0.96			Too clayey	0.50
	Too clayey	0.50				
705A:						
Buckhart------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
705B:						
Buckhart------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
802E:						
Orthents------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
827B:						
Broadwell-----------	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
Onarga--------------	Very limited		Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
827C2:						
Broadwell-----------	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
Onarga--------------	Very limited		Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
828B:						
Broadwell-----------	Very limited		Not limited		Somewhat limited	
	Seepage (bottom layer)	1.00			Too clayey	0.50
	Too clayey	0.50				
Sparta--------------	Very limited		Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
828D2:						
Broadwell	Very limited		Somewhat limited		Somewhat limited	
	Seepage (bottom layer)	1.00	Slope	0.37	Too clayey	0.50
	Too clayey	0.50			Slope	0.37
	Slope	0.37				
Sparta	Very limited		Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00	Slope	0.37	Seepage	1.00
	Slope	0.37			Slope	0.37
835G:						
Earthen dam	Not rated		Not rated		Not rated	
861B2:						
Princeton	Very limited		Very limited		Somewhat limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Seepage	0.52
	Too sandy	0.50			Too sandy	0.50
Bloomfield	Very limited		Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	0.50			Too sandy	0.50
861D2:						
Princeton	Very limited		Very limited		Somewhat limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Seepage	0.52
	Too sandy	0.50	Slope	0.37	Too sandy	0.50
	Slope	0.37			Slope	0.37
Bloomfield	Very limited		Very limited		Very limited	
	Seepage (bottom layer)	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	0.50	Slope	0.37	Too sandy	0.50
	Slope	0.37			Slope	0.37
861F:						
Princeton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage (bottom layer)	1.00	Seepage	1.00	Seepage	0.52
	Too sandy	0.50			Too sandy	0.50
Bloomfield	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage (bottom layer)	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	0.50			Too sandy	0.50
864:						
Pits, quarry	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
871D:						
Lenzburg------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
871G:						
Lenzburg------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
898D2:						
Hickory-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
Sylvan--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
898D3:						
Hickory-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
Sylvan--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
898F2:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
898F3:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
898G:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
Sylvan--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
962C2:						
Sylvan--------------	Not limited		Not limited		Not limited	
Bold----------------	Not limited		Not limited		Not limited	
962C3:						
Sylvan--------------	Not limited		Not limited		Not limited	
Bold----------------	Not limited		Not limited		Not limited	

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
962D2:						
Sylvan	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
Bold	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
962D3:						
Sylvan	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
Bold	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
962E2:						
Sylvan	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Bold	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
962F2:						
Sylvan	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Bold	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
962G:						
Sylvan	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Bold	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
965C2:						
Tallula	Not limited		Not limited		Not limited	
Bold	Not limited		Not limited		Not limited	
965D2:						
Tallula	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
Bold	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
3070A:						
Beaucoup	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
3070S:						
Beaucoup	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage (bottom layer)	1.00				
	Too clayey	0.50				
3073A:						
Ross	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
	Seepage (bottom layer)	1.00				
3074A:						
Radford	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
3078A:						
Arenzville	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
3107L:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
3107S:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage (bottom layer)	1.00				
	Too clayey	0.50				
3284A:						
Tice	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3284S:						
Tice	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage (bottom layer)	1.00				
	Too clayey	0.50				
3405A:						
Zook	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
3451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
7037A:						
Worthen	Somewhat limited		Somewhat limited		Not limited	
	Flooding	0.40	Flooding	0.40		
7037B:						
Worthen	Somewhat limited		Somewhat limited		Not limited	
	Flooding	0.40	Flooding	0.40		
7081A:						
Littleton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40		
7148A:						
Proctor	Very limited		Somewhat limited		Not limited	
	Seepage (bottom layer)	1.00	Flooding	0.40		
	Flooding	0.40				
8070A:						
Beaucoup	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
8284A:						
Tice	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8405A:						
Zook----------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
8452A:						
Riley---------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Too sandy	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
	Seepage (bottom layer)	1.00	Seepage	1.00	Depth to saturated zone	1.00
	Too sandy	1.00				

Table 17a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
8D:		
Hickory	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8D2:		
Hickory	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8F:		
Hickory	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
17A:		
Keomah	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
30G:		
Hamburg	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
34B2:		
Tallula	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
43A:		
Ipava	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
45A:		
Denny	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
53B:		
Bloomfield	Fair	
	Bottom layer	0.11
	Thickest layer	0.26

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
53D:		
Bloomfield	Fair	
	Bottom layer	0.13
	Thickest layer	0.26
67A:		
Harpster	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
68A:		
Sable	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
86B:		
Osco	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
86C2:		
Osco	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
119D:		
Elco	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
119D2:		
Elco	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
119D3:		
Elco	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
131C2:		
Alvin	Fair	
	Thickest layer	0.03
	Bottom layer	0.11
131D2:		
Alvin	Fair	
	Thickest layer	0.00
	Bottom layer	0.06
134C2:		
Camden	Fair	
	Thickest layer	0.00
	Bottom layer	0.08
136A:		
Brooklyn	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
138A:		
Shiloh	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
152A:		
Drummer	Fair	
	Thickest layer	0.00
	Bottom layer	0.01
198A:		
Elburn	Fair	
	Thickest layer	0.00
	Bottom layer	0.05
199A:		
Plano	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
199B:		
Plano	Poor	
	Thickest layer	0.00
	Bottom layer	0.00
206A:		
Thorp	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
212C2:		
Thebes	Fair	
	Thickest layer	0.00
	Bottom layer	0.07
243A:		
St. Charles	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
243B:		
St. Charles	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
244A:		
Hartsburg	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
257A:		
Clarksdale	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
270A:		
Stronghurst	Fair	
	Thickest layer	0.00
	Bottom layer	0.09

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
279B:		
Rozetta	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
279B3:		
Rozetta	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
279C2:		
Rozetta	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
279C3:		
Rozetta	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
280C2:		
Fayette	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
379A:		
Dakota	Fair	
	Thickest layer	0.00
	Bottom layer	0.90
567C2:		
Elkhart	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
630C2:		
Navlys	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
630D3:		
Navlys	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
675B:		
Greenbush	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
683A:		
Lawndale	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
684A:		
Broadwell	Fair	
	Thickest layer	0.00
	Bottom layer	0.09

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
684B:		
Broadwell	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
684C2:		
Broadwell	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
685B:		
Middletown	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
685C2:		
Middletown	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
685C3:		
Middletown	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
685D2:		
Middletown	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
685D3:		
Middletown	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
705A:		
Buckhart	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
705B:		
Buckhart	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
802E:		
Orthents	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
827B:		
Broadwell	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
Onarga	Fair	
	Thickest layer	0.00
	Bottom layer	0.08

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
827C2:		
Broadwell-----------	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
Onarga--------------	Fair	
	Thickest layer	0.00
	Bottom layer	0.08
828B:		
Broadwell-----------	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
Sparta--------------	Fair	
	Thickest layer	0.12
	Bottom layer	0.31
828D2:		
Broadwell-----------	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
Sparta--------------	Fair	
	Thickest layer	0.10
	Bottom layer	0.31
835G:		
Earthen dam---------	Not rated	
861B2:		
Princeton-----------	Fair	
	Thickest layer	0.01
	Bottom layer	0.11
Bloomfield----------	Fair	
	Bottom layer	0.12
	Thickest layer	0.26
861D2:		
Princeton-----------	Fair	
	Thickest layer	0.02
	Bottom layer	0.11
Bloomfield----------	Fair	
	Bottom layer	0.12
	Thickest layer	0.26
861F:		
Princeton-----------	Fair	
	Thickest layer	0.01
	Bottom layer	0.11
Bloomfield----------	Fair	
	Bottom layer	0.12
	Thickest layer	0.26
864:		
Pits, quarry--------	Not rated	

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
871B:		
Lenzburg------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
871D:		
Lenzburg------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
871G:		
Lenzburg------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
898D2:		
Hickory-------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Sylvan--------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
898D3:		
Hickory-------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Sylvan--------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
898F2:		
Hickory-------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Sylvan--------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
898F3:		
Hickory-------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Sylvan--------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
898G:		
Hickory-------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Sylvan--------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
962C2:		
Sylvan	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Bold	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
962C3:		
Sylvan	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Bold	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
962D2:		
Sylvan	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Bold	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
962D3:		
Sylvan	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Bold	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
962E2:		
Sylvan	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Bold	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
962F2:		
Sylvan	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Bold	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
962G:		
Sylvan	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Bold	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
965C2:		
Tallula	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Bold	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
965D2:		
Tallula	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Bold	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3070A:		
Beaucoup	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3070S:		
Beaucoup	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
3073A:		
Ross	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3074A:		
Radford	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3078A:		
Arenzville	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3107A:		
Sawmill	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3107L:		
Sawmill	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3107S:		
Sawmill	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
3284A:		
Tice	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand: Rating class	Value
3284S:		
Tice	Fair	
	Thickest layer	0.00
	Bottom layer	0.09
3405A:		
Zook	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3451A:		
Lawson	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
7037A:		
Worthen	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
7037B:		
Worthen	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
7081A:		
Littleton	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
7148A:		
Proctor	Fair	
	Thickest layer	0.00
	Bottom layer	0.05
8070A:		
Beaucoup	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8284A:		
Tice	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8405A:		
Zook	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8452A:		
Riley	Fair	
	Thickest layer	0.00
	Bottom layer	0.26

Table 17b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:				
Hickory	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.98	Too clayey	0.57
			Rock fragments	0.97
8D2:				
Hickory	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.97	Too clayey	0.57
			Rock fragments	0.97
8F:				
Hickory	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Too clayey	0.58
	Shrink-swell	0.98		
17A:				
Keomah	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.04
	Depth to saturated zone	0.04	Too clayey	0.05
	Shrink-swell	0.89		
30G:				
Hamburg	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Carbonate content	0.88
34B2:				
Tallula	Fair		Good	
	Low strength	0.78		
43A:				
Ipava	Poor		Fair	
	Low strength	0.00	Too clayey	0.14
	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Shrink-swell	0.83		
45A:				
Denny	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.01
	Shrink-swell	0.74		
53B:				
Bloomfield	Good		Poor	
			Too sandy	0.00

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
53D:				
Bloomfield----------	Good		Poor	
			Too sandy	0.00
			Slope	0.63
67A:				
Harpster------------	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.72
	Shrink-swell	0.99		
68A:				
Sable---------------	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.98
	Shrink-swell	0.94		
86B:				
Osco----------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
	Shrink-swell	0.87		
86C2:				
Osco----------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
	Shrink-swell	0.87		
119D:				
Elco----------------	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.38	Too clayey	0.57
	Depth to saturated zone	0.98	Depth to saturated zone	0.98
119D2:				
Elco----------------	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.38	Too clayey	0.57
	Depth to saturated zone	0.98	Depth to saturated zone	0.98
119D3:				
Elco----------------	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.34	Too clayey	0.57
	Depth to saturated zone	0.98	Depth to saturated zone	0.98
131C2:				
Alvin---------------	Good		Good	
131D2:				
Alvin---------------	Good		Fair	
			Slope	0.04
134C2:				
Camden--------------	Good		Fair	
			Too clayey	0.49

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
136A:				
Brooklyn------------	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.00
	Shrink-swell	0.82		
138A:				
Shiloh--------------	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.18
	Shrink-swell	0.12		
152A:				
Drummer-------------	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.86
	Shrink-swell	0.99		
198A:				
Elburn--------------	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.14
	Depth to saturated zone	0.14	Too clayey	0.81
	Shrink-swell	0.99		
199A:				
Plano---------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.67
	Shrink-swell	0.98		
199B:				
Plano---------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.67
	Shrink-swell	0.99		
206A:				
Thorp---------------	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.99		
212C2:				
Thebes--------------	Good		Fair	
			Too clayey	0.57
243A:				
St. Charles---------	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.95		
243B:				
St. Charles---------	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.95		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
244A:				
Hartsburg-----------	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.82
257A:				
Clarksdale----------	Poor		Fair	
	Low strength	0.00	Too clayey	0.01
	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Shrink-swell	0.50		
270A:				
Stronghurst---------	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.04
	Depth to saturated zone	0.04	Too clayey	0.70
	Shrink-swell	0.93		
279B:				
Rozetta-------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.92		
279B3:				
Rozetta-------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.60
279C2:				
Rozetta-------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.60
	Shrink-swell	0.90		
279C3:				
Rozetta-------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.60
280C2:				
Fayette-------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.87		
379A:				
Dakota--------------	Good		Good	
567C2:				
Elkhart-------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
630C2:				
Navlys--------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
630D3:				
Navlys--------------	Poor		Fair	
	Low strength	0.00	Slope	0.04
			Too clayey	0.57

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value
675B:				
Greenbush-----------	Poor		Fair	
	Low strength	0.00	Too clayey	0.70
	Shrink-swell	0.91		
683A:				
Lawndale------------	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.14
	Depth to saturated zone	0.14	Too clayey	0.64
684A:				
Broadwell-----------	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
	Shrink-swell	0.98		
684B:				
Broadwell-----------	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
	Shrink-swell	0.98		
684C2:				
Broadwell-----------	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
	Shrink-swell	0.97		
685B:				
Middletown----------	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.99		
685C2:				
Middletown----------	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.97		
685C3:				
Middletown----------	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.97		
685D2:				
Middletown----------	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.97	Too clayey	0.57
685D3:				
Middletown----------	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.97	Too clayey	0.57
705A:				
Buckhart------------	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.98
	Shrink-swell	0.87		
	Depth to saturated zone	0.98		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
705B:				
Buckhart	Poor		Fair	
	Low strength	0.00	Too clayey	0.67
	Shrink-swell	0.87	Depth to saturated zone	0.98
	Depth to saturated zone	0.98		
802E:				
Orthents	Poor		Poor	
	Low strength	0.00	Slope	0.00
	Slope	0.32		
	Shrink-swell	0.87		
827B:				
Broadwell	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
	Shrink-swell	0.98		
Onarga	Good		Good	
827C2:				
Broadwell	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
	Shrink-swell	0.97		
Onarga	Good		Good	
828B:				
Broadwell	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
	Shrink-swell	0.98		
Sparta	Good		Poor	
			Too sandy	0.00
828D2:				
Broadwell	Poor		Fair	
	Low strength	0.00	Slope	0.63
	Shrink-swell	0.98	Too clayey	0.64
Sparta	Good		Poor	
			Too sandy	0.00
			Slope	0.63
835G:				
Earthen dam	Not rated		Not rated	
861B2:				
Princeton	Good		Good	
Bloomfield	Good		Poor	
			Too sandy	0.00
861D2:				
Princeton	Good		Fair	
			Slope	0.63
Bloomfield	Good		Poor	
			Too sandy	0.00
			Slope	0.63

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
861F:				
Princeton	Poor		Poor	
	Slope	0.00	Slope	0.00
Bloomfield	Poor		Poor	
	Slope	0.00	Slope	0.00
			Too sandy	0.00
864:				
Pits, quarry	Not rated		Not rated	
871B:				
Lenzburg	Poor		Fair	
	Low strength	0.00	Rock fragments	0.72
	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.88
871D:				
Lenzburg	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.87	Rock fragments	0.72
			Hard to reclaim (rock fragments)	0.88
871G:				
Lenzburg	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Rock fragments	0.72
	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.88
898D2:				
Hickory	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.97	Too clayey	0.57
			Rock fragments	0.97
Sylvan	Poor		Fair	
	Low strength	0.00	Slope	0.04
			Too clayey	0.64
898D3:				
Hickory	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.97	Too clayey	0.58
			Rock fragments	0.97
Sylvan	Poor		Fair	
	Low strength	0.00	Slope	0.04
			Too clayey	0.57
898F2:				
Hickory	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.97	Rock fragments	0.88
Sylvan	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Too clayey	0.57

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
898F3:				
Hickory	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.96	Rock fragments	0.88
Sylvan	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Too clayey	0.57
898G:				
Hickory	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Too clayey	0.57
			Rock fragments	0.88
Sylvan	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Too clayey	0.60
962C2:				
Sylvan	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
Bold	Poor		Fair	
	Low strength	0.00	Carbonate content	0.32
962C3:				
Sylvan	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
Bold	Poor		Fair	
	Low strength	0.00	Carbonate content	0.32
962D2:				
Sylvan	Poor		Fair	
	Low strength	0.00	Slope	0.04
			Too clayey	0.64
Bold	Poor		Fair	
	Low strength	0.00	Slope	0.04
			Carbonate content	0.32
962D3:				
Sylvan	Poor		Fair	
	Low strength	0.00	Slope	0.04
			Too clayey	0.57
Bold	Poor		Fair	
	Low strength	0.00	Slope	0.04
			Carbonate content	0.32
962E2:				
Sylvan	Poor		Poor	
	Low strength	0.00	Slope	0.00
	Slope	0.18	Too clayey	0.57
Bold	Poor		Poor	
	Low strength	0.00	Slope	0.00
	Slope	0.18	Carbonate content	0.32

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
962F2:				
Sylvan	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Too clayey	0.64
Bold	Poor		Poor	
	Low strength	0.00	Slope	0.00
	Slope	0.00	Carbonate content	0.32
962G:				
Sylvan	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Too clayey	0.64
Bold	Poor		Poor	
	Slope	0.00	Slope	0.00
	Low strength	0.00	Carbonate content	0.32
965C2:				
Tallula	Fair		Good	
	Low strength	0.78		
Bold	Poor		Fair	
	Low strength	0.00	Carbonate content	0.32
965D2:				
Tallula	Fair		Fair	
	Low strength	0.78	Slope	0.04
Bold	Poor		Fair	
	Low strength	0.00	Slope	0.04
			Carbonate content	0.32
3070A:				
Beaucoup	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.86
	Shrink-swell	0.87		
3070S:				
Beaucoup	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.86
	Shrink-swell	0.87		
3073A:				
Ross	Good		Good	
3074A:				
Radford	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.14
	Depth to saturated zone	0.14		
3078A:				
Arenzville	Poor		Good	
	Low strength	0.00		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
3107A:				
Sawmill	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.98
	Shrink-swell	0.87		
3107L:				
Sawmill	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.98
	Shrink-swell	0.87		
3107S:				
Sawmill	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.98
	Shrink-swell	0.89		
3284A:				
Tice	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.14
	Depth to saturated zone	0.14	Too clayey	0.64
	Shrink-swell	0.87		
3284S:				
Tice	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.14
	Depth to saturated zone	0.14	Too clayey	0.64
	Shrink-swell	0.94		
3405A:				
Zook	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.00
	Shrink-swell	0.16		
3451A:				
Lawson	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.14
	Depth to saturated zone	0.14		
7037A:				
Worthen	Poor		Good	
	Low strength	0.00		
7037B:				
Worthen	Poor		Good	
	Low strength	0.00		
7081A:				
Littleton	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.14
	Depth to saturated zone	0.14		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value
7148A:				
Proctor-------------	Good		Fair	
			Too clayey	0.67
8070A:				
Beaucoup------------	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.76
	Shrink-swell	0.87		
8284A:				
Tice----------------	Poor		Fair	
	Low strength	0.00	Depth to saturated zone	0.14
	Depth to saturated zone	0.14	Too clayey	0.64
	Shrink-swell	0.87		
8405A:				
Zook----------------	Poor		Poor	
	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low strength	0.00	Too clayey	0.00
	Shrink-swell	0.16		
8452A:				
Riley---------------	Fair		Fair	
	Depth to saturated zone	0.12	Depth to saturated zone	0.12
			Too clayey	0.81

Table 18a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.15	No ground water	1.00
	Slope	0.02				
8D2:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.12	No ground water	1.00
	Slope	0.02				
8F:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.82	No ground water	1.00
	Slope	0.34				
17A:						
Keomah--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.30		
30G:						
Hamburg-------------	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Piping	1.00	No ground water	1.00
	Seepage	0.72				
34B2:						
Tallula-------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
43A:						
Ipava---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.08		
45A:						
Denny---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.17		
53B:						
Bloomfield----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.26	No ground water	1.00
53D:						
Bloomfield----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.26	No ground water	1.00
	Slope	0.01				

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
67A:						
Harpster------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Ponding	1.00	Cutbanks cave	0.10
			Piping	0.22		
68A:						
Sable---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
86B:						
Osco----------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	No ground water	1.00
86C2:						
Osco----------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	No ground water	1.00
119D:						
Elco----------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	No ground water	1.00
	Slope	0.02	Piping	0.03		
119D2:						
Elco----------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	No ground water	1.00
	Slope	0.02	Piping	0.02		
119D3:						
Elco----------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	No ground water	1.00
	Slope	0.02				
131C2:						
Alvin---------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.11	No ground water	1.00
131D2:						
Alvin---------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.06	No ground water	1.00
	Slope	0.02				
134C2:						
Camden--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	No ground water	1.00
			Seepage	0.08		
136A:						
Brooklyn------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
138A:						
Shiloh----------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
152A:						
Drummer---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.43		
			Seepage	0.01		
198A:						
Elburn----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.51		
			Seepage	0.05		
199A:						
Plano-----------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.69	No ground water	1.00
			Seepage	0.01		
199B:						
Plano-----------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.94	No ground water	1.00
			Seepage	0.01		
206A:						
Thorp-----------------	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Piping	0.36		
212C2:						
Thebes----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	No ground water	1.00
			Seepage	0.07		
243A:						
St. Charles-----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.63	No ground water	1.00
243B:						
St. Charles-----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.63	No ground water	1.00
244A:						
Hartsburg-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.39		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
257A:						
Clarksdale----------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
270A:						
Stronghurst---------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Seepage	0.09		
			Piping	0.01		
279B:						
Rozetta-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	No ground water	1.00
279B3:						
Rozetta-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.10	No ground water	1.00
279C2:						
Rozetta-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	No ground water	1.00
					Slow refill	0.28
279C3:						
Rozetta-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.10	No ground water	1.00
280C2:						
Fayette-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	No ground water	1.00
379A:						
Dakota--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.90	No ground water	1.00
567C2:						
Elkhart-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.08	No ground water	1.00
630C2:						
Navlys--------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.22	No ground water	1.00
630D3:						
Navlys--------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.02	No ground water	1.00
	Slope	0.02				
675B:						
Greenbush-----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.17	No ground water	1.00
					Slow refill	0.28
683A:						
Lawndale------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.62		
			Seepage	0.09		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
684A:						
Broadwell-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.97	No ground water	1.00
			Seepage	0.09		
684B:						
Broadwell-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.97	No ground water	1.00
			Seepage	0.09		
684C2:						
Broadwell-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.43	No ground water	1.00
			Seepage	0.09		
685B:						
Middletown----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.81	No ground water	1.00
			Seepage	0.09		
685C2:						
Middletown----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.11	No ground water	1.00
			Seepage	0.09		
685C3:						
Middletown----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.09	No ground water	1.00
			Piping	0.06		
685D2:						
Middletown----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.11	No ground water	1.00
	Slope	0.02	Seepage	0.09		
685D3:						
Middletown----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.09	No ground water	1.00
	Slope	0.02	Piping	0.06		
705A:						
Buckhart------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Slow refill	0.28
					Depth to water	0.14
			Piping	0.07	Cutbanks cave	0.10
705B:						
Buckhart------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Slow refill	0.28
					Depth to water	0.14
			Piping	0.06	Cutbanks cave	0.10
802E:						
Orthents------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.15	Piping	0.50	No ground water	1.00
	Seepage	0.04				

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
827B:						
Broadwell-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.97	No ground water	1.00
			Seepage	0.09		
Onarga--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.08	No ground water	1.00
827C2:						
Broadwell-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.43	No ground water	1.00
			Seepage	0.09		
Onarga--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.08	No ground water	1.00
828B:						
Broadwell-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.97	No ground water	1.00
			Seepage	0.09		
Sparta--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	No ground water	1.00
828D2:						
Broadwell-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.97	No ground water	1.00
	Slope	0.01	Seepage	0.09		
Sparta--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	No ground water	1.00
	Slope	0.01				
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
861B2:						
Princeton-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.11	No ground water	1.00
Bloomfield----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.26	No ground water	1.00
861D2:						
Princeton-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.11	No ground water	1.00
	Slope	0.01				
Bloomfield----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.26	No ground water	1.00
	Slope	0.01				
861F:						
Princeton-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.11	No ground water	1.00
	Slope	0.28				
Bloomfield----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.26	No ground water	1.00
	Slope	0.28				

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
864:						
Pits, quarry	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.15	No ground water	1.00
871D:						
Lenzburg	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.11	No ground water	1.00
	Slope	0.02				
871G:						
Lenzburg	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.88	Piping	0.11	No ground water	1.00
	Seepage	0.04				
898D2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	No ground water	1.00
	Slope	0.02				
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.79	No ground water	1.00
	Slope	0.02				
898D3:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.09	No ground water	1.00
	Slope	0.02				
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.02	No ground water	1.00
	Slope	0.02				
898F2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.05	No ground water	1.00
	Slope	0.34				
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.17	No ground water	1.00
	Slope	0.34				
898F3:						
Hickory	Somewhat limited		Somewhat limited	0.04	Very limited	
	Seepage	0.72	Piping		No ground water	1.00
	Slope	0.34				
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	No ground water	1.00
	Slope	0.34				
898G:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.99	Piping	0.30	No ground water	1.00
	Seepage	0.72				
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.99	Piping	0.11	No ground water	1.00
	Seepage	0.72				

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
962C2:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.77	No ground water	1.00
Bold	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
962C3:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	No ground water	1.00
Bold	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
962D2:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.77	No ground water	1.00
	Slope	0.02				
Bold	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
	Slope	0.02				
962D3:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.02	No ground water	1.00
	Slope	0.02				
Bold	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
	Slope	0.02				
962E2:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.17	No ground water	1.00
	Slope	0.18				
Bold	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
	Slope	0.18				
962F2:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.88	No ground water	1.00
	Slope	0.36				
Bold	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
	Slope	0.36				
962G:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.99	Piping	0.88	No ground water	1.00
	Seepage	0.72				
Bold	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Piping	1.00	No ground water	1.00
	Seepage	0.72				

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
965C2:						
Tallula-------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
Bold----------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
965D2:						
Tallula-------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
	Slope	0.02				
Bold----------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	No ground water	1.00
	Slope	0.02				
3070A:						
Beaucoup------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.24		
3070S:						
Beaucoup------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Piping	0.46		
			Seepage	0.09		
3073A:						
Ross----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	No ground water	1.00
3074A:						
Radford-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.34		
3078A:						
Arenzville----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Piping	0.65	Depth to water	0.99
					Slow refill	0.28
					Cutbanks cave	0.10
3107A:						
Sawmill-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.02		
3107L:						
Sawmill-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.04		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
3107S:						
Sawmill	Very limited		Very limited		Very limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Piping	0.44		
			Seepage	0.09		
3284A:						
Tice	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.02		
3284S:						
Tice	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.33		
			Seepage	0.09		
3405A:						
Zook	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.02	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	0.12		
3451A:						
Lawson	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.75		
7037A:						
Worthen	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.95	No ground water	1.00
7037B:						
Worthen	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.95	No ground water	1.00
7081A:						
Littleton	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.88		
7148A:						
Proctor	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.57	No ground water	1.00
			Seepage	0.05		
8070A:						
Beaucoup	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.06		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8284A:						
Tice	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
8405A:						
Zook	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.02	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	0.12		
8452A:						
Riley	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Seepage	0.26		

Table 18b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8D:						
Hickory	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
8D2:						
Hickory	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Water erosion	0.89		
8F:						
Hickory	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
17A:						
Keomah	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
30G:						
Hamburg	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
34B2:						
Tallula	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
43A:						
Ipava	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
45A:						
Denny	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponded	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
53B:						
Bloomfield	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.36	Too sandy	1.00		
			Slope	0.36		
53D:						
Bloomfield	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
67A:						
Harpster	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
68A:						
Sable	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponded	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
86B:						
Osco	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
86C2:						
Osco	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
119D:						
Elco	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	0.99
			Slope	1.00	Slope	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
119D2:						
Elco	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	0.99
			Slope	1.00	Slope	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
119D3:						
Elco	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	0.99
			Slope	1.00	Slope	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
131C2:						
Alvin	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.99	Slope	0.99		
			Water erosion	0.17		
131D2:						
Alvin	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Water erosion	0.17		
134C2:						
Camden	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
136A:						
Brooklyn	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponded	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
					Too clayey	0.01
138A:						
Shiloh	Not limited		Very limited		Very limited	
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.17	Cutbanks cave	0.10
152A:						
Drummer	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
198A:						
Elburn	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	1.00
199A:						
Plano	Not limited		Very limited		Drainage not needed	
			Water erosion	1.00		
199B:						
Plano	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
206A:						
Thorp	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponded	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
212C2:						
Thebes	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
243A:						
St. Charles	Not limited		Very limited		Drainage not needed	
			Water erosion	1.00		
243B:						
St. Charles	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
244A:						
Hartsburg	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponded	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
257A:						
Clarksdale	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
270A:						
Stronghurst	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	1.00
279B:						
Rozetta	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
279B3:						
Rozetta	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
279C2:						
Rozetta	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
279C3:						
Rozetta	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
280C2:						
Fayette	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
379A:						
Dakota	Not limited		Very limited		Drainage not needed	
			Too sandy	1.00		
			Water erosion	0.89		
567C2:						
Elkhart	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
630C2:						
Navlys	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
630D3:						
Navlys	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
675B:						
Greenbush	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
683A:						
Lawndale	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	1.00
684A:						
Broadwell	Not limited		Very limited		Drainage not needed	
			Water erosion	1.00		
684B:						
Broadwell	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
684C2:						
Broadwell	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
685B:						
Middletown	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
685C2:						
Middletown	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
685C3:						
Middletown	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
685D2:						
Middletown	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
685D3:						
Middletown	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
705A:						
Buckhart	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
705B:						
Buckhart-----------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.25		
802E:						
Orthents-----------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
827B:						
Broadwell----------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
Onarga-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Too sandy	1.00		
			Slope	0.25		
			Water erosion	0.17		
827C2:						
Broadwell----------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
Onarga-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Too sandy	1.00		
			Slope	0.99		
			Water erosion	0.17		
828B:						
Broadwell----------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.36	Water erosion	1.00		
			Slope	0.36		
Sparta-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.36	Too sandy	1.00		
			Slope	0.36		
828D2:						
Broadwell----------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
Sparta-------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Too sandy	1.00		
			Slope	1.00		
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
861B2:						
Princeton----------	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.36	Water erosion	0.89		
			Slope	0.36		
Bloomfield---------	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.36	Slope	0.36		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
861D2:						
Princeton	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Water erosion	0.89		
Bloomfield	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
861F:						
Princeton	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Water erosion	0.89		
Bloomfield	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
864:						
Pits, quarry	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.36	Water erosion	1.00		
	Content of large stones	0.10	Slope	0.36		
			Content of large stones	0.10		
871D:						
Lenzburg	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
	Content of large stones	0.10	Slope	1.00		
			Content of large stones	0.10		
871G:						
Lenzburg	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
	Content of large stones	0.10	Slope	1.00		
			Content of large stones	0.10		
898D2:						
Hickory	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Water erosion	0.89		
Sylvan	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
898D3:						
Hickory	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Water erosion	0.56		
Sylvan	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
898F2:						
Hickory-------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Water erosion	0.89		
Sylvan--------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
898F3:						
Hickory-------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Water erosion	0.56		
Sylvan--------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
898G:						
Hickory-------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Water erosion	0.89		
Sylvan--------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
962C2:						
Sylvan--------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
Bold----------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
962C3:						
Sylvan--------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
Bold----------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
962D2:						
Sylvan--------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
Bold----------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
962D3:						
Sylvan--------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
962D3:						
Bold----------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
962E2:						
Sylvan--------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
Bold----------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
962F2:						
Sylvan--------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
Bold----------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
962G:						
Sylvan--------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
Bold----------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
965C2:						
Tallula-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
Bold----------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
965D2:						
Tallula-------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
Bold----------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
3070A:						
Beaucoup------------	Not limited		Very limited		Very limited	
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Flooding	1.00
			Water erosion	0.89	Depth to saturated zone	1.00
					Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3070S:						
Beaucoup------------	Not limited		Very limited		Very limited	
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Flooding	1.00
			Water erosion	0.89	Depth to saturated zone	1.00
					Cutbanks cave	1.00
3073A:						
Ross----------------	Not limited		Somewhat limited		Drainage not needed	
			Water erosion	0.89		
3074A:						
Radford-------------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Flooding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3078A:						
Arenzville----------	Not limited		Very limited		Drainage not needed	
			Water erosion	1.00		
3107A:						
Sawmill-------------	Not limited		Very limited		Very limited	
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Flooding	1.00
					Depth to	1.00
			Water erosion	0.56	saturated zone	1.00
					Cutbanks cave	0.10
3107L:						
Sawmill-------------	Not limited		Very limited		Very limited	
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Flooding	1.00
					Depth to	1.00
			Water erosion	0.56	saturated zone	1.00
					Cutbanks cave	0.10
3107S:						
Sawmill-------------	Not limited		Very limited		Very limited	
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Flooding	1.00
					Depth to	1.00
			Water erosion	0.56	saturated zone	1.00
					Cutbanks cave	1.00
3284A:						
Tice----------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Flooding	1.00
			Water erosion	0.89	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3284S:						
Tice----------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Flooding	1.00
			Water erosion	0.89	Depth to saturated zone	1.00
					Cutbanks cave	1.00

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3405A:						
Zook	Not limited		Very limited		Very limited	
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Flooding	1.00
			Water erosion	0.56	Depth to saturated zone	1.00
					Cutbanks cave	0.10
					Too clayey	0.01
3451A:						
Lawson	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Flooding	1.00
			Water erosion	0.89	Depth to saturated zone	1.00
					Cutbanks cave	0.10
7037A:						
Worthen	Not limited		Somewhat limited		Drainage not needed	
			Water erosion	0.89		
7037B:						
Worthen	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.25	Water erosion	0.89		
			Slope	0.25		
7081A:						
Littleton	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
7148A:						
Proctor	Not limited		Very limited		Drainage not needed	
			Water erosion	1.00		
8070A:						
Beaucoup	Not limited		Very limited		Very limited	
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.89	Flooding	0.60
					Cutbanks cave	0.10
8284A:						
Tice	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.89	Flooding	0.60
					Cutbanks cave	0.10
8405A:						
Zook	Not limited		Very limited		Very limited	
			Ponded	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.56	Flooding	0.60
					Cutbanks cave	0.10
					Too clayey	0.01

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8452A:						
Riley---------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Too sandy	1.00	Cutbanks cave	1.00
			Water erosion	0.89	Flooding	0.60

Table 18c.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Sprinkler irrigation	
	Rating class and limiting features	Value
8D:		
Hickory	Somewhat limited	
	Slope	0.98
8D2:		
Hickory	Somewhat limited	
	Slope	0.98
8F:		
Hickory	Very limited	
	Slope	1.00
17A:		
Keomah	Very limited	
	Depth to saturated zone	1.00
30G:		
Hamburg	Very limited	
	Slope	1.00
	Water erosion	1.00
34B2:		
Tallula	Not limited	
43A:		
Ipava	Very limited	
	Depth to saturated zone	1.00
45A:		
Denny	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
53B:		
Bloomfield	Very limited	
	Wind erosion	1.00
	Limited available water capacity	1.00
53D:		
Bloomfield	Very limited	
	Wind erosion	1.00
	Limited available water capacity	1.00
	Slope	0.60

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
67A:		
Harpster	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
68A:		
Sable	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
86B:		
Osco	Not limited	
86C2:		
Osco	Very limited	
	Water erosion	1.00
	Slope	0.06
119D:		
Elco	Very limited	
	Water erosion	1.00
	Slope	0.98
119D2:		
Elco	Very limited	
	Water erosion	1.00
	Slope	0.98
119D3:		
Elco	Very limited	
	Water erosion	1.00
	Slope	0.98
131C2:		
Alvin	Somewhat limited	
	Slope	0.06
131D2:		
Alvin	Somewhat limited	
	Slope	0.98
	Limited available water capacity	0.40
134C2:		
Camden	Very limited	
	Water erosion	1.00
	Slope	0.06
136A:		
Brooklyn	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
138A:		
Shiloh	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
152A:		
Drummer	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
198A:		
Elburn	Very limited	
	Depth to saturated zone	1.00
199A:		
Plano	Not limited	
199B:		
Plano	Not limited	
206A:		
Thorp	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
212C2:		
Thebes	Very limited	
	Water erosion	1.00
	Slope	0.06
243A:		
St. Charles	Not limited	
243B:		
St. Charles	Very limited	
	Water erosion	1.00
244A:		
Hartsburg	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
257A:		
Clarksdale	Very limited	
	Depth to saturated zone	1.00
270A:		
Stronghurst	Very limited	
	Depth to saturated zone	1.00
279B:		
Rozetta	Very limited	
	Water erosion	1.00
279B3:		
Rozetta	Very limited	
	Water erosion	1.00

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	
	Rating class and limiting features	Value
279C2:		
Rozetta	Very limited	
	Water erosion	1.00
	Slope	0.06
279C3:		
Rozetta	Very limited	
	Water erosion	1.00
	Slope	0.06
280C2:		
Fayette	Very limited	
	Water erosion	1.00
	Slope	0.06
379A:		
Dakota	Not limited	
567C2:		
Elkhart	Very limited	
	Water erosion	1.00
	Slope	0.06
630C2:		
Navlys	Very limited	
	Water erosion	1.00
	Slope	0.06
630D3:		
Navlys	Very limited	
	Water erosion	1.00
	Slope	0.98
675B:		
Greenbush	Very limited	
	Water erosion	1.00
683A:		
Lawndale	Very limited	
	Depth to saturated zone	1.00
684A:		
Broadwell	Not limited	
684B:		
Broadwell	Not limited	
684C2:		
Broadwell	Very limited	
	Water erosion	1.00
	Slope	0.06
685B:		
Middletown	Very limited	
	Water erosion	1.00
685C2:		
Middletown	Very limited	
	Water erosion	1.00
	Slope	0.06

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
685C3:		
Middletown	Very limited	
	Water erosion	1.00
	Slope	0.06
685D2:		
Middletown	Very limited	
	Water erosion	1.00
	Slope	0.98
685D3:		
Middletown	Very limited	
	Water erosion	1.00
	Slope	0.98
705A:		
Buckhart	Not limited	
705B:		
Buckhart	Not limited	
802E:		
Orthents	Very limited	
	Water erosion	1.00
	Slope	1.00
827B:		
Broadwell	Not limited	
Onarga	Somewhat limited	
	Limited available water capacity	0.08
827C2:		
Broadwell	Very limited	
	Water erosion	1.00
	Slope	0.06
Onarga	Somewhat limited	
	Limited available water capacity	0.13
	Slope	0.06
828B:		
Broadwell	Not limited	
Sparta	Very limited	
	Wind erosion	1.00
	Limited available water capacity	1.00
828D2:		
Broadwell	Very limited	
	Water erosion	1.00
	Slope	0.60
Sparta	Very limited	
	Wind erosion	1.00
	Limited available water capacity	1.00
	Slope	0.60

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
835G:		
Earthen dam	Not rated	
861B2:		
Princeton	Very limited	
	Wind erosion	1.00
Bloomfield	Very limited	
	Wind erosion	1.00
	Limited available water capacity	1.00
861D2:		
Princeton	Very limited	
	Wind erosion	1.00
	Slope	0.60
Bloomfield	Very limited	
	Wind erosion	1.00
	Limited available water capacity	1.00
	Slope	0.60
861F:		
Princeton	Very limited	
	Wind erosion	1.00
	Slope	1.00
Bloomfield	Very limited	
	Wind erosion	1.00
	Slope	1.00
	Limited available water capacity	1.00
864:		
Pits, quarry	Not rated	
871B:		
Lenzburg	Not limited	
871D:		
Lenzburg	Somewhat limited	
	Slope	0.98
871G:		
Lenzburg	Very limited	
	Slope	1.00
898D2:		
Hickory	Somewhat limited	
	Slope	0.98
Sylvan	Very limited	
	Water erosion	1.00
	Slope	0.98
898D3:		
Hickory	Somewhat limited	
	Slope	0.98

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
898D3:		
Sylvan	Very limited	
	Water erosion	1.00
	Slope	0.98
898F2:		
Hickory	Very limited	
	Slope	1.00
Sylvan	Very limited	
	Slope	1.00
	Water erosion	1.00
898F3:		
Hickory	Very limited	
	Slope	1.00
Sylvan	Very limited	
	Slope	1.00
	Water erosion	1.00
898G:		
Hickory	Very limited	
	Slope	1.00
Sylvan	Very limited	
	Slope	1.00
	Water erosion	1.00
962C2:		
Sylvan	Very limited	
	Water erosion	1.00
	Slope	0.06
Bold	Very limited	
	Water erosion	1.00
	Slope	0.06
962C3:		
Sylvan	Very limited	
	Water erosion	1.00
	Slope	0.06
Bold	Very limited	
	Water erosion	1.00
	Slope	0.06
962D2:		
Sylvan	Very limited	
	Water erosion	1.00
	Slope	0.98
Bold	Very limited	
	Water erosion	1.00
	Slope	0.98
962D3:		
Sylvan	Very limited	
	Water erosion	1.00
	Slope	0.98

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
962D3:		
Bold	Very limited	
	Water erosion	1.00
	Slope	0.98
962E2:		
Sylvan	Very limited	
	Slope	1.00
	Water erosion	1.00
Bold	Very limited	
	Slope	1.00
	Water erosion	1.00
962F2:		
Sylvan	Very limited	
	Slope	1.00
	Water erosion	1.00
Bold	Very limited	
	Slope	1.00
	Water erosion	1.00
962G:		
Sylvan	Very limited	
	Slope	1.00
	Water erosion	1.00
Bold	Very limited	
	Slope	1.00
	Water erosion	1.00
965C2:		
Tallula	Somewhat limited	
	Slope	0.06
Bold	Very limited	
	Water erosion	1.00
	Slope	0.06
965D2:		
Tallula	Somewhat limited	
	Slope	0.98
Bold	Very limited	
	Water erosion	1.00
	Slope	0.98
3070A:		
Beaucoup	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Flooding	1.00

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	
	Rating class and limiting features	Value
3070S:		
Beaucoup	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Flooding	1.00
3073A:		
Ross	Very limited	
	Flooding	1.00
3074A:		
Radford	Very limited	
	Depth to saturated zone	1.00
	Flooding	1.00
3078A:		
Arenzville	Very limited	
	Flooding	1.00
3107A:		
Sawmill	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Flooding	1.00
3107L:		
Sawmill	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Flooding	1.00
3107S:		
Sawmill	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Flooding	1.00
3284A:		
Tice	Very limited	
	Depth to saturated zone	1.00
	Flooding	1.00
3284S:		
Tice	Very limited	
	Depth to saturated zone	1.00
	Flooding	1.00
3405A:		
Zook	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Flooding	1.00

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Sprinkler irrigation: Value
3451A:		
Lawson	Very limited	
	Depth to saturated zone	1.00
	Flooding	1.00
7037A:		
Worthen	Not limited	
7037B:		
Worthen	Not limited	
7081A:		
Littleton	Very limited	
	Depth to saturated zone	1.00
7148A:		
Proctor	Not limited	
8070A:		
Beaucoup	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
8284A:		
Tice	Very limited	
	Depth to saturated zone	1.00
8405A:		
Zook	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
8452A:		
Riley	Very limited	
	Depth to saturated zone	1.00

Table 19.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8D:												
Hickory---------	0-4	Silt loam	CL	A-4, A-6	0	0-5	95-100	90-100	90-100	75-95	20-35	3-15
	4-12	Loam, clay loam	CL, ML, CL-ML	A-6, A-4	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	12-46	Clay loam, silty clay loam, gravelly clay loam, loam	CL	A-6, A-7, A-7-6	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	46-58	Loam, clay loam, gravelly clay loam	CL, CL-ML	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20
	58-63	Loam, sandy loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
8D2:												
Hickory---------	0-6	Loam	CL	A-4, A-6	0	0-5	95-100	90-100	90-100	75-95	20-35	8-15
	6-47	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	47-80	Sandy loam, loam, gravelly clay loam	CL, CL-ML	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20
8F:												
Hickory---------	0-4	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0-5	95-100	91-100	82-100	64-93	21-35	5-15
	4-12	Silt loam, loam	CL, ML	A-6, A-4	0	0-5	95-100	91-100	76-100	51-90	25-30	7-15
	12-46	Clay loam, loam, silty clay loam, gravelly clay loam	CL, ML, SC	A-6	0-1	0-5	85-100	70-100	60-100	40-90	31-40	11-18
	46-58	Loam, clay loam, gravelly clay loam	SC, CL, SC-SM, ML, CL-ML	A-6, A-4	0-1	0-5	85-100	70-100	53-100	36-84	25-40	6-16
	58-80	Loam, sandy loam, gravelly clay loam	CL, SC-SM, SC, CL-ML, ML	A-6, A-4	0-1	0-5	85-100	70-97	53-96	36-79	25-35	6-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
17A:												
Keomah----------	0-11	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-35	10-15
	11-18	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-35	10-20
	18-33	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	100	95-100	45-55	25-30
	33-51	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	100	95-100	35-45	15-25
	51-89	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	100	95-100	25-35	5-15
30G:												
Hamburg---------	0-7	Silt loam	CL-ML, ML	A-4	0	0	100	100	100	95-100	0-25	NP-5
	7-60	Silt loam, very fine sandy loam, silt	CL-ML, ML	A-4	0	0	100	100	100	95-100	0-25	NP-5
34B2:												
Tallula---------	0-12	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	100	95-100	20-45	NP-20
	12-31	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	90-100	20-40	NP-20
	31-60	Silt loam, silt	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	85-100	20-35	NP-15
43A:												
Ipava-----------	0-10	Silt loam	CL	A-4	0	0	100	100	97-100	95-100	24-37	4-14
	10-18	Silty clay loam	CL	A-7-6	0	0	100	100	97-100	95-100	40-46	15-20
	18-31	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	97-100	95-100	45-57	22-32
	31-50	Silty clay loam	CL	A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	50-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	96-100	93-100	24-37	7-18
45A:												
Denny-----------	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	30-40	8-15
	9-22	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	22-45	Silty clay loam, silty clay	CH, CL	A-6, A-7	0	0	100	100	95-100	95-100	35-60	15-35
	45-70	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	95-100	25-40	11-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
53B:												
Bloomfield------	0-6	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-90	4-20	0-29	NP
	6-38	Fine sand, loamy fine sand, sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	70-100	4-35	0-24	NP
	38-60	Fine sand, loamy fine sand, sand, fine sandy loam	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	65-100	4-35	16-27	NP-3
53D:												
Bloomfield------	0-8	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-90	4-20	0-29	NP
	8-34	Fine sand, loamy fine sand, sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	70-100	4-35	0-24	NP
	34-60	Fine sand, loamy fine sand, sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	65-100	4-35	16-27	NP-3
67A:												
Harpster--------	0-18	Silty clay loam	ML, CL	A-7-6	0	0	100	97-100	95-100	85-100	40-46	15-19
	18-41	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	41-56	Silt loam	CL	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-18
	56-60	Loam, silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	70-90	50-70	22-33	4-14
68A:												
Sable-----------	0-17	Silty clay loam	CH, CL, MH, ML	A-7	0	0	100	100	95-100	95-100	30-55	10-25
	17-23	Silty clay loam	CH, CL, MH, ML	A-7	0	0	100	100	95-100	95-100	41-65	15-35
	23-51	Silty clay loam, silt loam	CH, CL	A-7	0	0	100	100	95-100	95-100	40-55	20-35
	51-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	7-18
86B:												
Osco------------	0-14	Silt loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	7-20
	14-55	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	40-50	15-25
	55-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	7-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
86C2:												
Osco------------	0-9	Silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	95-100	35-45	10-20
	9-34	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	40-50	15-25
	34-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	95-100	95-100	35-45	7-25
119D:												
Elco------------	0-4	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	4-12	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	12-26	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	25-45	10-30
	26-80	Silty clay loam, loam, clay	CL	A-6, A-7	0	0	100	90-100	80-100	60-95	25-50	10-30
119D2:												
Elco------------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	6-28	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	25-45	10-30
	28-60	Silty clay loam, loam, clay	CL	A-6, A-7	0	0	100	90-100	80-100	60-95	25-50	10-30
119D3:												
Elco------------	0-5	Silty clay loam	CL	A-6, A-7	0	0	100	100	100	95-100	30-45	15-30
	5-26	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	25-45	10-30
	26-60	Clay loam, silty clay loam, loam, clay	CL	A-6, A-7	0	0	100	90-100	80-100	60-95	25-50	10-30
131C2:												
Alvin-----------	0-7	Fine sandy loam	ML, SM	A-2, A-4	0	0	100	100	80-95	30-60	0-25	NP-4
	7-42	Fine sandy loam, sandy loam, loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0	100	95-100	70-100	30-55	15-40	NP-15
	42-80	Very fine sand, fine sandy loam, loamy fine sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	95-100	95-100	45-95	4-35	15-20	NP-4

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
131D2:												
Alvin-----------	0-7	Fine sandy loam	SC-SM, CL, ML, SM, CL-ML	A-4	0	0	100	100	76-96	35-59	15-25	3-8
	7-14	Fine sandy loam, sandy loam	SC-SM, CL, ML, SM, CL-ML	A-4	0	0	100	100	76-96	35-59	15-25	NP-8
	14-47	Fine sandy loam, sandy loam, loam	SC, CL	A-4, A-6	0	0	100	95-100	70-96	35-64	20-30	7-11
	47-60	Loamy fine sand, fine sandy loam, fine sand	SM, ML	A-2-4, A-4	0	0	92-100	92-100	73-96	18-55	11-17	NP-4
134C2:												
Camden----------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-15
	7-34	Silt loam, silty clay loam	CL	A-6	0	0	100	97-100	95-100	95-100	35-46	14-24
	34-43	Loam, clay loam	CL, ML, SC	A-4, A-6	0	0	90-100	90-100	70-85	45-70	25-33	8-14
	43-80	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4, A-4, A-1-b	0	0	90-100	80-100	35-60	15-40	19-25	1-7
136A:												
Brooklyn--------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	7-17	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	17-44	Silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	95-100	45-60	25-40
	44-60	Stratified loam to silt loam to clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	100	100	60-90	30-70	15-38	5-20
138A:												
Shiloh----------	0-27	Silty clay loam, silty clay	CL	A-7	0	0	100	100	95-100	90-100	40-50	15-25
	27-52	Silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	90-100	40-65	15-40
	52-80	Silty clay loam, silty clay, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-50	15-30

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
152A:												
Drummer---------	0-14	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	40-46	15-19
	14-41	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	16-24
	41-47	Loam	CL, SC	A-6, A-4	0	0	95-100	90-100	70-90	45-80	25-33	8-14
	47-60	Stratified loam to sandy loam	SC, CL, CL-ML, SC-SM	A-4, A-2-4	0	0	95-100	80-100	55-95	30-65	22-28	4-10
198A:												
Elburn----------	0-16	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	4-14
	16-49	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	49-58	Stratified sandy loam to silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	55-75	20-30	5-15
	58-62	Stratified sandy loam to loamy sand	SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	50-85	20-45	19-25	1-7
199A:												
Plano-----------	0-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	14-49	Silty clay loam, silt loam	CL, ML	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	49-60	Loam, clay loam, sandy loam	CL, ML, SC, SM	A-4, A-6	0	0-1	90-100	85-95	60-90	40-65	30-45	10-25
	60-72	Stratified loamy sand to silt loam	SC, SM, CL, ML, SC-SM, CL-ML	A-2-4, A-4	0	0-5	90-100	70-95	40-80	15-55	20-25	NP-10
199B:												
Plano-----------	0-15	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	27-35	7-15
	15-45	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	29-40	11-20
	45-55	Clay loam, loam, sandy loam	CL	A-4, A-6	0	0	85-100	80-97	55-95	50-85	25-35	7-15
	55-72	Stratified loamy sand to clay loam	SC-SM, SC, CL-ML, CL	A-2-4, A-4	0	0-3	85-100	80-95	45-90	30-60	22-28	4-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
206A:												
Thorp-----------	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	90-100	30-49	7-18
	14-19	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	90-100	28-37	7-17
	19-43	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	90-100	32-46	15-25
	43-50	Sandy clay loam, clay loam, silt loam	CL, SC	A-4, A-6, A-7	0	0	90-100	90-100	80-100	40-90	29-42	10-21
	50-65	Stratified sandy loam to silty clay loam	CL-ML, ML, SC-SM, SM, SC	A-2, A-4	0	0	85-100	85-100	65-90	20-85	16-27	2-21
212C2:												
Thebes----------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	5-15
	9-31	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
	31-40	Loam, sandy loam, clay loam	CL, ML, SC, SM, CL-ML	A-4, A-6	0	0	100	100	90-100	40-70	15-30	NP-13
	40-80	Fine sand, loamy fine sand, loamy sand, sandy loam	SM, SP, SP-SM	A-2, A-3, A-2-4	0	0	100	90-100	75-95	4-35	0-20	NP-4
243A:												
St. Charles-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	8-50	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	50-60	Clay loam, silt loam, sandy loam, loam	CL, SC	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20
243B:												
St. Charles-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	8-50	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	50-60	Clay loam, silt loam, sandy loam, loam	CL, SC	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
244A:												
Hartsburg-------	0-17	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-46	15-19
	17-34	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	34-60	Silt loam	CL	A-6, A-4	0	0	95-100	90-100	90-100	85-100	24-37	7-18
257A:												
Clarksdale------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	8-16	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	8-18
	16-47	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	90-100	40-65	25-40
	47-67	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	25-45	10-25
	67-80	Silt loam	CL	A-6	0	0	95-100	95-100	95-100	90-100	25-40	10-20
270A:												
Stronghurst-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	9-12	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	20-35	8-18
	12-55	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	40-55	20-35
	55-68	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	95-100	25-40	5-20
	68-80	Loamy fine sand, fine sand, loamy sand	SC, SC-SM, SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10
279B:												
Rozetta---------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	24-35	8-15
	7-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	11-55	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-50	15-30
	55-60	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	7-20
279B3:												
Rozetta---------	0-6	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	95-100	35-45	10-20
	6-33	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-50	15-30
	33-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-40	7-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
279C2:												
Rozetta---------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	24-35	8-15
	8-56	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-50	15-30
	56-80	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	7-20
279C3:												
Rozetta---------	0-6	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	95-100	35-45	10-20
	6-33	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-50	15-30
	33-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-40	7-20
280C2:												
Fayette---------	0-8	Silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	30-45	10-25
	8-64	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
	64-80	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	10-20
379A:												
Dakota----------	0-14	Loam	CL	A-4, A-6	0	0	95-100	85-100	75-95	50-75	25-35	7-15
	14-31	Loam, clay loam, sandy loam	CL, SC	A-4, A-6	0	0	95-100	85-100	70-100	35-80	25-40	9-20
	31-36	Sandy loam, loamy sand, sand	SM, ML	A-1-b, A-2-4, A-4	0-1	0-5	100	78-100	42-95	13-55	0-21	NP-4
	36-60	Sand, loamy sand	SM, SP	A-1-b, A-2-4	0-1	0-5	100	78-100	42-92	2-23	9-12	NP
567C2:												
Elkhart---------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-35	8-15
	8-34	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-50	18-30
	34-60	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	20-37	8-20
630C2:												
Navlys----------	0-6	Silt loam	CL	A-6, A-4	0	0	100	100	100	95-100	25-35	5-15
	6-27	Silty clay loam, silt loam	CL	A-6, A-7, A-7-6	0	0	100	100	100	95-100	35-50	20-30
	27-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	5-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
630D3:												
Navlys----------	0-6	Silty clay loam	CL	A-6, A-7, A-7-6	0	0	100	100	100	95-100	35-50	20-30
	6-31	Silty clay loam, silt loam	CL	A-7, A-6, A-7-6	0	0	100	100	100	95-100	35-50	20-30
	31-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	5-20
675B:												
Greenbush-------	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	5-15
	14-60	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
	60-80	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	11-20
683A:												
Lawndale--------	0-18	Silt loam	CL	A-4, A-6, A-7	0	0	100	100	100	95-100	25-45	8-25
	18-44	Silty clay loam, silt loam	CH, CL, MH, ML	A-7, A-7-6	0	0	100	100	100	95-100	40-55	15-25
	44-60	Loamy fine sand, fine sand, sand	SC-SM, SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	75-95	4-35	0-20	NP-5
684A:												
Broadwell-------	0-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-45	5-20
	15-50	Silty clay loam, silt loam	CL	A-6, A-7, A-7-6	0	0	100	100	95-100	90-100	30-45	10-25
	50-55	Fine sandy loam, loam, clay loam, loamy fine sand	SC, SC-SM	A-4	0	0	100	95-100	80-90	35-50	20-30	5-10
	55-80	Loamy sand, fine sand, sand	SC-SM, SM, SP, SP-SM	A-2, A-3, A-2-4	0	0	100	100	75-95	4-35	0-20	NP-5

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
684B:												
Broadwell-------	0-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-45	5-20
	15-50	Silty clay loam, silt loam	CL	A-7, A-6, A-7-6	0	0	100	100	95-100	90-100	30-45	10-25
	50-55	Loamy fine sand, clay loam, fine sandy loam, loam	SC, SC-SM	A-4	0	0	100	95-100	80-90	35-50	20-30	5-10
	55-80	Loamy sand, fine sand, sand	SC-SM, SM, SP, SP-SM	A-2, A-2-4, A-3	0	0	100	100	75-95	4-35	0-20	NP-5
684C2:												
Broadwell-------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	5-15
	8-46	Silt loam, silty clay loam	CL	A-7-6, A-7	0	0	100	100	100	95-100	35-50	15-25
	46-49	Fine sandy loam, loam, loamy fine sand, clay loam	SC, SC-SM	A-4	0	0	100	95-100	80-90	35-50	20-30	5-10
	49-60	Loamy fine sand, loamy sand, fine sand	SC-SM, SM, SP-SM	A-2, A-3, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10
685B:												
Middletown------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	90-100	25-40	5-15
	9-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	90-100	25-40	5-15
	12-44	Silty clay loam, silt loam	CL	A-6, A-7, A-7-6	0	0	100	100	100	95-100	35-50	15-30
	44-47	Clay loam, loam, fine sandy loam, loamy fine sand	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	90-100	20-35	4-15
	47-79	Loamy fine sand, fine sand, loamy sand	SC, SC-SM, SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
685C2:												
Middletown------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	90-100	25-40	5-15
	7-46	Silty clay loam, silt loam	CL	A-6, A-7, A-7-6	0	0	100	100	100	95-100	35-50	15-30
	46-55	Clay loam, loam, fine sandy loam, loamy fine sand	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	90-100	20-35	4-15
	55-60	Loamy fine sand, fine sand, loamy sand	SC, SC-SM, SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10
685C3:												
Middletown------	0-7	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	100	95-100	35-45	10-20
	7-46	Silty clay loam, silt loam	CL	A-7-6, A-7	0	0	100	100	100	95-100	35-50	15-30
	46-55	Clay loam, loam, fine sandy loam, loamy fine sand	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	90-100	20-35	4-15
	55-60	Loamy fine sand, fine sand, loamy sand	SC, SC-SM, SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10
685D2:												
Middletown------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	90-100	25-40	5-15
	7-46	Silty clay loam, silt loam	CL	A-6, A-7, A-7-6	0	0	100	100	100	95-100	35-50	15-30
	46-55	Clay loam, loam, fine sandy loam, loamy fine sand	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	90-100	20-35	4-15
	55-60	Loamy fine sand, fine sand, loamy sand	SC, SC-SM, SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
685D3:												
Middletown------	0-7	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	100	95-100	35-45	10-20
	7-46	Silty clay loam, silt loam	CL	A-6, A-7, A-7-6	0	0	100	100	100	95-100	35-50	15-30
	46-55	Clay loam, loam, fine sandy loam, loamy fine sand	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	90-100	20-35	4-15
	55-60	Loamy fine sand, fine sand, loamy sand	SC, SC-SM, SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10
705A:												
Buckhart--------	0-20	Silt loam, silty clay loam	CL, ML	A-6, A-7	0	0	100	100	100	95-100	35-45	10-20
	20-58	Silty clay loam, silt loam	CL	A-7, A-7-6	0	0	100	100	100	95-100	40-50	15-25
	58-60	Silty clay loam, silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	11-20
705B:												
Buckhart--------	0-15	Silt loam	CL, ML	A-6, A-7	0	0	100	100	100	95-100	35-45	10-20
	15-67	Silty clay loam, silt loam	CL	A-7	0	0	100	100	100	95-100	40-50	15-25
	67-80	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	11-20
802E:												
Orthents--------	0-6	Loam	CL	A-6	0-1	0-5	95-100	90-100	85-95	60-90	20-40	10-20
	6-60	Loam, silt loam, clay loam	CL	A-6	0-1	0-5	95-100	90-100	85-95	60-90	20-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
827B:												
Broadwell-------	0-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-45	5-20
	15-50	Silty clay loam, silt loam	CL	A-6, A-7, A-7-6	0	0	100	100	95-100	90-100	30-45	10-25
	50-55	Fine sandy loam, loam, clay loam, loamy fine sand	SC, SC-SM	A-4	0	0	100	95-100	80-90	35-50	20-30	5-10
	55-80	Loamy sand, fine sand, sand, loamy fine sand	SC-SM, SM, SP, SP-SM	A-2, A-3, A-2-4	0	0	100	100	75-95	4-35	0-20	NP-5
Onarga----------	0-13	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4, A-6	0	0	100	100	75-95	25-50	15-28	2-12
	13-29	Loam, sandy loam, fine sandy loam	SC, SC-SM, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	98-100	95-100	75-95	30-60	19-32	5-14
	29-60	Stratified sand to sandy loam	SM, SC-SM, SP-SM	A-2-4, A-4	0	0	95-100	90-100	65-95	5-40	10-20	NP-6
827C2:												
Broadwell-------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	5-15
	8-46	Silt loam, silty clay loam	CL	A-6, A-7, A-7-6	0	0	100	100	100	95-100	35-50	15-25
	46-49	Fine sandy loam, loam, loamy fine sand, clay loam	SC, SC-SM	A-4	0	0	100	95-100	80-90	35-50	20-30	5-10
	49-60	Loamy fine sand, loamy sand, fine sand	SC-SM, SM, SP-SM	A-2, A-3, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10
Onarga----------	0-7	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4, A-6	0	0	100	100	75-95	25-50	15-28	2-12
	7-27	Loam, sandy loam, fine sandy loam	SC, SC-SM, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	98-100	95-100	75-95	30-60	19-32	5-14
	27-64	Stratified sand to sandy loam	SM, SC-SM, SP-SM	A-2-4, A-4	0	0	95-100	90-100	65-95	5-40	10-20	NP-6

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
828B:												
Broadwell-------	0-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-45	5-20
	15-50	Silty clay loam, silt loam	CL	A-6, A-7, A-7-6	0	0	100	100	95-100	90-100	30-45	10-25
	50-55	Fine sandy loam, loam, clay loam, loamy fine sand	SC, SC-SM	A-4	0	0	100	95-100	80-90	35-50	20-30	5-10
	55-80	Loamy fine sand, fine sand, sand, loamy sand	SC-SM, SM, SP, SP-SM	A-2, A-3, A-2-4	0	0	100	100	75-95	4-35	0-20	NP-5
Sparta----------	0-23	Loamy fine sand, loamy sand	SM	A-4, A-2, A-2-4	0	0	85-100	85-100	50-95	15-50	0-14	NP
	23-34	Loamy sand, fine sand, sand	SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	85-100	85-100	50-95	5-50	0-14	NP
	34-60	Sand, fine sand	SM, SP, SP-SM	A-2, A-3, A-2-4	0	0	85-100	85-100	50-95	2-30	0-14	NP
828D2:												
Broadwell-------	0-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-45	5-20
	15-50	Silty clay loam, silt loam	CL	A-6, A-7, A-7-6	0	0	100	100	95-100	90-100	30-45	10-25
	50-55	Fine sandy loam, loam, clay loam, loamy fine sand	SC, SC-SM	A-4	0	0	100	95-100	80-90	35-50	20-30	5-10
	55-80	Loamy fine sand, fine sand, sand, loamy sand	SC-SM, SM, SP, SP-SM	A-2, A-3, A-2-4	0	0	100	100	75-95	4-35	0-20	NP-5

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
828D2:												
Sparta----------	0-23	Loamy fine sand, loamy sand	SM	A-4, A-2, A-2-4	0	0	85-100	85-100	50-95	15-50	0-14	NP
	23-34	Loamy fine sand, fine sand, sand, loamy sand	SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	85-100	85-100	50-95	5-50	0-14	NP
	34-60	Sand, fine sand	SM, SP, SP-SM	A-2, A-3, A-2-4	0	0	85-100	85-100	50-95	2-30	0-14	NP
835G.												
Earthen dam												
861B2:												
Princeton-------	0-8	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-90	4-20	0-29	NP
	8-31	Sandy clay loam, fine sandy loam, loam	CL, SC	A-4, A-6	0	0	100	100	70-90	35-70	25-35	8-18
	31-80	Sand, loamy fine sand, fine sandy loam, loamy sand	SM, SC, SC-SM	A-2, A-4, A-6, A-2-4	0	0	100	100	60-90	5-50	15-25	3-15
Bloomfield------	0-6	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-90	4-20	0-29	NP
	6-25	Fine sand, loamy fine sand, sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	70-100	4-35	0-24	NP
	25-80	Fine sand, loamy fine sand, sand, fine sandy loam	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	65-100	4-35	16-27	NP-3

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
861D2:												
Princeton-------	0-8	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-90	4-20	0-29	NP
	8-31	Sandy clay loam, fine sandy loam, loam	CL, SC	A-4, A-6	0	0	100	100	70-90	35-70	25-35	8-18
	31-80	Sand, loamy fine sand, fine sandy loam, loamy sand	SM, SC, SC-SM	A-2, A-6, A-2-4, A-4	0	0	100	100	60-90	5-50	15-25	3-15
Bloomfield------	0-6	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-90	4-20	0-29	NP
	6-25	Fine sand, loamy fine sand, sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	70-100	4-35	0-24	NP
	25-80	Fine sand, loamy fine sand, sand, fine sandy loam	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	65-100	4-35	16-27	NP-3
861F:												
Princeton-------	0-8	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-90	4-20	0-29	NP
	8-31	Sandy clay loam, fine sandy loam, loam	CL, SC	A-4, A-6	0	0	100	100	70-90	35-70	25-35	8-18
	31-80	Sand, loamy fine sand, fine sandy loam, loamy sand	SM, SC, SC-SM	A-2, A-6, A-2-4, A-4	0	0	100	100	60-90	5-50	15-25	3-15
Bloomfield------	0-8	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-90	4-20	0-29	NP
	8-34	Fine sand, loamy fine sand, sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	70-100	4-35	0-24	NP
	34-60	Fine sand, loamy fine sand, sand, fine sandy loam	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	65-100	4-35	16-27	NP-3

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
864. Pits, quarry												
871B:												
Lenzburg--------	0-5	Silt loam	CL	A-4, A-6	0-1	2-10	80-100	75-100	65-95	55-85	25-40	8-20
	5-37	Silt loam, silty clay loam, clay loam	CL	A-6, A-7	0-2	2-10	80-95	75-90	70-90	55-85	25-45	10-25
	37-80	Silty clay loam, silt loam, gravelly loam, gravelly silty clay loam	CL	A-6, A-7	0-2	5-15	75-95	70-90	65-85	60-85	25-45	10-25
871D:												
Lenzburg--------	0-5	Silty clay loam	CL	A-6, A-7, A-7-6	0-1	2-10	80-100	75-100	65-95	55-85	35-50	15-25
	5-37	Silt loam, silty clay loam, clay loam	CL	A-6, A-7	0-2	2-10	80-95	75-90	70-90	55-85	25-45	10-25
	37-80	Silty clay loam, silt loam, gravelly loam, gravelly silty clay loam	CL	A-6, A-7	0-2	5-15	75-95	70-90	65-85	60-85	25-45	10-25
871G:												
Lenzburg--------	0-5	Silty clay loam	CL	A-6, A-7, A-7-6	0-1	2-10	80-100	75-100	65-95	55-85	35-50	15-25
	5-37	Silt loam, silty clay loam, clay loam	CL	A-6, A-7	0-2	2-10	80-95	75-90	70-90	55-85	25-45	10-25
	37-80	Silty clay loam, silt loam, gravelly loam, gravelly silty clay loam	CL	A-6, A-7	0-2	5-15	75-95	70-90	65-85	60-85	25-45	10-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
898D2:												
Hickory---------	0-6	Loam	CL	A-4, A-6	0	0-5	95-100	90-100	90-100	75-95	20-35	8-15
	6-47	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	47-60	Sandy loam, loam, gravelly clay loam	CL, CL-ML	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20
Sylvan----------	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	20-35	6-15
	5-30	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
	30-80	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-35	5-15
898D3:												
Hickory---------	0-8	Clay loam	CL	A-6, A-7	0	0-5	95-100	90-100	80-95	70-85	35-45	15-25
	8-46	Clay loam, loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	35-45	15-25
	46-58	Clay loam, loam, gravelly clay loam	CL, ML, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	25-40	10-20
	58-80	Loam, sandy loam, gravelly clay loam	CL, ML, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	25-40	10-20
Sylvan----------	0-8	Silty clay loam	CL	A-7-6, A-6, A-7	0	0	100	100	95-100	95-100	35-50	20-30
	8-31	Silty clay loam, silt loam	CL	A-7-6, A-7, A-6	0	0	100	100	95-100	95-100	35-50	20-30
	31-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	5-20
898F2:												
Hickory---------	0-12	Loam	CL	A-4, A-6	0	0-5	95-100	90-100	90-100	75-95	20-35	8-15
	12-48	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	48-60	Clay loam, loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A-2	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
898F2:												
Sylvan----------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	6-15
	6-28	Silty clay loam, silt loam	CL	A-7, A-6	0	0	100	100	95-100	95-100	35-50	20-30
	28-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	5-20
898F3:												
Hickory---------	0-12	Clay loam	CL	A-6, A-7	0	0-5	95-100	90-100	80-100	65-80	30-50	15-30
	12-48	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	48-60	Clay loam, loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A-2	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
Sylvan----------	0-6	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	35-50	20-30
	6-30	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	35-50	20-30
	30-60	Silt loam, silt	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	95-100	20-40	5-20
898G:												
Hickory---------	0-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	10-35	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	35-60	Clay loam, loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A-2	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
Sylvan----------	0-3	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	95-100	25-35	5-15
	3-7	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	95-100	30-40	7-15
	7-33	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	35-50	20-30
	33-60	Silt, silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	5-20
962C2:												
Sylvan----------	0-4	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	6-15
	4-30	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-50	15-25
	30-80	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-35	5-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
962C2:												
Bold------------	0-12	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	95-100	20-35	3-15
	12-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	95-100	20-35	3-15
962C3:												
Sylvan----------	0-6	Silty clay loam	CL	A-6, A-7, A-7-6	0	0	100	100	95-100	95-100	35-50	20-30
	6-30	Silty clay loam, silt loam	CL	A-7, A-6, A-7-6	0	0	100	100	95-100	95-100	35-50	20-30
	30-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	5-20
Bold------------	0-4	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
	4-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
962D2:												
Sylvan----------	0-4	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	6-15
	4-30	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-50	15-25
	30-80	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-35	5-15
Bold------------	0-12	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	95-100	20-35	3-15
	12-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	95-100	20-35	3-15
962D3:												
Sylvan----------	0-8	Silty clay loam	CL	A-6, A-7, A-7-6	0	0	100	100	95-100	95-100	35-50	20-30
	8-31	Silty clay loam, silt loam	CL	A-7, A-6, A-7-6	0	0	100	100	95-100	95-100	35-50	20-30
	31-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	5-20
Bold------------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
	8-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
962E2:												
Sylvan----------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	6-15
	6-28	Silty clay loam, silt loam	CL	A-7, A-6	0	0	100	100	95-100	95-100	35-50	20-30
	28-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	5-20
Bold------------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
	8-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
962F2:												
Sylvan----------	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	6-15
	10-27	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-50	15-25
	27-80	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-35	5-15
Bold------------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	95-100	20-35	3-15
	7-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	95-100	20-35	3-15
962G:												
Sylvan----------	0-10	Silt loam	CL-ML, CL	A-6, A-4	0	0	100	100	100	95-100	25-35	5-15
	10-27	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-50	15-25
	27-80	Silt loam, silt	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	95-100	20-35	5-15
Bold------------	0-7	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	100	95-100	20-35	3-15
	7-60	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	100	95-100	20-35	3-15
965C2:												
Tallula---------	0-12	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	100	95-100	20-45	NP-20
	12-31	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	90-100	20-40	NP-20
	31-60	Silt loam, silt	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	85-100	20-35	NP-15
Bold------------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	90-100	20-35	3-15
	8-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	90-100	20-35	3-15
965D2:												
Tallula---------	0-12	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	100	95-100	20-45	NP-20
	12-31	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	90-100	20-40	NP-20
	31-60	Silt loam, silt	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	85-100	20-35	NP-15
Bold------------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	90-100	20-35	3-15
	8-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	90-100	20-35	3-15
3070A:												
Beaucoup--------	0-16	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-45	15-20
	16-64	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-45	15-20
	64-80	Stratified silty clay loam to very fine sandy loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	90-100	65-95	20-41	5-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
3070S:												
Beaucoup--------	0-16	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-45	15-20
	16-64	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-45	15-20
	64-79	Loamy fine sand, fine sand, loamy sand, sand	SC, SC-SM, SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10
3073A:												
Ross------------	0-13	Silt loam, loam	CL-ML, ML, CL	A-4	0	0	90-100	90-100	80-100	65-95	20-35	NP-11
	13-43	Loam, silt loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	85-100	70-100	50-85	22-40	4-15
	43-60	Stratified sandy loam to silt loam	CL, ML, CL-ML, SC-SM, SC	A-2-4, A-4	0	0-5	85-100	75-100	70-100	15-70	10-30	NP-10
3074A:												
Radford---------	0-12	Silt loam	ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	30-40	5-15
	12-33	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	25-35	5-15
	33-80	Silt loam, silty clay loam, clay loam	CL	A-6, A-7	0	0	100	100	95-100	70-95	35-50	15-25
3078A:												
Arenzville------	0-6	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	95-100	75-100	20-30	4-10
	6-36	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	95-100	80-100	20-30	4-10
	36-80	Silt loam, silty clay loam	CL	A-6, A-7, A-7-6	0	0	100	100	95-100	70-95	35-50	15-25
3107A:												
Sawmill---------	0-10	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	10-32	Silty clay loam	CL	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	32-58	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	58-65	Silty clay loam, clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
3107L:												
Sawmill---------	0-32	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	32-58	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	58-65	Silty clay loam, clay loam, silt loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
3107S:												
Sawmill---------	0-10	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	10-32	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	32-58	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	58-79	Loamy fine sand, fine sand, loamy sand, sand	SC, SC-SM, SM, SP-SM	A-2, A-3, A-4, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10
3284A:												
Tice------------	0-14	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	30-45	10-25
	14-52	Silty clay loam, silt loam	CH, CL	A-7, A-7-6	0	0	100	100	95-100	85-95	40-55	15-30
	52-72	Stratified loam to silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	60-95	55-80	25-45	5-20
3284S:												
Tice------------	0-14	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	30-45	10-25
	14-52	Silty clay loam, silt loam	CH, CL	A-7, A-7-6	0	0	100	100	95-100	85-95	40-55	15-30
	52-79	Loamy fine sand, fine sand, loamy sand, sand	SC, SC-SM, SM, SP-SM	A-2, A-4, A-3, A-2-4	0	0	100	90-100	75-95	5-40	0-20	NP-10
3405A:												
Zook------------	0-8	Silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	100	95-100	90-100	45-60	20-30
	8-55	Silty clay, silty clay loam	MH, CH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	50-65	20-35
	55-60	Silty clay loam, silty clay, silt loam	CL	A-7-6, A-6	0	0	100	100	95-100	90-100	35-50	15-30
3451A:												
Lawson----------	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-35	5-15
	14-33	Silt loam, silty clay loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-100	20-40	5-20
	33-80	Silty clay loam, silt loam	CL	A-6, A-4	0	0	100	100	90-100	60-100	30-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
7037A:												
Worthen---------	0-30	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-30	5-15
	30-63	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-100	25-35	10-15
	63-80	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-100	25-35	10-15
7037B:												
Worthen---------	0-30	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-30	5-15
	30-63	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-100	25-35	10-15
	63-80	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-100	25-35	10-15
7081A:												
Littleton-------	0-10	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	30-35	10-15
	10-33	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	90-100	30-35	10-15
	33-80	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-100	30-35	10-15
7148A:												
Proctor---------	0-16	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	16-34	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	85-100	85-100	25-50	10-25
	34-53	Clay loam, loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6, A-7	0	0	90-100	85-100	75-100	30-80	20-45	5-25
	53-60	Stratified sandy loam to loamy sand	SC, SC-SM, SM	A-2, A-4	0	0	85-100	80-100	50-100	25-50	0-25	NP-10
8070A:												
Beaucoup--------	0-15	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	30-45	15-25
	15-48	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	30-45	15-30
	48-60	Stratified silt loam to silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	90-100	65-95	25-45	5-25
	60-80	Stratified silt loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-95	20-40	5-20
8284A:												
Tice------------	0-14	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	30-45	10-20
	14-80	Silty clay loam, silt loam	CH, CL	A-7	0	0	100	100	95-100	85-95	40-55	15-30

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8405A:												
Zook------------	0-8	Silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	100	95-100	90-100	45-60	20-30
	8-55	Silty clay, silty clay loam	MH, CH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	50-65	20-35
	55-60	Silty clay loam, silty clay, silt loam	CL, ML	A-7-6, A-6, A-7-5	0	0	100	100	95-100	90-100	35-50	15-30
8452A:												
Riley-----------	0-8	Loam	CL	A-6	0	0	100	100	85-100	60-75	27-38	8-18
	8-24	Clay loam, sandy clay loam, silty clay loam	CL, SC	A-6, A-7-6	0	0	100	100	85-100	45-85	33-47	16-26
	24-31	Loam, clay loam, sandy clay loam	CL, SC	A-6, A-7-6	0	0	100	100	85-100	45-85	33-47	15-25
	31-60	Sand, loamy sand, sandy loam	SC-SM, SM, SP-SM	A-2-4, A-4	0	0	100	100	50-80	6-36	0-17	NP-1

Table 20.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
8D:														
Hickory-------------	0-4	15-45	30-66	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	4-12	15-45	33-70	15-30	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.37	.37			
	12-46	15-45	20-58	20-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	46-58	30-45	23-55	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
	58-63	30-45	25-55	15-30	1.50-1.75	0.6-2	0.10-0.15	0.0-2.9	0.0-0.5	.28	.32			
8D2:														
Hickory-------------	0-6	15-45	30-66	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	6-47	15-45	20-58	27-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	47-80	30-45	23-55	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
8F:														
Hickory-------------	0-4	10-30	50-78	12-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	4-12	15-45	33-70	15-22	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
	12-46	15-45	30-50	24-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.1-0.5	.28	.32			
	46-58	25-49	28-50	15-32	1.50-1.70	0.2-2	0.11-0.19	0.0-2.9	0.1-0.5	.28	.32			
	58-80	30-55	25-50	15-30	1.50-1.75	0.2-0.6	0.10-0.15	0.0-2.9	0.1-0.5	.28	.32			
17A:														
Keomah--------------	0-11	0-7	67-84	16-26	1.35-1.45	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	11-18	0-7	67-84	16-26	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	0.1-1.0	.49	.49			
	18-33	0-7	51-65	35-42	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.1-0.5	.37	.37			
	33-51	0-7	58-73	27-35	1.35-1.45	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	51-89	0-7	66-85	15-27	1.40-1.60	0.2-2	0.19-0.22	0.0-2.9	0.0-0.2	.49	.49			
30G:														
Hamburg-------------	0-7	10-20	65-84	6-15	1.20-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	4L	86
	7-60	10-49	45-84	6-12	1.20-1.30	0.6-2	0.17-0.22	0.0-2.9	0.1-0.5	.55	.55			
34B2:														
Tallula-------------	0-12	1-10	75-85	10-20	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.32	.32	5	5	56
	12-31	1-10	75-85	12-18	1.10-1.30	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.55	.55			
	31-60	1-10	75-85	8-18	1.10-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.2	.55	.55			
43A:														
Ipava---------------	0-10	2-7	66-83	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	10-18	2-7	58-71	27-35	1.20-1.40	0.6-2	0.18-0.21	3.0-5.9	1.5-3.5	.24	.24			
	18-31	2-7	48-63	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	0.5-1.5	.37	.37			
	31-50	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	50-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
45A:														
Denny---------------	0-9	0-7	66-80	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	9-22	0-7	71-85	15-22	1.25-1.45	0.2-0.6	0.18-0.20	0.0-2.9	0.0-0.5	.43	.43			
	22-45	0-7	48-65	35-45	1.20-1.40	0.06-0.2	0.11-0.22	6.0-8.9	0.0-1.0	.37	.37			
	45-70	0-7	58-75	25-35	1.40-1.60	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
53B:														
Bloomfield----------	0-6	80-96	2-12	2-10	1.45-1.65	6-20	0.09-0.11	0.0-2.9	1.0-3.0	.02	.02	5	1	220
	6-38	75-95	3-15	2-10	1.45-1.65	6-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
	38-60	75-91	4-15	5-13	1.60-1.80	2-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
53D:														
Bloomfield----------	0-8	80-96	2-12	2-10	1.45-1.65	6-20	0.09-0.11	0.0-2.9	1.0-3.0	.02	.02	5	1	220
	8-34	75-95	3-15	2-10	1.45-1.65	6-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
	34-60	75-91	4-15	5-13	1.60-1.80	2-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
67A:														
Harpster------------	0-18	2-15	50-71	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-6.0	.24	.24	5	4L	86
	18-41	2-15	50-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.8-1.5	.37	.37			
	41-56	2-30	58-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.5-1.0	.49	.49			
	56-60	30-50	28-55	15-27	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	0.1-0.5	.37	.37			
68A:														
Sable---------------	0-17	0-7	58-73	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	5.0-6.0	.24	.24	5	6	48
	17-23	0-7	58-73	27-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	2.0-4.0	.24	.24			
	23-51	0-7	58-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	51-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			
86B:														
Osco----------------	0-14	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	14-55	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	55-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
86C2:														
Osco----------------	0-9	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	9-34	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	34-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
119D:														
Elco----------------	0-4	0-7	66-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	4-12	0-7	66-82	18-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	0.1-1.0	.49	.49			
	12-26	0-7	58-77	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	26-80	15-35	20-60	25-45	1.45-1.70	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.2	.28	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
119D2:														
Elco----------------	0-6	0-7	66-80	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	6-28	0-7	58-77	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-60	15-35	20-60	25-45	1.45-1.70	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.2	.28	.28			
119D3:														
Elco----------------	0-5	0-7	58-73	27-35	1.20-1.35	0.6-2	0.18-0.21	3.0-5.9	0.0-1.0	.37	.37	4	6	48
	5-26	0-7	58-77	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	26-60	15-35	20-60	25-45	1.45-1.70	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.2	.28	.28			
131C2:														
Alvin---------------	0-7	55-70	15-35	10-15	1.45-1.65	2-6	0.14-0.17	0.0-2.9	0.5-1.0	.20	.20	5	3	86
	7-42	45-70	12-40	15-18	1.40-1.65	2-6	0.14-0.18	0.0-2.9	0.0-0.5	.24	.24			
	42-80	65-95	2-32	3-10	1.45-1.65	2-6	0.10-0.15	0.0-2.9	0.0-0.3	.15	.15			
131D2:														
Alvin---------------	0-7	55-70	15-35	10-15	1.45-1.65	2-6	0.11-0.15	0.0-2.9	0.5-1.0	.20	.20	5	3	86
	7-14	55-70	15-35	10-15	1.45-1.65	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.24	.24			
	14-47	45-70	12-40	15-18	1.40-1.65	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.24	.24			
	47-60	65-95	2-32	3-10	1.45-1.65	2-20	0.04-0.08	0.0-2.9	0.0-0.3	.15	.15			
134C2:														
Camden--------------	0-7	2-7	66-83	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-2.5	.43	.43	5	6	48
	7-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	34-43	30-50	28-48	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	43-80	65-80	10-25	5-15	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.5	.28	.28			
136A:														
Brooklyn------------	0-7	1-7	66-79	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.37	.37	5	6	48
	7-17	1-7	71-79	14-22	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	0.0-1.0	.43	.43			
	17-44	1-7	48-64	35-45	1.35-1.55	0.06-0.2	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	44-60	5-70	20-75	10-30	1.40-1.70	0.2-0.6	0.11-0.19	0.0-2.9	0.0-0.5	.24	.28			
138A:														
Shiloh--------------	0-27	0-7	53-65	35-42	1.30-1.50	0.2-0.6	0.18-0.21	6.0-8.9	4.0-6.0	.24	.24	5	4	86
	27-52	0-7	48-65	35-45	1.35-1.55	0.2-0.6	0.09-0.18	6.0-8.9	0.5-2.0	.37	.37			
	52-80	0-7	48-75	25-45	1.30-1.50	0.2-0.6	0.18-0.20	6.0-8.9	0.2-0.5	.43	.43			
152A:														
Drummer-------------	0-14	3-15	50-70	27-35	1.20-1.40	0.6-2	0.19-0.23	3.0-5.9	4.5-7.0	.24	.24	5	6	48
	14-41	3-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.8-2.0	.37	.37			
	41-47	25-45	28-50	20-27	1.45-1.65	0.6-2	0.11-0.17	0.0-2.9	0.2-0.5	.32	.32			
	47-60	45-65	25-45	10-20	1.55-1.75	0.6-2	0.11-0.17	0.0-2.9	0.1-0.5	.28	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
198A:														
Elburn--------------	0-16	2-7	66-76	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	16-49	2-7	58-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	49-58	30-55	30-55	15-20	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	0.1-0.5	.37	.37			
	58-62	60-80	10-25	5-15	1.50-1.70	2-6	0.06-0.10	0.0-2.9	0.1-0.5	.24	.24			
199A:														
Plano---------------	0-14	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	14-49	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	49-60	15-70	0-70	15-32	1.30-1.55	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.32	.32			
	60-72	15-80	0-80	5-20	1.50-1.70	2-6	0.11-0.22	0.0-2.9	0.1-0.5	.28	.28			
199B:														
Plano---------------	0-15	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	15-45	0-10	55-80	20-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.37	.37			
	45-55	20-55	30-50	15-30	1.50-1.70	0.6-6	0.11-0.16	0.0-2.9	0.1-0.5	.32	.32			
	55-72	45-65	18-43	10-20	1.50-1.70	2-6	0.11-0.15	0.0-2.9	0.1-0.5	.28	.28			
206A:														
Thorp---------------	0-14	2-15	58-78	20-27	1.15-1.35	0.2-0.6	0.22-0.24	0.0-2.9	4.0-6.0	.28	.28	5	6	48
	14-19	3-15	60-79	18-25	1.30-1.50	0.2-0.6	0.20-0.22	0.0-2.9	0.5-1.0	.43	.43			
	19-43	3-15	50-75	22-35	1.35-1.55	0.06-0.2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	43-50	10-55	15-72	18-30	1.40-1.60	0.06-0.2	0.15-0.22	3.0-5.9	0.0-0.5	.32	.32			
	50-65	15-75	1-80	5-30	1.50-1.70	2-6	0.05-0.13	0.0-2.9	0.0-0.5	.28	.28			
212C2:														
Thebes--------------	0-9	5-20	55-80	15-25	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	9-31	0-15	50-75	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	31-40	30-60	0-35	15-27	1.35-1.55	0.6-2	0.12-0.19	0.0-2.9	0.0-0.5	.32	.32			
	40-80	70-90	0-27	3-10	1.45-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
243A:														
St. Charles---------	0-8	0-7	66-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-50	0-7	58-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	50-60	30-50	33-50	15-30	1.30-1.50	0.6-2	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			
243B:														
St. Charles---------	0-8	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-50	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	50-60	30-50	33-50	15-30	1.30-1.50	0.6-2	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			
244A:														
Hartsburg-----------	0-17	2-7	58-71	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	4.5-6.0	.24	.24	5	6	48
	17-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-2.0	.37	.37			
	34-60	3-15	66-82	15-27	1.45-1.65	0.6-2	0.19-0.26	0.0-2.9	0.1-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
257A:														
Clarksdale----------	0-8	0-7	66-80	20-27	1.30-1.50	0.6-2	0.22-0.25	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	8-16	0-7	66-85	15-27	1.25-1.50	0.2-0.6	0.20-0.22	0.0-2.9	0.0-1.0	.43	.43			
	16-47	0-7	48-65	35-45	1.30-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	47-67	0-7	63-80	20-30	1.40-1.60	0.6-2	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
	67-80	0-7	66-82	18-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
270A:														
Stronghurst---------	0-9	1-7	66-79	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-12	1-7	66-84	15-27	1.25-1.50	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.49	.49			
	12-55	1-7	58-77	22-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	55-68	1-7	66-79	20-27	1.35-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
	68-80	70-90	0-27	3-10	1.45-1.65	2-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
279B:														
Rozetta-------------	0-7	0-7	66-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-11	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.1-1.0	.49	.49			
	11-55	0-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.0-0.5	.37	.37			
	55-60	0-7	63-80	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
279B3:														
Rozetta-------------	0-6	0-7	58-72	27-35	1.30-1.45	0.6-2	0.18-0.22	3.0-5.9	0.2-1.0	.37	.37	4	6	48
	6-33	0-7	58-73	27-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.5	.37	.37			
	33-60	0-7	66-84	15-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
279C2:														
Rozetta-------------	0-8	0-7	66-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	8-56	0-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	56-80	0-7	63-80	20-30	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	0.2-0.5	.49	.49			
279C3:														
Rozetta-------------	0-6	0-7	58-72	27-35	1.30-1.45	0.6-2	0.18-0.22	3.0-5.9	0.2-1.0	.37	.37	4	6	48
	6-33	0-7	58-73	27-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.5	.37	.37			
	33-60	0-7	66-84	15-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
280C2:														
Fayette-------------	0-8	0-7	66-75	25-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	8-64	0-7	58-75	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	64-80	0-7	67-78	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
379A:														
Dakota--------------	0-14	30-50	23-50	14-27	1.40-1.50	0.6-2	0.20-0.22	0.0-2.9	2.0-5.0	.24	.24	4	6	48
	14-31	25-60	15-50	18-32	1.30-1.55	0.6-2	0.15-0.19	0.0-2.9	0.5-2.0	.32	.32			
	31-36	50-86	10-35	4-15	1.55-1.65	2-6	0.02-0.14	0.0-2.9	0.0-0.5	.24	.24			
	36-60	85-98	1-10	1-5	1.55-1.65	6-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.05			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
567C2:														
Elkhart-------------	0-8	0-7	66-80	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-34	0-7	58-75	25-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	34-60	0-7	66-80	18-27	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
630C2:														
Navlys--------------	0-6	0-7	66-80	20-27	1.20-1.40	0.6-2	0.20-0.22	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	6-27	0-7	58-75	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	27-60	0-7	66-82	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
630D3:														
Navlys--------------	0-6	0-7	61-73	27-32	1.25-1.45	0.6-2	0.20-0.22	3.0-5.9	0.5-1.0	.37	.37	4	6	48
	6-31	0-7	58-75	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	31-60	0-7	66-82	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
675B:														
Greenbush-----------	0-14	0-7	68-82	18-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	14-60	0-7	58-74	26-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	60-80	0-7	66-82	18-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
683A:														
Lawndale------------	0-18	5-20	55-75	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	18-44	0-10	55-75	25-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	44-60	50-90	0-47	3-10	1.50-1.85	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
684A:														
Broadwell-----------	0-15	5-20	55-75	20-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	15-50	0-10	55-76	24-35	1.35-1.60	0.6-2	0.14-0.24	3.0-5.9	0.0-1.0	.37	.37			
	50-55	40-80	0-35	10-28	1.30-1.35	2-6	0.11-0.17	0.0-2.9	0.0-0.5	.32	.32			
	55-80	50-90	0-47	3-10	1.55-1.75	6-20	0.08-0.11	0.0-2.9	0.0-0.5	.15	.15			
684B:														
Broadwell-----------	0-15	5-20	55-75	20-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	15-50	0-10	55-76	24-35	1.35-1.60	0.6-2	0.14-0.24	3.0-5.9	0.0-1.0	.37	.37			
	50-55	40-80	0-35	10-28	1.30-1.35	2-6	0.11-0.17	0.0-2.9	0.0-0.5	.32	.32			
	55-80	50-90	0-47	3-10	1.55-1.75	6-20	0.08-0.11	0.0-2.9	0.0-0.5	.15	.15			
684C2:														
Broadwell-----------	0-8	0-20	55-76	24-27	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-46	0-10	55-80	20-35	1.30-1.35	0.6-2	0.19-0.22	3.0-5.9	0.0-1.0	.37	.37			
	46-49	40-80	0-35	10-28	1.30-1.35	2-6	0.11-0.17	0.0-2.9	0.0-0.5	.32	.32			
	49-60	50-90	0-47	3-10	1.30-1.35	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
685B:														
Middletown----------	0-9	0-10	63-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-12	0-10	63-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.1-1.0	.49	.49			
	12-44	0-10	55-75	25-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	44-47	40-80	0-35	10-30	1.35-1.60	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	47-79	50-90	0-47	3-10	1.45-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
685C2:														
Middletown----------	0-7	0-10	63-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-46	0-10	55-75	25-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	46-55	40-80	0-35	10-35	1.35-1.60	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	55-60	50-90	0-47	3-10	1.45-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
685C3:														
Middletown----------	0-7	0-10	58-72	27-35	1.30-1.45	0.6-2	0.18-0.22	3.0-5.9	0.2-1.0	.37	.37	4	6	48
	7-46	0-10	55-75	25-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	46-55	40-80	0-35	10-35	1.35-1.60	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	55-60	50-90	0-47	3-10	1.45-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
685D2:														
Middletown----------	0-7	0-10	63-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-46	0-10	55-75	25-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	46-55	40-80	0-35	10-35	1.35-1.60	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	55-60	50-90	0-47	3-10	1.45-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
685D3:														
Middletown----------	0-7	0-10	58-72	27-35	1.30-1.45	0.6-2	0.18-0.22	3.0-5.9	0.2-1.0	.37	.37	4	6	48
	7-46	0-10	55-75	25-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	46-55	40-80	0-35	10-35	1.35-1.60	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	55-60	50-90	0-47	3-10	1.45-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
705A:														
Buckhart------------	0-20	0-7	63-80	20-30	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	20-58	0-7	58-75	25-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	58-60	0-7	66-82	18-27	1.35-1.45	0.6-2	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
705B:														
Buckhart------------	0-15	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	15-67	0-7	58-75	25-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	67-80	0-7	66-82	18-27	1.35-1.45	0.6-2	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
802E:														
Orthents------------	0-6	30-45	25-48	22-30	1.70-1.75	0.2-0.6	0.18-0.22	3.0-5.9	0.2-2.0	.43	.43	5	6	48
	6-60	30-45	25-50	20-30	1.70-1.80	0.2-0.6	0.16-0.20	3.0-5.9	0.2-1.0	.43	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
827B:														
Broadwell-----------	0-15	5-20	55-75	20-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	15-50	0-10	55-76	24-35	1.35-1.60	0.6-2	0.14-0.24	3.0-5.9	0.0-1.0	.37	.37			
	50-55	40-80	0-35	10-28	1.30-1.35	2-6	0.11-0.17	0.0-2.9	0.0-0.5	.32	.32			
	55-80	50-90	0-47	3-10	1.55-1.75	6-20	0.08-0.11	0.0-2.9	0.0-0.5	.15	.15			
Onarga--------------	0-13	50-75	10-42	8-15	1.30-1.65	0.6-6	0.14-0.18	0.0-2.9	1.0-3.0	.15	.15	4	3	86
	13-29	45-75	7-43	12-18	1.45-1.70	0.6-6	0.15-0.19	0.0-2.9	0.2-1.0	.24	.24			
	29-60	65-95	0-33	2-10	1.55-1.75	6-20	0.05-0.13	0.0-2.9	0.0-0.5	.15	.15			
827C2:														
Broadwell-----------	0-8	0-10	63-76	24-27	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-46	0-10	55-80	20-35	1.30-1.35	0.6-2	0.19-0.22	3.0-5.9	0.0-1.0	.37	.37			
	46-49	40-80	0-35	10-28	1.30-1.35	2-6	0.11-0.17	0.0-2.9	0.0-0.5	.32	.32			
	49-60	50-90	0-47	3-10	1.30-1.35	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
Onarga--------------	0-7	50-75	10-42	8-15	1.30-1.65	0.6-6	0.14-0.18	0.0-2.9	1.0-2.0	.17	.17	4	3	86
	7-27	45-75	7-43	12-18	1.45-1.70	0.6-6	0.15-0.19	0.0-2.9	0.2-1.0	.24	.24			
	27-64	65-95	0-33	2-10	1.55-1.75	6-20	0.05-0.13	0.0-2.9	0.0-0.5	.15	.15			
828B:														
Broadwell-----------	0-15	5-20	55-75	20-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	15-50	0-10	55-76	24-35	1.35-1.60	0.6-2	0.14-0.24	3.0-5.9	0.0-1.0	.37	.37			
	50-55	40-80	0-35	10-28	1.30-1.35	2-6	0.11-0.17	0.0-2.9	0.0-0.5	.32	.32			
	55-80	50-90	0-47	3-10	1.55-1.75	6-20	0.08-0.11	0.0-2.9	0.0-0.5	.15	.15			
Sparta--------------	0-23	75-95	0-22	0-10	1.20-1.40	2-6	0.09-0.12	0.0-2.9	1.0-2.0	.02	.02	5	2	134
	23-34	72-95	0-27	1-8	1.40-1.60	6-20	0.05-0.11	0.0-2.9	0.1-1.0	.15	.15			
	34-60	85-100	0-15	0-5	1.50-1.70	6-20	0.04-0.07	0.0-2.9	0.0-0.5	.15	.15			
828D2:														
Broadwell-----------	0-15	5-20	55-75	20-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	15-50	0-10	55-76	24-35	1.35-1.60	0.6-2	0.14-0.24	3.0-5.9	0.0-1.0	.37	.37			
	50-55	40-80	0-35	10-28	1.30-1.35	2-6	0.11-0.17	0.0-2.9	0.0-0.5	.32	.32			
	55-80	50-90	0-47	3-10	1.55-1.75	6-20	0.08-0.11	0.0-2.9	0.0-0.5	.15	.15			
Sparta--------------	0-23	75-95	0-22	0-10	1.20-1.40	2-6	0.09-0.12	0.0-2.9	0.5-2.0	.02	.02	5	2	134
	23-34	72-95	0-27	1-8	1.40-1.60	6-20	0.05-0.11	0.0-2.9	0.1-1.0	.15	.15			
	34-60	85-100	0-15	0-5	1.50-1.70	6-20	0.04-0.07	0.0-2.9	0.0-0.5	.15	.15			
835G.														
Earthen dam														

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
861B2:														
Princeton-----------	0-8	80-96	2-12	2-10	1.45-1.65	6-20	0.09-0.11	0.0-2.9	0.5-1.5	.10	.10	5	1	220
	8-31	40-75	5-35	18-25	1.45-1.60	0.6-2	0.16-0.19	0.0-2.9	0.0-1.0	.32	.32			
	31-80	70-87	5-22	8-18	1.40-1.65	2-6	0.10-0.17	0.0-2.9	0.0-0.5	.15	.15			
Bloomfield----------	0-6	80-96	2-12	2-10	1.45-1.65	6-20	0.09-0.11	0.0-2.9	0.5-1.5	.02	.02	5	1	220
	6-25	75-95	3-15	2-10	1.45-1.65	6-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
	25-80	75-91	4-15	5-13	1.60-1.80	2-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
861D2:														
Princeton-----------	0-8	80-96	2-12	2-10	1.45-1.65	6-20	0.09-0.11	0.0-2.9	0.5-1.5	.10	.10	5	1	220
	8-31	40-75	5-35	18-25	1.45-1.60	0.6-2	0.16-0.19	0.0-2.9	0.0-1.0	.32	.32			
	31-80	70-87	5-22	8-18	1.40-1.65	2-6	0.10-0.17	0.0-2.9	0.0-0.5	.15	.15			
Bloomfield----------	0-6	80-96	2-12	2-10	1.45-1.65	6-20	0.09-0.11	0.0-2.9	0.5-1.5	.02	.02	5	1	220
	6-25	75-95	3-15	2-10	1.45-1.65	6-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
	25-80	75-91	4-15	5-13	1.60-1.80	2-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
861F:														
Princeton-----------	0-8	80-96	2-12	2-10	1.45-1.65	6-20	0.09-0.11	0.0-2.9	0.5-2.0	.10	.10	5	1	220
	8-31	40-75	5-35	18-25	1.45-1.60	0.6-2	0.16-0.19	0.0-2.9	0.0-1.0	.32	.32			
	31-80	70-87	5-22	8-18	1.40-1.65	2-6	0.10-0.17	0.0-2.9	0.0-0.5	.15	.15			
Bloomfield----------	0-8	80-96	2-12	2-10	1.45-1.65	6-20	0.09-0.11	0.0-2.9	0.5-2.0	.02	.02	5	1	220
	8-34	75-95	3-15	2-10	1.45-1.65	6-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
	34-60	75-91	4-15	5-13	1.60-1.80	2-20	0.08-0.12	0.0-2.9	0.0-1.0	.15	.15			
864.														
Pits, quarry														
871B:														
Lenzburg------------	0-5	15-50	23-65	20-27	1.30-1.60	0.6-2	0.17-0.20	3.0-5.9	0.5-2.0	.32	.32	5	4L	86
	5-37	15-50	15-65	20-35	1.30-1.60	0.2-0.6	0.15-0.18	3.0-5.9	0.2-1.0	.37	.43			
	37-80	15-50	15-65	20-35	1.40-1.70	0.2-0.6	0.11-0.17	3.0-5.9	0.2-1.0	.32	.43			
871D:														
Lenzburg------------	0-5	15-50	15-65	20-35	1.30-1.60	0.6-2	0.17-0.22	3.0-5.9	0.5-1.0	.32	.32	5	4L	86
	5-37	15-50	15-65	20-35	1.30-1.60	0.2-0.6	0.15-0.18	3.0-5.9	0.2-1.0	.37	.43			
	37-80	15-45	20-65	20-35	1.40-1.70	0.2-0.6	0.11-0.20	3.0-5.9	0.2-1.0	.32	.43			
871G:														
Lenzburg------------	0-5	15-50	15-65	20-35	1.30-1.60	0.6-2	0.17-0.22	3.0-5.9	0.5-1.0	.32	.32	5	4L	86
	5-37	15-50	15-65	20-35	1.30-1.60	0.2-0.6	0.15-0.18	3.0-5.9	0.2-1.0	.37	.43			
	37-80	15-45	20-65	20-35	1.40-1.70	0.2-0.6	0.11-0.17	3.0-5.9	0.2-1.0	.32	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
898D2:														
Hickory-------------	0-6	15-45	30-66	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	6-47	15-45	20-58	27-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	47-60	30-45	23-55	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
Sylvan--------------	0-5	1-7	66-80	18-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	5-30	1-7	60-70	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	30-80	1-7	70-85	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
898D3:														
Hickory-------------	0-8	20-40	30-50	27-35	1.40-1.65	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.28	.32	4	6	48
	8-46	20-45	30-50	24-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.1-0.5	.28	.32			
	46-58	25-49	28-50	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.1-0.5	.28	.32			
	58-80	30-55	25-50	15-30	1.50-1.75	0.6-2	0.10-0.15	0.0-2.9	0.1-0.5	.28	.32			
Sylvan--------------	0-8	0-7	61-73	27-32	1.25-1.45	0.6-2	0.20-0.22	3.0-5.9	0.5-1.0	.37	.37	4	6	48
	8-31	0-7	58-75	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	31-60	0-7	66-90	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
898F2:														
Hickory-------------	0-12	15-45	30-66	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	12-48	15-45	20-58	27-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	48-60	20-50	18-65	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.2	.28	.32			
Sylvan--------------	0-6	1-10	65-80	18-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	6-28	1-10	58-74	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	28-60	1-10	66-89	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
898F3:														
Hickory-------------	0-12	15-40	25-58	27-35	1.40-1.65	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.28	.32	4	6	48
	12-48	15-45	20-58	27-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	48-60	20-50	18-65	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.2	.28	.32			
Sylvan--------------	0-6	0-7	61-72	27-32	1.25-1.45	0.6-2	0.20-0.22	3.0-5.9	0.5-1.0	.37	.37	4	6	48
	6-30	0-7	58-74	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	30-60	0-7	66-89	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
898G:														
Hickory-------------	0-10	15-40	35-66	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	10-35	15-45	20-58	27-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	35-60	20-50	18-65	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.2	.28	.32			
Sylvan--------------	0-3	0-7	66-81	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	3-7	0-7	68-84	15-25	1.25-1.45	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.49	.49			
	7-33	0-7	58-74	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.5	.37	.37			
	33-60	0-7	66-81	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
962C2:														
Sylvan---------------	0-4	1-10	65-80	18-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	4-30	1-15	60-70	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	30-80	1-15	70-85	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
Bold-----------------	0-12	1-10	75-85	12-18	1.40-1.60	0.6-2	0.21-0.24	0.0-2.9	1.0-2.0	.43	.43	5	4L	86
	12-60	1-10	75-85	12-18	1.10-1.30	0.6-2	0.20-0.24	0.0-2.9	0.1-0.5	.55	.55			
962C3:														
Sylvan---------------	0-6	1-12	61-72	27-32	1.25-1.45	0.6-2	0.20-0.22	3.0-5.9	0.5-1.0	.37	.37	4	6	48
	6-30	1-15	58-74	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	30-60	1-15	66-89	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
Bold-----------------	0-4	1-10	72-87	12-18	1.40-1.60	0.6-2	0.21-0.24	0.0-2.9	0.5-1.0	.55	.55	4	4L	86
	4-60	1-10	72-87	12-18	1.10-1.30	0.6-2	0.20-0.24	0.0-2.9	0.0-0.5	.55	.55			
962D2:														
Sylvan---------------	0-4	1-10	65-80	18-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	4-30	1-15	60-70	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	30-80	1-15	70-85	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
Bold-----------------	0-12	1-10	75-85	12-18	1.40-1.60	0.6-2	0.21-0.24	0.0-2.9	1.0-2.0	.43	.43	5	4L	86
	12-60	1-10	75-85	12-18	1.10-1.30	0.6-2	0.20-0.24	0.0-2.9	0.1-0.5	.55	.55			
962D3:														
Sylvan---------------	0-8	0-7	61-73	27-32	1.25-1.45	0.6-2	0.20-0.22	3.0-5.9	0.2-1.0	.37	.37	4	6	48
	8-31	0-7	58-75	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	31-60	0-7	66-90	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
Bold-----------------	0-8	0-10	72-88	12-18	1.40-1.60	0.6-2	0.21-0.24	0.0-2.9	0.2-1.0	.55	.55	4	4L	86
	8-60	0-10	72-88	12-18	1.10-1.30	0.6-2	0.20-0.24	0.0-2.9	0.0-0.5	.55	.55			
962E2:														
Sylvan---------------	0-6	1-10	65-80	18-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	6-28	1-10	58-74	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	28-60	1-10	66-89	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
Bold-----------------	0-8	1-10	72-87	12-18	1.40-1.60	0.6-2	0.21-0.24	0.0-2.9	1.0-2.0	.43	.43	5	4L	86
	8-60	1-10	72-87	12-18	1.10-1.30	0.6-2	0.20-0.24	0.0-2.9	0.0-0.5	.55	.55			
962F2:														
Sylvan---------------	0-10	1-10	65-80	18-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	10-27	1-10	60-70	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	27-80	1-10	70-85	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
962F2:														
Bold----------------	0-7	1-10	75-85	12-18	1.40-1.60	0.6-2	0.21-0.24	0.0-2.9	1.0-2.0	.43	.43	5	4L	86
	7-60	1-10	75-85	12-18	1.10-1.30	0.6-2	0.20-0.24	0.0-2.9	0.1-0.5	.55	.55			
962G:														
Sylvan--------------	0-10	1-10	65-80	18-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	10-27	1-10	60-70	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	27-80	1-10	70-85	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
Bold----------------	0-7	1-10	75-85	12-18	1.40-1.60	0.6-2	0.21-0.24	0.0-2.9	1.0-3.0	.43	.43	5	4L	86
	7-60	1-10	75-85	12-18	1.10-1.30	0.6-2	0.20-0.24	0.0-2.9	0.1-0.5	.55	.55			
965C2:														
Tallula-------------	0-12	1-10	75-85	10-20	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.32	.32	5	5	56
	12-31	1-10	75-85	12-18	1.10-1.30	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.55	.55			
	31-60	1-10	75-85	8-18	1.10-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.2	.55	.55			
Bold----------------	0-8	1-10	75-85	12-18	1.40-1.60	0.6-2	0.21-0.24	0.0-2.9	1.0-2.0	.43	.43	5	4L	86
	8-60	1-10	75-85	12-18	1.10-1.30	0.6-2	0.20-0.24	0.0-2.9	0.0-0.5	.55	.55			
965D2:														
Tallula-------------	0-12	1-10	75-85	10-20	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.32	.32	5	5	56
	12-31	1-10	75-85	12-18	1.10-1.30	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.55	.55			
	31-60	1-10	75-85	8-18	1.10-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.2	.55	.55			
Bold----------------	0-8	1-10	75-85	12-18	1.40-1.60	0.6-2	0.21-0.24	0.0-2.9	1.0-2.0	.43	.43	5	4L	86
	8-60	1-10	75-85	12-18	1.10-1.30	0.6-2	0.20-0.24	0.0-2.9	0.0-0.5	.55	.55			
3070A:														
Beaucoup------------	0-16	1-15	55-70	27-35	1.15-1.35	0.2-0.6	0.15-0.20	3.0-5.9	5.0-6.0	.28	.28	5	6	48
	16-64	1-15	55-70	27-35	1.30-1.50	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32			
	64-80	5-55	35-70	10-30	1.35-1.55	0.2-0.6	0.18-0.22	3.0-5.9	0.5-1.0	.32	.32			
3070S:														
Beaucoup------------	0-16	1-15	55-70	27-35	1.15-1.35	0.2-0.6	0.15-0.20	3.0-5.9	5.0-6.0	.28	.28	5	6	48
	16-64	1-15	55-70	27-35	1.30-1.50	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32			
	64-79	70-90	0-27	3-10	1.45-1.65	2-20	0.05-0.10	0.0-2.9	0.0-0.5	.02	.02			
3073A:														
Ross----------------	0-13	20-45	28-65	15-27	1.20-1.45	0.6-2	0.19-0.24	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	13-43	20-45	28-62	18-27	1.20-1.50	0.6-2	0.16-0.22	0.0-2.9	1.0-3.0	.28	.28			
	43-60	40-70	10-55	5-20	1.35-1.60	0.6-6	0.05-0.18	0.0-2.9	0.5-1.0	.28	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
3074A:														
Radford-------------	0-12	0-15	58-82	18-27	1.40-1.60	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	12-33	0-15	58-82	18-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-2.0	.49	.49			
	33-80	5-30	35-71	24-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
3078A:														
Arenzville----------	0-6	5-15	70-80	10-18	1.20-1.55	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	6-36	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.2-0.8	.49	.49			
	36-80	5-30	35-71	24-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
3107A:														
Sawmill-------------	0-10	3-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.5-7.0	.28	.28	5	6	48
	10-32	3-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.5-7.0	.28	.28			
	32-58	5-20	45-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	1.5-3.5	.32	.32			
	58-65	5-25	40-70	25-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	0.8-3.5	.32	.32			
3107L:														
Sawmill-------------	0-32	3-15	50-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.5-7.0	.28	.28	5	6	48
	32-58	5-20	45-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	1.5-3.5	.32	.32			
	58-65	5-25	40-70	25-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	1.5-3.5	.32	.32			
3107S:														
Sawmill-------------	0-10	3-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.5-7.0	.28	.28	5	6	48
	10-32	3-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.5-7.0	.28	.28			
	32-58	5-20	45-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	1.5-3.5	.32	.32			
	58-79	70-90	0-27	3-10	1.45-1.65	2-20	0.05-0.10	0.0-2.9	0.0-0.5	.02	.02			
3284A:														
Tice----------------	0-14	0-15	50-73	27-35	1.25-1.45	0.6-2	0.21-0.24	3.0-5.9	2.0-4.0	.28	.28	5	6	48
	14-52	5-20	45-71	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
	52-72	5-40	30-80	15-30	1.40-1.60	0.6-2	0.11-0.18	3.0-5.9	0.0-1.0	.32	.32			
3284S:														
Tice----------------	0-14	0-15	50-73	27-35	1.25-1.45	0.6-2	0.21-0.24	3.0-5.9	2.0-4.0	.28	.28	5	6	48
	14-52	5-20	45-71	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
	52-79	70-90	0-27	3-10	1.45-1.65	2-20	0.05-0.10	0.0-2.9	0.0-0.5	.02	.02			
3405A:														
Zook----------------	0-8	0-15	45-65	35-40	1.30-1.35	0.2-0.6	0.21-0.23	6.0-8.9	4.0-5.0	.28	.28	5	4	86
	8-55	0-15	40-64	36-45	1.30-1.45	0.06-0.2	0.15-0.18	6.0-8.9	2.0-4.0	.28	.28			
	55-60	0-15	40-80	20-45	1.30-1.45	0.06-0.6	0.13-0.20	3.0-5.9	0.5-1.0	.32	.32			
3451A:														
Lawson--------------	0-14	0-15	58-90	10-27	1.20-1.55	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	14-33	0-15	55-90	10-30	1.20-1.55	0.6-2	0.18-0.22	0.0-2.9	2.0-4.0	.32	.32			
	33-80	5-40	30-77	18-30	1.55-1.65	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
7037A:														
Worthen-------------	0-30	0-15	63-88	12-22	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	30-63	0-15	59-85	15-26	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	0.5-2.0	.49	.49			
	63-80	10-25	51-75	15-26	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	0.2-0.8	.49	.49			
7037B:														
Worthen-------------	0-30	0-15	63-88	12-22	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	30-63	0-15	59-85	15-26	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	0.5-2.0	.49	.49			
	63-80	10-25	51-75	15-26	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	0.2-0.8	.49	.49			
7081A:														
Littleton-----------	0-10	2-15	65-80	18-27	1.20-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-4.0	.32	.32	5	6	48
	10-33	1-13	65-75	22-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.49	.49			
	33-80	5-22	60-75	18-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.49	.49			
7148A:														
Proctor-------------	0-16	0-10	66-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	16-34	0-10	58-73	27-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	34-53	15-70	28-67	18-30	1.30-1.55	0.6-2	0.13-0.16	0.0-2.9	0.1-0.5	.32	.32			
	53-60	65-80	15-30	5-15	1.40-1.70	2-6	0.08-0.10	0.0-2.9	0.0-0.5	.24	.24			
8070A:														
Beaucoup------------	0-15	0-15	55-70	27-35	1.15-1.35	0.2-0.6	0.15-0.20	3.0-5.9	5.0-6.0	.28	.28	5	6	48
	15-48	0-15	55-70	27-35	1.30-1.50	0.2-0.6	0.18-0.20	3.0-5.9	0.0-2.0	.32	.32			
	48-60	5-45	40-70	15-30	1.35-1.55	0.2-0.6	0.18-0.22	3.0-5.9	0.0-1.0	.32	.32			
	60-80	5-45	40-70	10-30	1.40-1.65	0.2-0.6	0.18-0.22	3.0-5.9	0.0-1.0	.32	.32			
8284A:														
Tice----------------	0-14	1-15	50-72	27-35	1.25-1.45	0.6-2	0.21-0.24	3.0-5.9	2.0-4.0	.28	.28	5	6	48
	14-80	1-15	50-75	24-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.0-1.0	.32	.32			
8405A:														
Zook----------------	0-8	0-15	45-65	35-40	1.30-1.35	0.2-0.6	0.21-0.23	6.0-8.9	4.0-5.0	.28	.28	5	4	86
	8-55	0-15	40-64	36-45	1.30-1.45	0.06-0.2	0.15-0.18	6.0-8.9	2.0-4.0	.28	.28			
	55-60	0-15	40-80	20-45	1.30-1.45	0.06-0.6	0.11-0.20	3.0-5.9	0.0-1.0	.32	.32			
8452A:														
Riley---------------	0-8	30-52	28-50	18-27	1.20-1.40	0.6-2	0.18-0.24	3.0-5.9	3.0-4.0	.32	.32	4	6	48
	8-24	15-60	15-60	24-35	1.45-1.65	0.6-2	0.16-0.20	3.0-5.9	0.5-2.0	.28	.28			
	24-31	35-60	20-50	18-35	1.45-1.65	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	31-60	70-90	2-18	2-10	1.65-1.80	6-20	0.05-0.10	0.0-2.9	0.0-0.2	.02	.02			

Table 21.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
8D:				
Hickory	0-4	14-19	4.5-7.3	0
	4-12	9.0-14	4.5-7.3	0
	12-46	16-22	4.5-7.3	0
	46-58	9.0-19	5.1-8.4	0-15
	58-63	5.0-15	5.6-8.4	0-25
8D2:				
Hickory	0-6	14-19	4.5-7.3	0
	6-47	16-22	4.5-7.3	0
	47-80	9.0-19	5.1-8.4	0-15
8F:				
Hickory	0-4	6.5-14	4.5-7.3	0
	4-12	7.8-12	4.5-7.3	0
	12-46	12-18	4.5-6.0	0
	46-58	7.8-17	5.1-7.3	0
	58-80	7.8-16	5.6-8.4	0-25
17A:				
Keomah	0-11	10-26	5.1-7.3	0
	11-18	9.0-24	5.1-7.3	0
	18-33	28-41	5.1-6.5	0
	33-51	16-29	5.6-7.3	0
	51-89	8.0-18	6.1-7.3	0
30G:				
Hamburg	0-7	4.0-8.0	6.6-8.4	0-30
	7-60	4.0-8.0	7.4-8.4	12-30
34B2:				
Tallula	0-12	10-18	6.6-7.8	0
	12-31	8.0-12	6.6-7.8	0-15
	31-60	7.0-11	7.4-8.4	10-40
43A:				
Ipava	0-10	16-32	5.6-7.3	0
	10-18	25-38	5.6-7.3	0
	18-31	22-39	5.6-7.3	0
	31-50	17-31	6.6-7.8	0-5
	50-60	9.0-22	7.4-8.4	0-15
45A:				
Denny	0-9	18-24	5.6-7.3	0
	9-22	9.0-15	5.6-6.5	0
	22-45	21-29	5.6-6.5	0
	45-70	4.5-18	6.1-7.8	0
53B:				
Bloomfield	0-6	2.0-10	5.1-7.3	0
	6-38	1.0-7.0	5.1-7.3	0
	38-60	3.0-8.0	5.1-7.8	0
53D:				
Bloomfield	0-8	2.0-10	5.1-7.3	0
	8-34	1.0-7.0	5.1-7.3	0
	34-60	3.0-8.0	5.1-7.8	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
67A:				
Harpster	0-18	27-40	7.9-8.4	15-40
	18-41	18-27	7.4-8.4	5-40
	41-56	9.0-23	7.9-8.4	5-40
	56-60	4.0-16	7.9-8.4	10-40
68A:				
Sable	0-17	26-33	5.6-7.3	0
	17-23	20-30	5.6-7.3	0
	23-51	15-23	5.6-7.8	0-10
	51-60	11-21	6.6-8.4	0-15
86B:				
Osco	0-14	18-25	5.1-7.3	0
	14-55	15-23	5.1-6.5	0
	55-60	12-18	5.6-7.3	0-15
86C2:				
Osco	0-9	18-25	5.1-7.3	0
	9-34	15-23	5.1-6.5	0
	34-60	12-18	5.1-7.3	0-15
119D:				
Elco	0-4	14-22	5.6-7.3	0
	4-12	14-22	5.6-7.3	0
	12-26	14-22	5.1-7.8	0
	26-80	15-27	5.1-7.8	0
119D2:				
Elco	0-6	14-22	5.6-7.3	0
	6-28	14-22	5.1-7.8	0
	28-60	15-27	5.1-7.8	0
119D3:				
Elco	0-5	16-22	5.6-7.3	0
	5-26	14-22	5.1-7.8	0
	26-60	15-27	5.1-7.8	0
131C2:				
Alvin	0-7	7.0-11	5.0-7.3	0
	7-42	9.0-12	5.0-7.3	0
	42-80	2.0-7.0	5.1-8.4	0-25
131D2:				
Alvin	0-7	8.6-13	5.0-7.3	0
	7-14	7.6-12	5.0-7.3	0
	14-47	11-15	5.0-7.3	0
	47-60	2.6-8.5	5.1-8.4	0-25
134C2:				
Camden	0-7	11-29	5.1-7.3	0
	7-34	15-29	5.1-7.3	0
	34-43	9.0-20	5.1-7.3	0
	43-80	2.0-10	6.1-7.8	0-25
136A:				
Brooklyn	0-7	18-24	5.6-7.3	0
	7-17	9.0-14	4.5-7.3	0
	17-44	21-28	5.0-7.8	0-5
	44-60	6.0-19	5.0-7.8	0-20

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
138A:				
Shiloh---------------	0-27	29-34	6.1-7.3	0
	27-52	22-31	6.1-7.8	0
	52-80	10-23	6.1-7.8	0-10
152A:				
Drummer--------------	0-14	27-40	5.6-7.3	0
	14-41	17-31	6.1-7.3	0
	41-47	9.0-19	6.6-7.8	0-5
	47-60	6.0-13	7.4-8.4	0-15
198A:				
Elburn---------------	0-16	16-32	6.1-7.3	0
	16-49	17-31	5.6-7.8	0
	49-58	6.0-13	6.6-7.8	0-5
	58-62	2.0-10	6.6-7.8	0-15
199A:				
Plano----------------	0-14	17-26	6.1-7.3	0
	14-49	15-30	5.1-7.3	0
	49-60	9.0-20	5.6-7.8	0
	60-72	6.0-13	5.6-8.4	0-20
199B:				
Plano----------------	0-15	17-26	6.1-7.3	0
	15-45	13-26	5.1-7.3	0
	45-55	6.0-19	5.6-7.8	0
	55-72	6.0-13	5.6-8.4	0-20
206A:				
Thorp----------------	0-14	20-28	5.1-7.8	0
	14-19	11-17	5.1-7.3	0
	19-43	13-22	5.1-7.3	0
	43-50	12-19	5.6-7.8	0-5
	50-65	3.0-13	6.1-8.4	0-20
212C2:				
Thebes---------------	0-9	13-21	6.1-7.3	0
	9-31	17-27	5.0-6.5	0
	31-40	10-20	5.0-6.5	0
	40-80	1.0-7.0	5.1-6.5	0
243A:				
St. Charles----------	0-8	14-22	5.1-7.8	0
	8-50	15-22	4.5-7.3	0
	50-60	9.0-19	5.1-7.3	0
243B:				
St. Charles----------	0-8	14-22	5.1-7.8	0
	8-50	15-22	4.5-7.3	0
	50-60	9.0-19	5.1-7.3	0
244A:				
Hartsburg------------	0-17	27-40	6.1-7.8	0-5
	17-34	17-31	6.6-8.4	0-25
	34-60	9.0-23	7.4-8.4	15-40

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
257A:				
Clarksdale	0-8	10-22	5.6-7.3	0
	8-16	9.0-18	5.1-7.3	0
	16-47	21-28	5.1-7.3	0
	47-67	12-19	6.1-8.4	0-15
	67-80	12-18	6.1-8.4	0-15
270A:				
Stronghurst	0-9	14-22	5.1-7.3	0
	9-12	12-22	5.1-7.3	0
	12-55	17-23	5.1-7.3	0
	55-68	16-21	5.1-7.3	0
	68-80	1.0-7.0	5.1-7.3	0
279B:				
Rozetta	0-7	10-22	5.1-7.3	0
	7-11	7.0-17	4.5-7.3	0
	11-55	16-22	4.5-6.0	0
	55-60	12-17	5.6-7.8	0-15
279B3:				
Rozetta	0-6	7.0-17	5.1-7.3	0
	6-33	16-22	4.5-6.0	0
	33-60	12-17	5.6-7.8	0-15
279C2:				
Rozetta	0-8	10-22	5.1-7.3	0
	8-56	16-22	4.5-6.0	0
	56-80	12-17	5.6-7.8	0-15
279C3:				
Rozetta	0-6	7.0-17	5.1-7.3	0
	6-33	16-22	4.5-6.0	0
	33-60	12-17	5.6-7.8	0-15
280C2:				
Fayette	0-8	18-25	5.1-7.3	0
	8-64	15-22	4.5-6.0	0
	64-80	15-20	5.1-7.8	0-15
379A:				
Dakota	0-14	12-23	5.1-7.3	0
	14-31	15-26	5.1-6.5	0
	31-36	3.3-12	5.1-6.5	0
	36-60	1.0-4.6	5.1-6.5	0
567C2:				
Elkhart	0-8	16-24	5.6-7.8	0
	8-34	15-22	5.6-8.4	0-20
	34-60	12-21	7.4-8.4	10-40
630C2:				
Navlys	0-6	14-20	5.6-7.3	0
	6-27	15-23	5.6-7.3	0
	27-60	13-21	7.4-8.4	10-35
630D3:				
Navlys	0-6	16-20	5.6-7.3	0
	6-31	15-23	5.6-7.3	0
	31-60	13-21	7.4-8.4	10-35

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
675B:				
Greenbush	0-14	20-25	5.1-7.3	0
	14-60	25-30	4.5-7.3	0
	60-80	20-25	5.6-7.3	0
683A:				
Lawndale	0-18	18-27	5.6-7.3	0
	18-44	15-23	5.6-7.3	0
	44-60	15-20	5.6-7.3	0
684A:				
Broadwell	0-15	18-27	5.6-7.3	0
	15-50	15-23	5.6-7.3	0
	50-55	15-20	5.6-7.3	0
	55-80	2.0-7.0	5.6-7.3	0
684B:				
Broadwell	0-15	18-27	5.6-7.3	0
	15-50	15-23	5.6-7.3	0
	50-55	15-20	5.6-7.3	0
	55-80	2.0-7.0	5.6-7.3	0
684C2:				
Broadwell	0-8	25-30	5.6-7.3	0
	8-46	25-30	5.6-7.3	0
	46-49	15-20	5.6-7.3	0
	49-60	5.0-10	5.6-7.3	0
685B:				
Middletown	0-9	14-22	6.1-7.3	0
	9-12	9.0-19	5.1-7.3	0
	12-44	17-27	5.0-6.5	0
	44-47	7.6-23	5.0-7.3	0
	47-79	1.0-7.0	5.1-7.3	0
685C2:				
Middletown	0-7	14-21	6.1-7.3	0
	7-46	17-27	5.0-6.5	0
	46-55	7.6-27	5.0-7.3	0
	55-60	1.0-7.0	5.1-7.3	0
685C3:				
Middletown	0-7	20-27	6.1-7.3	0
	7-46	17-27	5.0-6.5	0
	46-55	7.6-27	5.0-7.3	0
	55-60	2.6-8.6	5.1-7.3	0
685D2:				
Middletown	0-7	14-21	6.1-7.3	0
	7-46	17-27	5.0-6.5	0
	46-55	7.6-27	5.0-7.3	0
	55-60	1.0-7.0	5.1-7.3	0
685D3:				
Middletown	0-7	20-28	6.1-7.3	0
	7-46	17-27	5.0-6.5	0
	46-55	7.6-27	5.0-7.3	0
	55-60	2.6-8.6	5.1-7.3	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
705A:				
Buckhart	0-20	18-25	5.6-7.3	0
	20-58	15-23	5.1-7.8	0
	58-60	12-18	5.6-7.8	0-15
705B:				
Buckhart	0-15	18-25	5.6-7.3	0
	15-67	15-23	5.6-7.8	0
	67-80	12-18	6.6-7.8	0-15
802E:				
Orthents	0-6	14-20	5.6-7.8	0
	6-60	14-20	5.6-7.8	0
827B:				
Broadwell	0-15	18-27	5.6-7.3	0
	15-50	15-23	5.6-7.3	0
	50-55	15-20	5.6-7.3	0
	55-80	2.0-7.0	5.6-7.3	0
Onarga	0-13	7.0-15	5.1-7.3	0
	13-29	9.8-15	5.0-7.3	0
	29-60	1.0-7.0	5.6-7.3	0
827C2:				
Broadwell	0-8	25-30	5.6-7.3	0
	8-46	25-30	5.6-7.3	0
	46-49	15-20	5.6-7.3	0
	49-60	5.0-10	5.6-7.3	0
Onarga	0-7	7.0-13	5.1-7.3	0
	7-27	9.8-15	5.0-7.3	0
	27-64	1.0-7.0	5.6-7.3	0
828B:				
Broadwell	0-15	18-27	5.6-7.3	0
	15-50	15-23	5.6-7.3	0
	50-55	15-20	5.6-7.3	0
	55-80	2.0-7.0	5.6-7.3	0
Sparta	0-23	2.0-12	5.1-7.3	0
	23-34	1.0-6.0	5.1-7.3	0
	34-60	1.0-4.0	5.1-7.8	0
828D2:				
Broadwell	0-15	18-27	5.6-7.3	0
	15-50	15-23	5.6-7.3	0
	50-55	15-20	5.6-7.3	0
	55-80	2.0-7.0	5.6-7.3	0
Sparta	0-23	2.0-12	5.1-7.3	0
	23-34	1.0-6.0	5.1-7.3	0
	34-60	1.0-4.0	5.1-7.8	0
835G.				
Earthen dam				

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
861B2:				
Princeton------------	0-8	1.1-5.4	5.1-7.3	0
	8-31	7.0-15	5.0-7.3	0
	31-80	2.0-5.0	5.0-7.3	0
Bloomfield-----------	0-6	1.8-7.8	5.1-7.3	0
	6-25	1.0-7.0	5.1-7.3	0
	25-80	3.0-8.0	5.1-7.8	0
861D2:				
Princeton------------	0-8	1.1-5.4	5.1-7.3	0
	8-31	7.0-15	5.0-7.3	0
	31-80	2.0-5.0	5.0-7.3	0
Bloomfield-----------	0-6	1.8-7.8	5.1-7.3	0
	6-25	1.0-7.0	5.1-7.3	0
	25-80	3.0-8.0	5.1-7.8	0
861F:				
Princeton------------	0-8	1.1-5.5	5.1-7.3	0
	8-31	7.0-15	5.0-7.3	0
	31-80	2.0-5.0	5.0-7.3	0
Bloomfield-----------	0-8	1.8-8.1	5.1-7.3	0
	8-34	1.0-7.0	5.1-7.3	0
	34-60	3.0-8.0	5.1-7.8	0
864.				
Pits, quarry				
871B:				
Lenzburg-------------	0-5	13-24	6.6-8.4	0-20
	5-37	12-23	6.6-8.4	0-25
	37-80	12-23	7.4-8.4	0-25
871D:				
Lenzburg-------------	0-5	17-29	6.6-8.4	0-20
	5-37	12-23	6.6-8.4	0-25
	37-80	12-23	7.4-8.4	0-25
871G:				
Lenzburg-------------	0-5	17-29	6.6-8.4	0-20
	5-37	12-23	6.6-8.4	0-25
	37-80	12-23	7.4-8.4	0-25
898D2:				
Hickory--------------	0-6	14-19	4.5-7.3	0
	6-47	16-22	4.5-7.3	0
	47-60	9.0-19	5.1-8.4	0-15
Sylvan---------------	0-5	14-20	5.6-7.3	0
	5-30	15-22	5.6-7.3	0
	30-80	8.1-21	7.4-8.4	10-35
898D3:				
Hickory--------------	0-8	17-23	4.5-7.3	0
	8-46	16-22	4.5-7.3	0
	46-58	9.0-19	5.1-7.3	0
	58-80	5.0-15	5.6-8.4	0-25

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
898D3:				
Sylvan	0-8	17-21	5.6-7.3	0
	8-31	15-22	5.6-7.3	0
	31-60	7.6-21	7.4-8.4	0-35
898F2:				
Hickory	0-12	14-19	4.5-7.3	0
	12-48	16-22	4.5-7.3	0
	48-60	9.0-19	5.1-8.4	0-15
Sylvan	0-6	14-20	5.6-7.3	0
	6-28	15-22	5.6-7.3	0
	28-60	7.6-21	7.4-8.4	0-35
898F3:				
Hickory	0-12	17-23	4.5-7.3	0
	12-48	16-22	4.5-7.3	0
	48-60	9.0-19	5.1-8.4	0-15
Sylvan	0-6	17-21	5.6-7.3	0
	6-30	15-22	5.6-7.3	0
	30-60	7.6-21	7.4-8.4	0-35
898G:				
Hickory	0-10	14-19	4.5-7.3	0
	10-35	16-22	4.5-7.3	0
	35-60	9.0-19	5.1-8.4	0-15
Sylvan	0-3	13-20	5.6-7.3	0
	3-7	9.0-17	5.6-7.3	0
	7-33	15-22	5.6-7.3	0
	33-60	11-17	6.6-8.4	0-35
962C2:				
Sylvan	0-4	14-20	5.6-7.3	0
	4-30	15-22	5.6-7.3	0
	30-80	6.0-18	7.4-8.4	10-35
Bold	0-12	8.0-15	7.4-8.4	10-40
	12-60	7.0-12	7.4-8.4	10-50
962C3:				
Sylvan	0-6	17-21	5.6-7.3	0
	6-30	15-22	5.6-7.3	0
	30-60	6.0-18	7.4-8.4	0-35
Bold	0-4	6.0-15	7.4-8.4	10-40
	4-60	5.0-12	7.4-8.4	10-50
962D2:				
Sylvan	0-4	14-20	5.6-7.3	0
	4-30	15-22	5.6-7.3	0
	30-80	6.0-18	7.4-8.4	10-35
Bold	0-12	8.0-15	7.4-8.4	10-40
	12-60	7.0-12	7.4-8.4	10-50
962D3:				
Sylvan	0-8	17-21	5.6-7.3	0
	8-31	15-22	5.6-7.3	0
	31-60	6.0-18	7.4-8.4	0-35

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
962D3:				
Bold	0-8	6.0-15	7.4-8.4	10-40
	8-60	5.0-12	7.4-8.4	10-50
962E2:				
Sylvan	0-6	14-20	5.6-7.3	0
	6-28	15-22	5.6-7.3	0
	28-60	6.0-18	7.4-8.4	0-35
Bold	0-8	6.0-15	7.4-8.4	10-40
	8-60	5.0-12	7.4-8.4	10-50
962F2:				
Sylvan	0-10	14-20	5.6-7.3	0
	10-27	15-22	5.6-7.3	0
	27-80	6.0-18	7.4-8.4	0-35
Bold	0-7	8.0-15	7.4-8.4	10-40
	7-60	7.0-12	7.4-8.4	10-50
962G:				
Sylvan	0-10	14-20	5.6-7.3	0
	10-27	15-22	5.6-7.3	0
	27-80	6.0-18	7.4-8.4	0-35
Bold	0-7	8.0-15	7.4-8.4	10-40
	7-60	7.0-12	7.4-8.4	10-50
965C2:				
Tallula	0-12	10-18	6.6-7.8	0
	12-31	8.0-12	6.6-7.8	0-15
	31-60	7.0-11	7.4-8.4	10-40
Bold	0-8	6.0-15	7.4-8.4	10-40
	8-60	5.0-12	7.4-8.4	10-50
965D2:				
Tallula	0-12	10-18	6.6-7.8	0
	12-31	8.0-12	6.6-7.8	0-15
	31-60	7.0-11	7.4-8.4	10-40
Bold	0-8	6.0-15	7.4-8.4	10-40
	8-60	5.0-12	7.4-8.4	10-50
3070A:				
Beaucoup	0-16	26-33	5.6-7.8	0
	16-64	16-25	5.6-7.8	0-5
	64-80	9.0-20	6.1-8.4	0-15
3070S:				
Beaucoup	0-16	26-33	5.6-7.8	0
	16-64	16-25	5.6-7.8	0
	64-79	2.6-8.6	6.1-7.8	0
3073A:				
Ross	0-13	13-23	6.1-7.3	0
	13-43	12-26	6.1-7.3	0
	43-60	4.6-17	6.1-7.8	0-1

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
3074A:				
Radford	0-12	15-24	5.6-7.8	0
	12-33	11-20	6.1-7.8	0
	33-80	14-23	6.1-7.8	0-20
3078A:				
Arenzville	0-6	4.0-16	5.6-7.8	0
	6-36	4.0-16	5.6-7.8	0
	36-80	14-23	6.1-7.8	0-20
3107A:				
Sawmill	0-10	23-36	6.1-7.8	0
	10-32	23-36	6.1-7.8	0
	32-58	18-34	6.1-7.8	0
	58-65	18-34	6.1-7.8	0-5
3107L:				
Sawmill	0-32	23-36	6.1-7.3	0
	32-58	18-34	6.6-7.8	0
	58-65	18-34	6.6-8.4	0-5
3107S:				
Sawmill	0-10	23-36	6.1-7.8	0
	10-32	23-36	6.1-7.8	0
	32-58	18-34	6.1-7.8	0
	58-79	2.6-8.6	6.1-7.8	0
3284A:				
Tice	0-14	20-27	6.1-7.8	0
	14-52	17-27	5.6-7.3	0
	52-72	9.0-20	5.6-7.8	0-20
3284S:				
Tice	0-14	20-27	6.1-7.8	0
	14-52	16-23	5.6-7.3	0
	52-79	2.6-8.6	6.1-7.8	0
3405A:				
Zook	0-8	36-41	5.6-7.3	0
	8-55	36-41	6.1-7.3	0
	55-60	30-36	6.1-7.3	0
3451A:				
Lawson	0-14	11-28	6.1-7.8	0
	14-33	11-29	6.1-7.8	0
	33-80	11-23	6.1-7.8	0
7037A:				
Worthen	0-30	15-21	5.6-7.3	0
	30-63	11-14	5.6-7.8	0
	63-80	9.0-14	6.1-8.4	0-25
7037B:				
Worthen	0-30	15-21	5.6-7.3	0
	30-63	11-14	5.6-7.8	0
	63-80	9.0-14	6.1-8.4	0-25
7081A:				
Littleton	0-10	15-25	5.6-7.8	0
	10-33	15-25	5.6-7.8	0
	33-80	11-18	5.6-7.8	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	pH	Pct
7148A:				
Proctor	0-16	16-25	5.6-7.3	0
	16-34	16-23	5.6-6.5	0
	34-53	9.0-22	5.6-7.3	0
	53-60	3.0-7.0	6.1-7.3	0
8070A:				
Beaucoup	0-15	26-33	5.6-7.8	0
	15-48	16-25	5.6-7.8	0
	48-60	9.0-20	6.1-7.8	0-5
	60-80	6.0-20	6.1-8.4	0-25
8284A:				
Tice	0-14	20-27	6.1-7.8	0
	14-80	16-23	5.1-7.3	0
8405A:				
Zook	0-8	36-41	5.6-7.3	0
	8-55	36-41	6.1-7.3	0
	55-60	30-36	6.1-7.3	0
8452A:				
Riley	0-8	20-27	5.6-7.8	0
	8-24	10-25	5.6-7.8	0
	24-31	10-25	5.6-7.8	0
	31-60	1.8-8.3	5.6-8.4	0-20

Table 22.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
8D:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
8D2:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
8F:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
17A:										
Keomah	C	---	---	---	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
30G:										
Hamburg	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
34B2:										
Tallula	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
43A:										
Ipava	B	---	---	---	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
45A:										
Denny	D	0.0-1.0	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
53B:										
Bloomfield	A	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
53D:										
Bloomfield	A	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
67A:										
Harpster	B	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
68A:										
Sable	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
86B:										
Osco	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
86C2:										
Osco	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
119D:										
Elco	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	2.0-3.5	2.8-4.5	Perched
		---	---	---	---	None	May-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
119D2:										
Elco------------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	2.0-3.5	2.8-4.5	Perched
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
119D3:										
Elco------------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	2.0-3.5	2.8-4.5	Perched
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
131C2:										
Alvin-----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
131D2:										
Alvin-----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
134C2:										
Camden----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
136A:										
Brooklyn--------------	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
138A:										
Shiloh----------------	B/D	0.0-1.0	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
152A:										
Drummer---------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
198A:										
Elburn----------------	B	---	---	---	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
199A:										
Plano-----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
199B:										
Plano-----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
206A:										
Thorp-----------------	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
212C2:										
Thebes----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
243A:										
St. Charles-----------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
243B:										
St. Charles-----------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
244A:										
Hartsburg-------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
257A:										
Clarksdale------------	C	---	---	---	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
270A:										
Stronghurst-----------	B	---	---	---	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
279B:										
Rozetta---------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
279B3:										
Rozetta---------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
279C2:										
Rozetta---------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
279C3:										
Rozetta---------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
280C2:										
Fayette---------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
379A:										
Dakota----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
567C2:										
Elkhart---------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
630C2:										
Navlys----------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
630D3:										
Navlys----------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
675B:										
Greenbush-------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
683A:										
Lawndale--------------	B	---	---	---	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
684A:										
Broadwell-------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
684B:										
Broadwell-------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
684C2:										
Broadwell-------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
685B:										
Middletown------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
685C2:										
Middletown------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
685C3:										
Middletown------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
685D2:										
Middletown------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
685D3:										
Middletown------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
705A:										
Buckhart--------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
705B:										
Buckhart--------------	B	---	---	---	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	None	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	---	---	None	May-Dec	>6.0	>6.0	---
802E:										
Orthents--------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
827B:										
Broadwell-------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Onarga----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
827C2:										
Broadwell-------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Onarga----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
828B:										
Broadwell-------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Sparta----------------	A	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
828D2:										
Broadwell-------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Sparta----------------	A	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
835G.										
Earthen dam										
861B2:										
Princeton-------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bloomfield------------	A	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
861D2:										
Princeton-------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bloomfield------------	A	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
861F:										
Princeton	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bloomfield	A	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
864. Pits, quarry										
871B:										
Lenzburg	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
871D:										
Lenzburg	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
871G:										
Lenzburg	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
898D2:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
898D3:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
898F2:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
898F3:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
898G:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
962C2:										
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bold	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
962C3:										
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bold	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
962D2:										
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bold	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
962D3:										
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bold	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
962E2:										
Sylvan----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bold------------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
962F2:										
Sylvan----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bold------------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
962G:										
Sylvan----------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bold------------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
965C2:										
Tallula---------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bold------------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
965D2:										
Tallula---------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
Bold------------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
3070A:										
Beaucoup--------------	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
3070S:										
Beaucoup--------------	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
3073A:										
Ross------------------	B	---	---	---	Brief	Frequent	Jan	>6.0	>6.0	---
		---	---	---			Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---			May-Dec	>6.0	>6.0	---
3074A:										
Radford---------------	B	---	---	---	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
3078A:										
Arenzville------------	B	---	---	---	Brief	Frequent	Jan	>6.0	>6.0	---
		---	---	---			Feb-Apr	3.5-6.0	>6.0	Apparent
		---	---	---			May-Dec	>6.0	>6.0	---
3107A:										
Sawmill---------------	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
3107L:										
Sawmill---------------	B/D	0.0-0.5	Long	Frequent	Long	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
3107S:										
Sawmill---------------	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
3284A:										
Tice------------------	B	---	---	---	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
3284S:										
Tice------------------	B	---	---	---	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
3405A:										
Zook------------------	C/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
3451A:										
Lawson----------------	B	---	---	---	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
7037A:										
Worthen---------------	B	---	---	---	---	Rare	Jan-Dec	>6.0	>6.0	---
7037B:										
Worthen---------------	B	---	---	---	---	Rare	Jan-Dec	>6.0	>6.0	---
7081A:										
Littleton-------------	B	---	---	---	---	Rare	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
7148A:										
Proctor---------------	B	---	---	---	---	Rare	Jan-Dec	>6.0	>6.0	---
8070A:										
Beaucoup--------------	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
8284A:										
Tice------------------	B	---	---	---	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
8405A:										
Zook------------------	C/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---
8452A:										
Riley-----------------	B	---	---	---	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---			Jun-Dec	>6.0	>6.0	---

Table 23.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Potential for frost action	Risk of corrosion	
		Uncoated steel	Concrete
8D:			
Hickory	Moderate	Moderate	High
8D2:			
Hickory	Moderate	Moderate	High
8F:			
Hickory	Moderate	Moderate	High
17A:			
Keomah	High	High	Moderate
30G:			
Hamburg	High	Low	Low
34B2:			
Tallula	High	Low	Low
43A:			
Ipava	High	High	Moderate
45A:			
Denny	High	High	Moderate
53B:			
Bloomfield	Low	Low	High
53D:			
Bloomfield	Low	Low	High
67A:			
Harpster	High	High	Low
68A:			
Sable	High	High	Moderate
86B:			
Osco	High	Moderate	Moderate
86C2:			
Osco	High	Moderate	Moderate
119D:			
Elco	High	High	Moderate
119D2:			
Elco	High	High	Moderate
119D3:			
Elco	High	High	Moderate
131C2:			
Alvin	Moderate	Low	Moderate
131D2:			
Alvin	Moderate	Low	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
134C2:			
Camden	High	Moderate	Moderate
136A:			
Brooklyn	High	High	Moderate
138A:			
Shiloh	High	High	Low
152A:			
Drummer	High	High	Low
198A:			
Elburn	High	High	Moderate
199A:			
Plano	High	Moderate	Moderate
199B:			
Plano	High	Moderate	Moderate
206A:			
Thorp	High	High	Moderate
212C2:			
Thebes	High	Moderate	Moderate
243A:			
St. Charles	High	Moderate	High
243B:			
St. Charles	High	Moderate	High
244A:			
Hartsburg	High	High	Low
257A:			
Clarksdale	High	High	Moderate
270A:			
Stronghurst	High	High	Moderate
279B:			
Rozetta	High	Moderate	High
279B3:			
Rozetta	High	Moderate	High
279C2:			
Rozetta	High	Moderate	High
279C3:			
Rozetta	High	Moderate	High
280C2:			
Fayette	High	Moderate	High
379A:			
Dakota	Moderate	Low	High
567C2:			
Elkhart	High	Moderate	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
630C2:			
Navlys	High	Moderate	Moderate
630D3:			
Navlys	High	Moderate	Moderate
675B:			
Greenbush	High	Moderate	High
683A:			
Lawndale	High	High	Moderate
684A:			
Broadwell	High	Moderate	Moderate
684B:			
Broadwell	High	Moderate	Moderate
684C2:			
Broadwell	High	Moderate	Moderate
685B:			
Middletown	High	Moderate	Moderate
685C2:			
Middletown	High	Moderate	Moderate
685C3:			
Middletown	High	Moderate	Moderate
685D2:			
Middletown	High	Moderate	Moderate
685D3:			
Middletown	High	Moderate	Moderate
705A:			
Buckhart	High	High	Moderate
705B:			
Buckhart	High	High	Moderate
802E:			
Orthents	Moderate	Moderate	Moderate
827B:			
Broadwell	High	Moderate	Moderate
Onarga	Moderate	Low	Moderate
827C2:			
Broadwell	High	Moderate	Moderate
Onarga	Moderate	Low	Moderate
828B:			
Broadwell	High	Moderate	Moderate
Sparta	Low	Low	High

Table 23.--Soil Features--Continued

Map symbol and soil name	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
828D2:			
Broadwell	High	Moderate	Moderate
Sparta	Low	Low	High
835G. Earthen dam			
861B2:			
Princeton	Moderate	Moderate	Moderate
Bloomfield	Low	Low	High
861D2:			
Princeton	Moderate	Moderate	Moderate
Bloomfield	Low	Low	High
861F:			
Princeton	Moderate	Moderate	Moderate
Bloomfield	Low	Low	High
864. Pits, quarry			
871B:			
Lenzburg	Moderate	Moderate	Low
871D:			
Lenzburg	Moderate	Moderate	Low
871G:			
Lenzburg	Moderate	Moderate	Low
898D2:			
Hickory	Moderate	Moderate	High
Sylvan	High	Moderate	Moderate
898D3:			
Hickory	Moderate	Moderate	High
Sylvan	High	Moderate	Moderate
898F2:			
Hickory	Moderate	Moderate	High
Sylvan	High	Moderate	Moderate
898F3:			
Hickory	Moderate	Moderate	High
Sylvan	High	Moderate	Moderate
898G:			
Hickory	Moderate	Moderate	High
Sylvan	High	Moderate	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
962C2:			
Sylvan	High	Moderate	Moderate
Bold	High	Low	Low
962C3:			
Sylvan	High	Moderate	Moderate
Bold	High	Low	Low
962D2:			
Sylvan	High	Moderate	Moderate
Bold	High	Low	Low
962D3:			
Sylvan	High	Moderate	Moderate
Bold	High	Low	Low
962E2:			
Sylvan	High	Moderate	Moderate
Bold	High	Low	Low
962F2:			
Sylvan	High	Moderate	Moderate
Bold	High	Low	Low
962G:			
Sylvan	High	Moderate	Moderate
Bold	High	Low	Low
965C2:			
Tallula	High	Low	Low
Bold	High	Low	Low
965D2:			
Tallula	High	Low	Low
Bold	High	Low	Low
3070A:			
Beaucoup	High	High	Moderate
3070S:			
Beaucoup	High	High	Moderate
3073A:			
Ross	Moderate	Low	Low
3074A:			
Radford	High	High	Low
3078A:			
Arenzville	High	Low	Moderate
3107A:			
Sawmill	High	High	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
3107L:			
Sawmill	High	High	Low
3107S:			
Sawmill	High	High	Low
3284A:			
Tice	High	High	Moderate
3284S:			
Tice	High	High	Low
3405A:			
Zook	High	High	Low
3451A:			
Lawson	High	High	Low
7037A:			
Worthen	High	Low	Moderate
7037B:			
Worthen	High	Low	Moderate
7081A:			
Littleton	High	High	Moderate
7148A:			
Proctor	High	Moderate	Moderate
8070A:			
Beaucoup	High	High	Moderate
8284A:			
Tice	High	High	Low
8405A:			
Zook	High	High	Low
8452A:			
Riley	High	High	Moderate

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