United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with the Illinois Agricultural Experiment Station

Soil Survey of Kane County, Illinois

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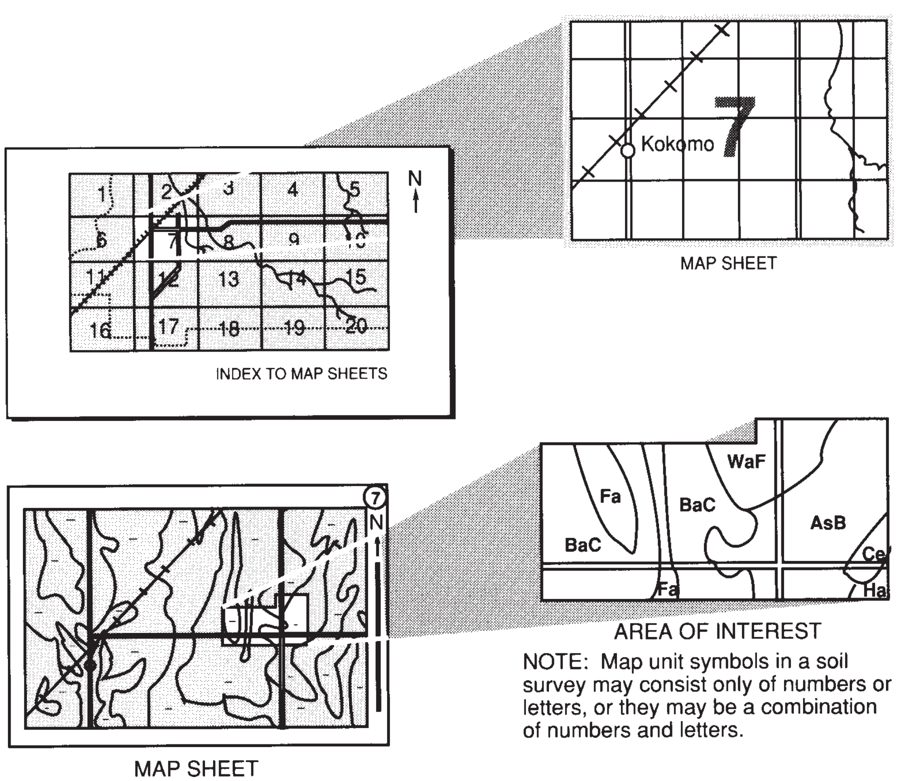
How To Use This Soil Survey

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

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

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

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



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1999. Soil names and descriptions were approved in 2000. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1999. 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 Kane-Du Page Counties Soil and Water Conservation District. The survey was partially funded by the Kane County Board and the Illinois Department of Agriculture.

Cover: Soybeans in an area of Danabrook, Octagon, and Elpaso soils. The village of Elburn is in the background.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Foreword

This soil survey contains information that affects land use planning in Kane County. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

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

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

These and many other soil properties that affect land use are described in this soil survey. The location of each soil 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.

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Soil Survey of
Kane County, Illinois

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KANE COUNTY is in northeastern Illinois (fig. 1). It has an area of 335,650 acres, or 524 square miles. In 2000, the population of the county was 404,119 (U.S. Department of Commerce, 2000). Geneva is the county seat, and Aurora is the largest city. The county is bordered by McHenry County on the north, by Du Page and Cook Counties on the east, by Kendall County on the south, and by De Kalb County on the west.

The survey area is a subset of major land resource area (MLRA) 95B, the Southern Wisconsin and Northern Illinois Drift Plain; MLRA 108, the Illinois and Iowa Deep Loess and Drift; and MLRA 110, the Northern Illinois and Indiana Heavy Till Plain (USDA, 1981).

This soil survey updates the survey of Kane County published in 1979 (Goddard, 1979). The updated survey provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the Survey Area

This section provides general information about Kane County. It describes history; urbanization; physiography, relief, and drainage; natural resources; agriculture; transportation facilities; industry; and climate.

History

Jane K. Tompkins, community planner, Kane County Development Department, helped prepare this section.

For thousands of years prior to the arrival of European settlers, Native Americans inhabited the wilderness that was to become Kane County. Area tribes include the Fox, Kickapoo, Mascouten, Illinois, and Potawatomi tribes. These tribes inhabited small villages along the Fox River and established seasonal campsites along the hills and prairies to the west.

Figure 1.—Location of Kane County in Illinois.

The first recorded settler in Kane County, Christopher Payne, established his home just east of the present city of Batavia in 1833. In the Fox River valley, homesteaders found abundant hardwood forests for building material and fuel, a river for water power, fertile farmland, and stone outcroppings for foundations and structures. Kane County was established in 1836. It was named after Elias Kent Kane (1794–1835), the first Illinois Secretary of State and a United States Senator. The original boundaries of Kane County included what is now De Kalb County and part of northern Kendall County.

Urbanization

In 1840, the population of Kane County was 6,501. By 1850, the population had increased to 16,703, which represents a growth rate of 157 percent. In fact, the greatest growth rate in Kane County's history occurred during these first few decades. In 2000, the population of Kane County was 404,119, and a population of approximately 540,000 people is forecast for the year 2020.

The historical land use pattern in the county has been higher density and compact development to the east, along the Fox River, and rural/agriculture land uses to the west. The urban corridor along the river contains approximately 80 percent of the county's residents. Land uses include mature residential neighborhoods, traditional downtowns, industrial areas, strip malls, and new subdivisions. The denser development of the urban corridor is made possible by sewer and water infrastructure in the river communities.

Physiography, Relief, and Drainage

Kane County is made up of moraines, till plains, outwash plains, stream terraces, flood plains, kames, eskers, and bogs. The county is in the Great Lake section of the Central Lowland Province (Leighton and others, 1948). Two subdivisions of this section make up the majority of the county. The northeastern one-third of the county is in the Wheaton Morainal Country, and the rest is in the Bloomington Ridged Plain.

Kane County has relatively low relief. Elevation ranges from 630 feet above sea level in the city of Montgomery to 1,065 feet above sea level in Plato Township, on Tower Road. Johnson's Mound, in the central part of the county, has an elevation of 898 feet.

Several moraines run through the county. The major moraines, from west to east, include the Elburn Complex and the Marengo, Barlina, St. Charles, and Minooka moraines.

The majority of the bottom land in the county is along Big Rock, Blackberry, Ferson, Mill, Tyler, and Welsh Creeks and the Fox River.

About 60 percent of the county is in the Fox River watershed. The major streams flow south and east into the Fox River, which eventually empties into the Illinois River. The northwestern part of the county drains north and west into the Kishwaukee River.

Natural Resources

Sand and gravel deposits and limestone quarries throughout the county provide building materials needed for construction (fig. 2). Peat and muck in Nelson Lake and Rutland Township also are excavated for commercial use. Oak and hickory groves, once abundant in the Fox River Valley, are now

Figure 2.—The opening of a new gravel pit on the north end of the Kaneville esker in an area of Waupecan silt loam, 0 to 2 percent slopes, near Kaneville.

predominantly county forest preserves, which serve as recreational areas.

The two chief sources of potable water in Kane County are the Fox River and ground water. Ground water is tapped by private and public wells from two sources—shallow aquifers, 30 to 400 feet below the surface, and deep aquifers, 600 to 2,000 feet below the surface. Shallow aquifers include sand and gravel aquifers deposited by Wisconsinan glaciers and the Silurian dolomite aquifers. These aquifers are recharged from local precipitation and surface stream in-flow. Deep aquifers, running northwest to southeast on a slope of 0.2 percent, are in Cambrian-Ordovician sandstone and Mt. Simon sandstone. Recharge areas for these aquifers are in De Kalb, McHenry, and Boone Counties and in northwestern Kane County.

Agriculture

Kane County has some of the most fertile farmland in the world. Agriculture has been the dominant land use for decades; in 1997, 63 percent of the land in the county was used for agriculture (U.S. Department of Commerce, 1997). In recent years, the market value of Kane County agricultural products has consistently exceeded $100 million per year, and over 36 percent of the county's farms generated annual sales of $100,000 or more.

Corn, soybeans, small grain, nursery, and greenhouse crops accounted for 85 percent of the market value of agricultural products sold in 1997, and livestock, poultry, and related products accounted for the remaining 15 percent. Kane County was the largest dollar producer of nursery and greenhouse crops of all Illinois counties in 1992, producing 11 percent of the state's total.

Kane County farming consists predominantly of family owned businesses. In 1990, 87 percent of the farms in the county were owned by individuals or by family corporations. Since 1945, the number of farms in Kane County has been decreasing. This decline has been counteracted, however, by a large increase in average farm size. In 1945, 2,029 farms averaging 147 acres were in the county; in 1997, the average size of the 650 farms remaining was 323 acres.

Transportation Facilities

Kane County has a well developed, multi-modal transportation system. The county is served by Illinois State Highways 47, 31, 25, 38, 64, 72, 68, and 62; U.S. Highways 20 and 30; and Illinois Tollways 88 and

90, which are part of the interstate highway system. Kane County also has a well integrated system of county highways that provide connections between incorporated and unincorporated areas.

Public transit services are available in the county. Commuter rail services connect downtown Chicago with 68 other Chicago locations, and there are lines to Aurora, Geneva, and Elgin. Fixed-route bus and other services are available in the county, including subscription bus, vanpool, and special services for people with disabilities.

Two major general aviation airports also serve the county. These are the Aurora Municipal Airport in Sugar Grove and the Du Page Airport in West Chicago. These airports serve local recreational and business flying needs; however, they do not support commercial flights or large jets.

Industry

Kane County has a strong traditional manufacturing base, which employed 26 percent of the work force in 1990. While the number of manufacturing jobs in the county has been slowly declining over the past 20 years, the decline has been more than offset by increases in the service, research, and development business sectors. Between 1980 and 1990, service jobs increased by 13 percent. The Northeastern Illinois Planning Commission forecasts that by the year 2010, service sector jobs will grow by 51 percent regionally, and manufacturing jobs will decline by 16 percent.

Kane County is home to a wide range of employment opportunities. Numerous large office and research facilities have developed along the tollway corridors. Industrial land uses are in most municipalities in the county and account for the majority of traditional manufacturing jobs. Major industrial development areas are in Aurora, Elgin, Montgomery, Geneva, and St. Charles.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Aurora College in the period 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 24.3 degrees F and the average daily minimum temperature is 15.4 degrees. The lowest temperature on record, which occurred on January 20, 1985, is -26 degrees. In summer, the average temperature is 71.4 degrees and the average daily maximum temperature is 82.8 degrees. The highest recorded temperature, which occurred on July 14, 1936, is 111 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 average annual total precipitation is 38.31 inches. Of this total, 20.36 inches, or about 53 percent, usually falls in May through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 6.91 inches on July 18, 1996.

The average seasonal snowfall is 30.8 inches. The greatest snow depth at any one time was 31 inches recorded on December 25, 1951. On the average, 49 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. The heaviest 1-day snowfall on record was 15.0 inches recorded on February 18, 1908.

The average relative humidity in midafternoon is about 59 percent. Humidity is higher at night, and the average at dawn is about 82 percent. The sun shines 67 percent of the time possible in summer and 47 percent in winter. The prevailing wind is from the west in most months, but it is from the south from June to October. Average windspeed is highest, 12 miles per hour, from January to April.

How This Survey Was Made

Soil surveys are updated as part of maintenance projects that are conducted for a major land resource area or other region. Maintaining and coordinating soil survey information within a broad area result in uniformly delineated and joined soil maps and in coordinated interpretations and map unit descriptions for areas that have similar physiography, climate, and land use.

Updated soil survey information is coordinated within the major land resource area or other region and meets the standards established and defined in the memorandum of understanding that was developed among all the cooperating agencies. Soil surveys that are consistent and uniform within a broad area enable the coordination of soil management recommendations and a uniform program application of soil information.

This survey was made to provide information about the soils and miscellaneous areas in the survey area, which is a subset of MLRAs 95B, 108, and 110. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses.

Soil scientists from the prior soil survey and the update survey observed the steepness, length, and shape of the slopes; the degree of erosion; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They made borings and dug holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material 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 of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries. After soil scientists located and identified the significant natural bodies of soil in the survey area, they then drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit.

Fieldwork in the Kane County soil survey update consisted primarily of soil transects conducted by soil scientists. Soil transects are a systematic procedure for sampling a specific soil type. Soil borings are taken at regular intervals. Soil scientists then record the characteristics of the soil profiles that they study. They note soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. This information can then be used to run statistical analyses for specific soil properties. The results of these analyses, along with other observations, enable the soil scientists to assign 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. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

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

Aerial photographs used in this update survey were taken in 1994. Soil scientists also studied U.S.

Geological Survey topographic maps and orthophotographs to relate land and image features. Adjustments of soil boundary lines on the 1979 published soil maps were made to coincide with the U.S. Geological Survey topographic map contour lines and tonal patterns on aerial photographs. Aerial photographs also show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Detailed Soil Map Units

The map units delineated 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.

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, Kidami loam, 4 to 6 percent slopes, eroded, is a phase of the Kidami series.

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

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. Casco-Rodman complex, 20 to 30 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Muskego and Houghton mucks, 0 to 2 percent slopes, is an undifferentiated group in this survey area.

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

Table 4 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.

23A—Blount silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 0.5 foot to 2.0 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (30 to 48 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Blount soil
- Soils that contain more sand in the upper one-half of the profile than the Blount soil
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The moderately well drained, clayey Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

59A—Lisbon silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Lisbon and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that do not have a subsurface layer
- Soils that contain till beginning at a depth of more than 40 inches
- Soils that contain carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

59B—Lisbon silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and footslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Lisbon and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that do not have a subsurface layer
- Soils that contain till beginning at a depth of more than 40 inches
- Soils that contain carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

60C2—La Rose loam, 5 to 10 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Till
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

La Rose and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of more than 10 inches
- Soils that contain carbonates beginning at a depth of less than 10 inches or more than 24 inches
- Soils that have slopes of less than 5 percent
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that contain less sand and more silt in the till than the La Rose soil

Dissimilar soils:
- The somewhat poorly drained Lisbon soils on footslopes and summits
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

60D2—La Rose loam, 10 to 18 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Till
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

La Rose and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of more than 10 inches
- Soils that contain carbonates beginning at a depth of less than 10 inches or more than 24 inches
- Soils that have slopes of less than 10 percent
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that contain less sand and more silt in the till than the La Rose soil

Dissimilar soils:
- The somewhat poorly drained Lisbon soils on footslopes and summits
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

62A—Herbert silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess or silty material and the underlying till
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 0.5 foot to 2.0 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Herbert and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of more than 40 inches
- Soils that contain carbonates beginning at a depth of more than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have a darker subsurface layer than that of the Herbert soil

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

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

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Calcareous loess or other silty material over drift
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain loamy drift at a depth of less than 36 inches
- Soils in which the upper part of the subsoil is darker than that of the Harpster soil
- Soils that do not contain carbonates at or near the surface

Dissimilar soils:
- The noncalcareous, poorly drained Drummer soils on toeslopes
- The somewhat poorly drained Flanagan soils on footslopes and summits
- The very poorly drained, organic Houghton soils on the slightly lower toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

69A—Milford silty clay loam, 0 to 2 percent slopes

Setting

Landform: Lake plains
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Lacustrine deposits
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderately slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain less clay and more silt in the subsoil than the Milford soil
- Soils that do not have a subsurface layer and are lighter colored in the upper part of the subsoil than the Milford soil
- Soils that contain more gravel than the Milford soil

Dissimilar soils:
- Somewhat poorly drained soils on footslopes and summits
- The very poorly drained Houghton soils on the slightly lower toeslopes

Management

For general and detailed information about

managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

103A—Houghton muck, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Herbaceous organic material
Drainage class: Very poorly drained
Seasonal high water table: 1 foot above to 1 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain less organic matter in the surface layer than the Houghton soil
- Soils that have organic deposits less than 51 inches thick

Dissimilar soils:
- The poorly drained Drummer soils on the slightly higher toeslopes
- The very poorly drained, calcareous Lena soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 3w
Prime farmland status: Not prime farmland
Hydric soil status: Hydric soil

104A—Virgil silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess and the underlying outwash
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 0.5 foot to 2.0 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain till in the lower part of the profile
- Soils that have a darker subsurface layer than that of the Virgil soil
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 45 inches
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The well drained Harvard soils on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland where drained
Hydric soil status: Nonhydric soil

125A—Selma loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Outwash
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain less sand and more silt in the upper two-thirds of the profile than the Selma soil
- Soils that do not have a subsurface layer
- Soils that contain less clay in the subsoil than the Selma soil
- Soils that contain more gravel in the lower part of the profile than the Selma soil

Dissimilar soils:
- Somewhat poorly drained soils on footslopes
- The poorly drained, calcareous Kish soils on toeslopes
- The very poorly drained Houghton soils on the slightly lower toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

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

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Camden and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that contain sandy and gravelly outwash in the lower part of the profile
- Soils that have slopes of less than 5 percent

Dissimilar soils:
- The somewhat poorly drained Millbrook soils on summits and footslopes
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

146A—Elliott silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (20 to 45 inches)
Permeability: Moderately slow in the upper part; slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have a thinner subsurface layer than that of the Elliott soil
- Soils that contain more sand in the upper one-half of the profile than the Elliott soil
- Soils that contain less clay and more silt in the upper one-half of the profile than the Elliott soil
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The clayey Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

146B—Elliott silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and footslopes

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Thin mantle of loess or other silty material and the underlying till
Seasonal high water table: At a depth of 1 to 2 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (20 to 45 inches)
Permeability: Moderately slow in the upper part; slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that contain more sand in the upper one-half of the profile than the Elliott soil
- Soils that have a thinner subsurface layer than that of the Elliott soil
- Soils that are moderately eroded
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that contain less clay and more silt in the upper one-half of the profile than the Elliott soil

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The clayey Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

148B—Proctor silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess or other silty material and the underlying outwash
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thinner surface layer than that of the Proctor soil
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The somewhat poorly drained Brenton soils on summits and footslopes
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

149A—Brenton silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that do not have a subsurface layer
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain sandy and gravelly deposits in the lower part of the profile
- Soils that contain loamy outwash beginning at a depth of less than 24 inches or more than 40 inches
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The well drained Proctor soils on summits

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

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

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Loess or silty material and the underlying outwash
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thicker surface layer and subsurface layer than those of the Drummer soil
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that are overlain by recent, light-colored deposition

Dissimilar soils:
- The very poorly drained Houghton soils on the slightly lower toeslopes
- The somewhat poorly drained Elburn soils on summits and footslopes
- The poorly drained, calcareous Harpster soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

154A—Flanagan silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess and the underlying till
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Flanagan and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that contain less clay and more silt in the subsoil than the Flanagan soil
- Soils that do not have a subsurface layer
- Soils that contain carbonates at a depth of less than 45 inches
- Soils that contain till beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”

- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

171A—Catlin silt loam, 0 to 2 percent slopes

Setting

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

Soil Properties and Qualities

Parent material: Loess and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thinner surface layer than that of the Catlin soil
- Soils that contain till beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

171B—Catlin silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Catlin and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a thinner surface layer than that of the Catlin soil
- Soils that contain till beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

193A—Mayville silt loam, 0 to 2 percent slopes

Setting

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

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a thicker and darker surface layer than that of the Mayville soil
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

193B—Mayville silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Mayville and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a thicker and darker surface layer than that of the Mayville soil
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture” (fig. 3)
- “Forestland”
- “Wildlife Habitat”

Figure 3.—A nursery in an area of Mayville silt loam, 2 to 5 percent slopes.

- "Engineering"
- "Soil Properties"

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

193C2—Mayville silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Mayville and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a thicker and darker surface layer than that of the Mayville soil
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 5 percent

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

- The somewhat poorly drained Herbert soils on footslopes and summits

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

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

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess and the underlying outwash
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Elburn and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that do not have a subsurface layer
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The poorly drained Drummer and Thorp soils on toeslopes
- Well drained soils on summits

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

206A—Thorp silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Loess and the underlying outwash
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thinner surface layer than that of the Thorp soil
- Soils that have a darker subsurface layer than that of the Thorp soil
- Soils that contain till in the lower part of the profile
- Soils that contain carbonates at a depth of less than 40 inches

Dissimilar soils:
- The moderately well drained Blackberry soils on summits
- The somewhat poorly drained Elburn soils on summits and footslopes

Management

For general and detailed information about

managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

210A—Lena muck, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Herbaceous organic material
Drainage class: Very poorly drained
Seasonal high water table: 1 foot above to 1 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderately rapid

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have organic deposits less than 51 inches thick
- Soils that have less organic matter in the surface layer than the Lena soil

Dissimilar soils:
- The very poorly drained, noncalcareous Houghton soils on toeslopes
- The poorly drained Harpster soils on the slightly higher toeslopes
- The poorly drained, noncalcareous Drummer soils on the slightly higher toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 3w
Prime farmland status: Not prime farmland
Hydric soil status: Hydric soil

219A—Millbrook silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 0.5 foot to 2.0 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have a darker subsurface layer than that of the Millbrook soil
- Soils that contain more gravel in the lower part of the profile than the Millbrook soil
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates at a depth of less than 40 inches

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The well drained Harvard soils on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”

- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland where drained
Hydric soil status: Nonhydric soil

221B—Parr silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Parr and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that contain carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain less sand and more silt in the till than the Parr soil
- Soils that contain till beginning at a depth of more than 18 inches

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

221B2—Parr silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Parr and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that are slightly eroded
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that contain carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain till beginning at a depth of more than 18 inches
- Soils that contain less sand and more silt in the till than the Parr soil

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

221C2—Parr silt loam, 5 to 10 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have slopes of less than 5 percent
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that contain carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain till beginning at a depth of more than 18 inches
- Soils that contain less sand and more silt in the till than the Parr soil

Dissimilar soils:
- The somewhat poorly drained Lisbon soils on summits and footslopes
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

223B—Varna silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (24 to 60 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that contain more sand in the upper one-half of the profile than the Varna soil
- Soils that contain less clay in the subsoil than the Varna soil
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of more than 4 percent

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The clayey Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

223C2—Varna silt loam, 4 to 6 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (24 to 60 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are severely eroded
- Soils that contain more sand in the upper one-half of the profile than the Varna soil
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that contain less clay in the subsoil than the Varna soil

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The somewhat poorly drained Elliott soils on summits and footslopes
- Moderately well drained, calcareous soils on backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

232A—Ashkum silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Colluvium and the underlying till
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderately slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that do not have a subsurface layer
- Soils that contain less clay in the subsoil than the Ashkum soil
- Soils that are overlain by recent, light-colored deposition

Dissimilar soils:
- The somewhat poorly drained Elliott soils on summits and footslopes
- The moderately well drained Varna soils on summits and backslopes
- The very poorly drained Houghton soils on the slightly lower toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

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

233A—Birkbeck silt loam, 0 to 2 percent slopes

Setting

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

Soil Properties and Qualities

Parent material: Loess and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker subsurface layer than that of the Birkbeck soil
- Soils that have a seasonal high water table at a depth of less than 2 feet
- Soils that contain till beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

233B—Birkbeck silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Birkbeck and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a darker subsurface layer than that of the Birkbeck soil
- Soils that have a seasonal high water table at a depth of less than 2 feet
- Soils that contain till beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

233C2—Birkbeck silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loess and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Birkbeck and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a darker subsurface layer than that of the Birkbeck soil
- Soils that contain till beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till

Dissimilar soils:
- The somewhat poorly drained Sabina soils on summits and footslopes
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

236A—Sabina silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess and the underlying till
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 0.5 foot to 2.0 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderately slow

Map Unit Composition

Sabina and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker and darker surface layer than that of the Sabina soil
- Soils that contain less clay and more silt in the subsoil than the Sabina soil
- Soils that contain till beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that contain carbonates at a depth of less than 40 inches

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

242A—Kendall silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess and the underlying outwash
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 0.5 foot to 2.0 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Kendall and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that contain till in the lower part of the profile
- Soils that have a darker surface layer than that of the Kendall soil
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The well drained Camden soils on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

290A—Warsaw loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains, stream terraces, and kames
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain till in the lower part of the profile
- Soils that have a thinner subsurface layer than that of the Warsaw soil and are lighter colored in the upper part of the subsoil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that contain less sand and more silt in the upper one-half of the profile than the Warsaw soil
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The somewhat poorly drained Kane soils on footslopes and summits
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2s
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

290B—Warsaw loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains, stream terraces, and kames
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain till in the lower part of the profile
- Soils that have a thinner subsurface layer than that of the Warsaw soil and are lighter colored in the upper part of the subsoil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that contain less sand and more silt in the upper one-half of the profile than the Warsaw soil
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The somewhat poorly drained Kane soils on footslopes and summits
- The excessively drained Rodman soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

297B—Ringwood silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that do not have a subsurface layer
- Soils that contain less sand and more silt in the upper one-half of the profile than the Ringwood soil
- Soils that contain more clay in the lower part of the profile than the Ringwood soil
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have slopes of less than 2 percent

Dissimilar soils:
- The somewhat poorly drained Elburn soils on toeslopes
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

298A—Beecher silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 0.5 foot to 2.0 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (24 to 45 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a lighter colored surface layer than that of the Beecher soil
- Soils that have a thicker surface layer than that of the Beecher soil
- Soils that contain more sand in the upper one-half of the profile than the Beecher soil
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The moderately well drained, clayey Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

298B—Beecher silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and footslopes

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Thin mantle of loess or other silty material and the underlying till
Seasonal high water table: At a depth of 0.5 foot to 2.0 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (24 to 45 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a lighter colored surface layer than that of the Beecher soil
- Soils that have a thicker surface layer than that of the Beecher soil
- Soils that are moderately eroded
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that contain more sand in the upper one-half of the profile than the Beecher soil

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The moderately well drained, clayey Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”

- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

318A—Lorenzo loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a lighter colored surface layer than that of the Lorenzo soil
- Soils that contain sandy and gravelly deposits beginning at a depth of more than 24 inches
- Soils that have slopes of more than 2 percent
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The somewhat poorly drained Kane soils on footslopes and summits
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

318B—Lorenzo loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that have a lighter colored surface layer than that of the Lorenzo soil
- Soils that contain sandy and gravelly deposits beginning at a depth of more than 24 inches
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The somewhat poorly drained Kane soils on footslopes and summits
- The excessively drained Rodman soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”

- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

318C2—Lorenzo loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a lighter colored surface layer than that of the Lorenzo soil
- Soils that contain sandy and gravelly deposits beginning at a depth of more than 24 inches
- Soils that contain carbonates beginning at a depth of less than 12 inches or more than 24 inches
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The excessively drained Rodman soils on shoulders and backslopes
- The somewhat poorly drained Kane soils on footslopes and summits
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

318D2—Lorenzo loam, 6 to 12 percent slopes, eroded

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain carbonates beginning at a depth of less than 12 inches or more than 24 inches
- Soils that have a lighter colored surface layer than that of the Lorenzo soil
- Soils that contain sandy and gravelly deposits beginning at a depth of more than 24 inches
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The excessively drained Rodman soils on shoulders and backslopes
- The somewhat poorly Kane soils on footslopes and summits
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

323C2—Casco loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat excessively drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are severely eroded
- Soils that contain sandy and gravelly deposits beginning at a depth of more than 20 inches
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have a darker surface layer than that of the Casco soil
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The excessively drained Rodman soils on shoulders and backslopes
- The somewhat poorly drained Kane soils on summits and footslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

323D2—Casco loam, 6 to 12 percent slopes, eroded

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat excessively drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are severely eroded
- Soils that contain sandy and gravelly deposits beginning at a depth of more than 20 inches
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The excessively drained Rodman soils on shoulders and backslopes
- The somewhat poorly drained Kane soils on summits and footslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

325A—Dresden silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a lighter colored surface layer than that of the Dresden soil
- Soils that have a thicker surface layer than that of the Dresden soil
- Soils that contain less sand and more silt in the upper one-half of the profile than the Dresden soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2s
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

325B—Dresden silt loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains, stream terraces, and kames
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a lighter colored surface layer than that of the Dresden soil
- Soils that have a thicker surface layer than that of the Dresden soil
- Soils that contain less sand and more silt in the middle part of the subsoil than the Dresden soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- The excessively drained Rodman soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

325C2—Dresden silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains, stream terraces, and kames
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a lighter colored surface layer than that of the Dresden soil
- Soils that have slopes of less than 4 percent
- Soils that contain less sand and more silt in the middle part of the subsoil than the Dresden soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- The excessively drained Rodman soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

327A—Fox silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Fox soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain less sand and more silt in the lower one-half of the subsoil than the Fox soil
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2s
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

327B—Fox silt loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Fox soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain less sand and more silt in the middle part of the subsoil than the Fox soil
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The somewhat poorly drained Kane soils on footslopes and summits
- The excessively drained Rodman soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

327C2—Fox silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Fox soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain less sand and more silt in the lower one-half of the profile than the Fox soil
- Soils that contain till in the lower part of the profile
- Soils that have slopes of less than 4 percent or more than 6 percent

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- The excessively drained Rodman soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

327D2—Fox loam, 6 to 12 percent slopes, eroded

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Fox soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain less sand and more silt in the lower one-half of the subsoil than the Fox soil
- Soils that contain till in the lower part of the profile
- Soils that have slopes of less than 6 percent or more than 12 percent

Dissimilar soils:
- The excessively drained Rodman soils on shoulders and backslopes

- The somewhat poorly drained Kane soils on summits and footslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

329A—Will loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains, stream terraces, and kames
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain less sand and more silt in the upper one-half of the profile than the Will soil
- Soils that do not have a subsurface layer

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- The poorly drained, calcareous Hooppole soils on toeslopes
- The very poorly drained Houghton soils on the slightly lower toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

330A—Peotone silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Colluvium
Drainage class: Very poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderately slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are lighter colored in the upper one-half of the subsoil than the Peotone soil
- Soils that contain less clay in the subsurface layers and subsoil than the Peotone soil
- Soils that are overlain by recent, light-colored deposition

Dissimilar soils:
• The somewhat poorly drained Flanagan soils on summits and footslopes
• The very poorly drained, organic Houghton soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• “Crops and Pasture”
• “Wildlife Habitat”
• “Engineering”
• “Soil Properties”

Interpretive Groups

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

343A—Kane silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains, stream terraces, and kames
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
• Soils that have a thinner subsurface layer than that of the Kane soil
• Soils that contain sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
• Soils that contain less sand and more silt in the subsoil than the Kane soil

Dissimilar soils:
• The well drained Warsaw soils on summits
• The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• “Crops and Pasture”
• “Wildlife Habitat”
• “Engineering”
• “Soil Properties”

Interpretive Groups

Land capability classification: 2s
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

344C2—Harvard silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loess or silty material and the underlying outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Harvard and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
• Soils that have a lighter colored surface layer than that of the Harvard soil
• Soils that contain outwash beginning at a depth of more than 40 inches
• Soils that contain carbonates at a depth of less than 40 inches

• Soils that have a seasonal high water table at a depth of less than 6 feet
• Soils that have slopes of less than 5 percent

Dissimilar soils:
• The somewhat poorly drained Millbrook soils on footslopes and summits
• The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• "Crops and Pasture"
• "Forestland"
• "Wildlife Habitat"
• "Engineering"
• "Soil Properties"

Interpretive Groups

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

348B—Wingate silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
• Soils that have a thicker surface layer than that of the Wingate soil
• Soils that contain till beginning at a depth of more than 40 inches
• Soils that contain a zone of glaciofluvial deposits above the till
• Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
• The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• "Crops and Pasture"
• "Forestland"
• "Wildlife Habitat"
• "Engineering"
• "Soil Properties"

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

348C2—Wingate silt loam, 5 to 10 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Wingate and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
• Soils that contain till beginning at a depth of more than 40 inches
• Soils that contain a zone of glaciofluvial deposits above the till

- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 5 percent

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes
- The somewhat poorly drained Herbert soils on summits and footslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

356A—Elpaso silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Loess or silty material and the underlying till
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 35 inches
- Soils that contain a zone of glaciofluvial deposits above the till
- Soils that are overlain by recent, light-colored deposition

Dissimilar soils:
- The somewhat poorly drained Flanagan soils on summits and footslopes
- The moderately well drained Danabrook soils on summits
- The poorly drained, calcareous Harpster soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

361B—Kidder loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Till
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Kidder soil
- Soils that are moderately eroded

• Soils that contain less sand and more silt in the upper part of the subsoil than the Kidder soil
• Soils that contain more clay in the lower part of the profile than the Kidder soil

Dissimilar soils:
• The somewhat poorly drained Virgil soils on footslopes and summits
• The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• “Crops and Pasture”
• “Forestland”
• “Wildlife Habitat”
• “Engineering”
• “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

361C2—Kidder loam, 4 to 6 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Till
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately rapid in the lower part

Map Unit Composition

Kidder and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
• Soils that are severely eroded
• Soils that have slopes of less than 4 percent or more than 6 percent
• Soils that contain more clay in the lower part of the profile than the Kidder soil
• Soils that contain less sand and more silt in the upper part of the subsoil than the Kidder soil

Dissimilar soils:
• The somewhat poorly drained Virgil soils on footslopes and summits
• The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• “Crops and Pasture”
• “Forestland”
• “Wildlife Habitat”
• “Engineering”
• “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

361D2—Kidder loam, 6 to 12 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Till
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Kidder and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
• Soils that are severely eroded
• Soils that have slopes of less than 6 percent or more than 12 percent

• Soils that contain more clay in the lower part of the profile than the Kidder soil
• Soils that contain less sand and more silt in the upper part of the subsoil than the Kidder soil

Dissimilar soils:
• The somewhat poorly drained Virgil soils on footslopes and summits
• The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• "Crops and Pasture"
• "Forestland"
• "Wildlife Habitat"
• "Engineering"
• "Soil Properties"

Interpretive Groups

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

361E2—Kidder loam, 12 to 20 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Soil Properties and Qualities

Parent material: Till
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Kidder and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
• Soils that are severely eroded
• Soils that have slopes of less than 12 percent or more than 20 percent

• Soils that contain more clay in the lower part of the profile than the Kidder soil
• Soils that contain less sand and more silt in the upper part of the subsoil than the Kidder soil

Dissimilar soils:
• The somewhat poorly drained Virgil soils on footslopes and summits
• The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• "Crops and Pasture"
• "Forestland"
• "Wildlife Habitat"
• "Engineering"
• "Soil Properties"

Interpretive Groups

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

369A—Waupecan silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
• Soils that contain sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches

• Soils that have a seasonal high water table at a depth of less than 6 feet
• Soils that do not have a subsurface layer
• Soils that contain more sand in the upper and middle parts of the subsoil than the Waupecan soil

Dissimilar soils:
• The somewhat poorly drained Grundelein soils on summits and footslopes
• The poorly drained Dunham soils on toeslopes
• The well drained Lorenzo soils, which are shallow to sand and gravel; on summits

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• “Crops and Pasture”
• “Wildlife Habitat”
• “Engineering”
• “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

369B—Waupecan silt loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
• Soils that contain sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches
• Soils that have slopes of less than 2 percent
• Soils that do not have a subsurface layer
• Soils that have a seasonal high water table at a depth of less than 6 feet
• Soils that contain more sand in the upper and middle parts of the subsoil than the Waupecan soil

Dissimilar soils:
• The somewhat poorly drained Grundelein soils on summits and footslopes
• The poorly drained Dunham soils on toeslopes
• The well drained Lorenzo soils, which are shallow to sand and gravel; on summits

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• “Crops and Pasture”
• “Wildlife Habitat”
• “Engineering”
• “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

442A—Mundelein silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that do not have a subsurface layer
- Soils that contain carbonates beginning at a depth of more than 40 inches
- Soils that contain sandy and gravelly deposits in the lower part of the profile
- Soils that contain loamy outwash beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The well drained, loamy Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

488A—Hooppole loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Calcareous outwash
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain less sand and more silt in the upper one-half of the profile than the Hooppole soil
- Soils that contain more gravel in the lower part of the profile than the Hooppole soil
- Soils that do not have a subsurface layer

Dissimilar soils:
- The poorly drained, noncalcareous Selmass soils on toeslopes
- Somewhat poorly drained, noncalcareous soils on footslopes and summits
- The very poorly drained, organic Lena soils on the slightly lower toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

512A—Danabrook silt loam, 0 to 2 percent slopes

Setting

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

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that do not have a subsurface layer
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that contain till beginning at a depth of more than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

512B—Danabrook silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have slopes of less than 2 percent
- Soils that do not have a subsurface layer
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that contain till beginning at a depth of less than 22 inches or more than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

512C2—Danabrook silt loam, 5 to 10 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Danabrook and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have slopes of less than 5 percent
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that contain till beginning at a depth of less than 22 inches or more than 40 inches
- Soils that contain a zone of glaciofluvial deposits above the till

Dissimilar soils:
- The somewhat poorly drained Lisbon soils on summits and footslopes
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

523A—Dunham silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thinner subsurface layer than that of the Dunham soil
- Soils that contain more sand in the upper one-half of the profile than the Dunham soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 32 inches or more than 55 inches
- Soils that contain carbonates beginning at a depth of more than 50 inches

Dissimilar soils:
- The somewhat poorly drained Grundelein soils on summits and footslopes
- The well drained Waupecan soils on summits
- The very poorly drained Houghton soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

526A—Grundelein silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that do not have a subsurface layer
- Soils that contain more sand in the upper one-half of the profile than the Grundelein soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 32 inches or more than 50 inches
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Dunham soils on toeslopes
- The well drained Waupecan soils on summits

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Wildlife Habitat"
- "Engineering"
- "Soil Properties"

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

527B—Kidami silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker and thicker surface layer than that of the Kidami soil
- Soils that contain till beginning at a depth of more than 18 inches
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that contain carbonates at a depth of less than 20 inches
- Soils that have slopes of less than 2 percent
- Soils that contain less sand and more silt in the till than the Kidami soil

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes
- The well drained Fox soils, which are moderately deep to sandy and gravelly outwash; on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland"
- "Wildlife Habitat"
- "Engineering"
- "Soil Properties"

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

527C2—Kidami loam, 4 to 6 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Till
Drainage class: Moderately well drained

Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of more than 18 inches
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that contain carbonates at a depth of less than 20 inches
- Soils that have slopes of less than 4 percent
- Soils that contain less sand and more silt in the till than the Kidami soil

Dissimilar soils:
- The somewhat poorly drained Herbert soils on footslopes and summits
- The poorly drained Elpaso soils on toeslopes
- The well drained Fox soils, which are moderately deep to sandy and gravelly outwash; on shoulders and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture” (fig. 4)
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

527D2—Kidami loam, 6 to 12 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain till at a depth of more than 18 inches
- Soils that are severely eroded
- Soils that contain carbonates at a depth of less than 20 inches
- Soils that have slopes of less than 6 percent
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that contain less sand and more silt in the till than the Kidami soil

Dissimilar soils:
- The somewhat poorly drained Herbert soils on summits and footslopes
- The well drained Fox soils, which are moderately deep to sandy and gravelly outwash; on shoulders and backslopes
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

Figure 4.—Corn in an area of Kidami loam, 4 to 6 percent slopes, eroded.

527D3—Kidami clay loam, 6 to 12 percent slopes, severely eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that contain carbonates at a depth of less than 20 inches
- Soils that have seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that contain less sand and more silt in the till than the Kidami soil

Dissimilar soils:
- The well drained Fox soils, which are moderately

deep to sandy and gravelly outwash; on shoulders and backslopes
- The somewhat poorly drained Herbert soils on summits and footslopes
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

529A—Selmass loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Outwash
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain less sand and more silt in the upper and middle parts of the profile than the Selmass soil
- Soils that contain less clay in the subsoil than the Selmass soil
- Soils that contain sandy outwash at a depth of less than 35 inches
- Soils that have a thinner subsurface layer than that of the Selmass soil
- Soils that contain more gravel in the lower part of the profile than the Selmass soil

Dissimilar soils:
- Somewhat poorly drained soils on footslopes
- The poorly drained, calcareous Hooppole soils on toeslopes
- The very poorly drained Houghton soils on the slightly lower toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

530B—Ozaukee silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (20 to 45 inches)
Permeability: Slow

Map Unit Composition

Ozaukee and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that contain more sand and less clay in the upper one-half of the profile than the Ozaukee soil

- Soils that have a thicker, darker surface layer than that of the Ozaukee soil
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that contain more sand and less silt in the lower part of the profile than the Ozaukee soil

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The moderately well drained, clayey Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

530C2—Ozaukee silt loam, 4 to 6 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (20 to 45 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thicker, darker surface layer than that of the Ozaukee soil
- Soils that contain more sand and less clay in the upper one-half of the profile than the Ozaukee soil
- Soils that are severely eroded
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that contain more sand and less silt in the lower part of the profile than the Ozaukee soil

Dissimilar soils:
- The somewhat poorly drained Blount soils on footslopes and summits
- The poorly drained Ashkum soils on toeslopes
- Moderately well drained, calcareous soils on backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

530D2—Ozaukee silt loam, 6 to 12 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None

Depth to restrictive feature: Moderately deep or deep (20 to 45 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that contain more sand and less clay in the upper one-half of the profile than the Ozaukee soil
- Soils that are severely eroded
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that contain more sand and less silt in the lower part of the profile than the Ozaukee soil

Dissimilar soils:
- The somewhat poorly drained Blount soils on footslopes and summits
- Moderately well drained, calcareous soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

530E—Ozaukee silt loam, 12 to 20 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (20 to 45 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that contain more sand and less clay in the upper one-half of the profile than the Ozaukee soil
- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that contain more sand and less silt in the lower part of the profile than the Ozaukee soil
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet

Dissimilar soils:
- The somewhat poorly drained Blount soils on footslopes and summits
- Moderately well drained, calcareous soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

531B—Markham silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (20 to 55 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Markham soil
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that contain more sand and less clay in the upper one-half of the profile than the Markham soil
- Soils that have a lighter colored surface layer than that of the Markham soil
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The moderately well drained, clayey Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

531C2—Markham silt loam, 4 to 6 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Moderately deep or deep (20 to 55 inches)
Permeability: Slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have a thicker surface layer than that of the Markham soil
- Soils that contain more sand and less clay in the upper one-half of the profile than the Markham soil
- Soils that have a lighter colored surface layer than that of the Markham soil
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The somewhat poorly drained Beecher soils on footslopes and summits
- The moderately well drained, clayey Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

541B—Graymont silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that do not have a subsurface layer
- Soils that contain till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain more sand in the upper one-half of the profile than the Graymont soil
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 2 percent or more than 5 percent

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

570B—Martinsville silt loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Martinsville and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Martinsville soil
- Soils that have slopes of less than 2 percent
- Soils that contain till in the lower part of the profile
- Soils that contain less clay in the subsoil than the Martinsville soil
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The well drained Fox soils, which are moderately deep to sandy and gravelly outwash; on summits and backslopes
- Somewhat poorly drained soils on footslopes and summits
- The poorly drained Selma soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

570C2—Martinsville silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Martinsville and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that contain till in the lower part of the profile
- Soils that contain less clay in the subsoil than the Martinsville soil
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The well drained Fox soils, which are moderately deep to sandy and gravelly outwash; on shoulders and backslopes
- Somewhat poorly drained soils on footslopes and summits
- The poorly drained Selma soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

614A—Chenoa silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Seasonal high water table: At a depth of 1 to 2 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thinner surface layer than that of the Chenoa soil
- Soils that contain till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain more silt and less clay in the subsoil than the Chenoa soil
- Soils that contain more sand in the upper one-half of the profile than the Chenoa soil
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”

- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

618E—Senachwine silt loam, 12 to 20 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that contain carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that contain less sand and more silt in the till than the Senachwine soil

Dissimilar soils:
- The somewhat excessively drained Casco soils on backslopes
- The poorly drained Elpaso soils on toeslopes
- The somewhat poorly drained Herbert soils on footslopes and summits

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

618F—Senachwine silt loam, 20 to 30 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that contain carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have slopes of less than 20 percent or more than 30 percent
- Soils that contain less sand and more silt in the till than the Senachwine soil

Dissimilar soils:
- The somewhat excessively drained Casco soils on backslopes
- The poorly drained Elpaso soils on toeslopes
- The somewhat poorly drained Herbert soils on footslopes and summits

Management

For general and detailed information about

managing this map unit, see the following sections of this publication:

- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

626A—Kish loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains, stream terraces, and ground moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Calcareous outwash
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thinner subsurface layer than that of the Kish soil
- Soils that contain less sand and more silt in the upper and middle parts of the profile than the Kish soil
- Soils that contain more gravel in the lower part of the profile than the Kish soil
- Soils that contain sandy outwash in the lower part of the profile

Dissimilar soils:
- The poorly drained, noncalcareous Selma soils on toeslopes
- Somewhat poorly drained, noncalcareous soils on footslopes and summits
- The very poorly drained Lena soils on the slightly lower toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

656B—Octagon silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Octagon and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Octagon soil
- Soils that contain till beginning at a depth of more than 18 inches
- Soils that contain carbonates beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have a lighter colored surface layer than that of the Octagon soil

- Soils that contain less sand and more silt in the till than the Octagon soil

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

656C2—Octagon silt loam, 4 to 6 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Octagon and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of more than 18 inches
- Soils that contain carbonates beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 4 percent
- Soils that have a lighter colored surface layer than that of the Octagon soil
- Soils that contain less sand and more silt in the till than the Octagon soil

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes
- The somewhat poorly drained Herbert soils on summits and footslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

656D2—Octagon silt loam, 6 to 12 percent slopes, eroded

Setting

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

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; moderately slow in the lower part

Map Unit Composition

Octagon and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain till beginning at a depth of more than 18 inches

- Soils that contain carbonates beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 6 percent
- Soils that have a lighter colored surface layer than that of the Octagon soil
- Soils that contain less sand and more silt in the till than the Octagon soil

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes
- The somewhat poorly drained Herbert soils on summits and footslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

662A—Barony silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Barony and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Barony soil
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

662B—Barony silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Barony and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Barony soil
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have slopes of more than 5 percent
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

663A—Clare silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Clare and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thinner subsurface layer than that of the Clare soil
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

663B—Clare silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Clare and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thinner subsurface layer than that of the Clare soil
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

667A—Kaneville silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loess and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Kaneville and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Kaneville soil
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

667B—Kaneville silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or silty material and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Kaneville and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Kaneville soil
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

668A—Somonauk silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Somonauk and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker and darker surface layer than that of the Somonauk soil
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

668B—Somonauk silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Somonauk and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker and darker surface layer than that of the Somonauk soil
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 2 percent

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

679A—Blackberry silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loess and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Blackberry and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have a thinner subsurface layer than that of the Blackberry soil

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

679B—Blackberry silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Blackberry and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have a thinner subsurface layer than that of the Blackberry soil

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

680A—Campton silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loess and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Campton and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Campton soil
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

680B—Campton silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or silty material and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Campton and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Campton soil
- Soils that contain outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain carbonates at a depth of less than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

696B—Zurich silt loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

Zurich and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a thicker surface layer than that of the Zurich soil
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The loamy Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

697A—Wauconda silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and footslopes

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess or other silty material and the underlying outwash
Seasonal high water table: At a depth of 0.5 foot to 2.0 feet (apparent)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain outwash beginning at a depth of more than 40 inches
- Soils that contain carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that contain till in the lower part of the profile
- Soils that have a darker subsurface layer than that of the Wauconda soil
- Soils that have a lighter colored surface layer than that of the Wauconda soil
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The well drained, loamy Orthents on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland where drained
Hydric soil status: Nonhydric soil

739B—Milton silt loam, 2 to 6 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till and residuum derived from dolostone
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Moderately deep (20 to 40 inches)
Permeability: Moderately slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Milton soil
- Soils that contain less clay and more silt in the subsoil than the Milton soil
- Soils that contain bedrock beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The moderately well drained Ozaukee soils on shoulders and backslopes
- The well drained, loamy Orthents on summits and backslopes
- The poorly drained Otter soils on flood plains
- The excessively drained Rodman soils on backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

739D—Milton silt loam, 6 to 12 percent slopes

Setting

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

Soil Properties and Qualities

Parent material: Thin mantle of loess or other silty material and the underlying till and residuum derived from dolostone

Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Moderately deep (20 to 40 inches) (fig. 5)
Permeability: Moderately slow

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Milton soil
- Soils that contain less clay and more silt in the subsoil than the Milton soil
- Soils that contain bedrock beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have slopes of less than 6 percent

Dissimilar soils:
- The moderately well drained Ozaukee soils on shoulders and backslopes
- The well drained, loamy Orthents on backslopes
- The poorly drained Otter soils on flood plains
- The excessively drained Rodman soils on backslopes

Figure 5.—A limestone exposure along the Fox River Trail in an area of Milton silt loam, 6 to 12 percent slopes.

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

791A—Rush silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thicker dark surface layer than that of the Rush soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that contain more sand in the upper and middle parts of the subsoil than the Rush soil

Dissimilar soils:
- The somewhat poorly drained Grundelein soils on summits and footslopes
- The somewhat excessively drained Casco soils on summits and backslopes
- The poorly drained Dunham soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

791B—Rush silt loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thicker dark surface layer than that of the Rush soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have slopes of less than 2 percent
- Soils that contain more sand in the upper and middle parts of the subsoil than the Rush soil

Dissimilar soils:
- The somewhat poorly drained Grundelein soils on summits and footslopes
- The somewhat excessively drained Casco soils on summits and backslopes
- The poorly drained Dunham soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

791C2—Rush silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thicker dark surface layer than that of the Rush soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain more sand in the upper and middle parts of the subsoil than the Rush soil
- Soils that have slopes of less than 4 percent or more than 6 percent

Dissimilar soils:
- The somewhat poorly drained Grundelein soils on summits and footslopes
- The somewhat excessively drained Casco soils on shoulders and backslopes
- The poorly drained Dunham soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Not prime farmland
Hydric soil status: Nonhydric soil

792A—Bowes silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker subsurface layer than that of the Bowes soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that contain more sand in the upper and middle parts of the subsoil than the Bowes soil

Dissimilar soils:
- The somewhat poorly drained Grundelein soils on summits and footslopes
- The poorly drained Dunham soils on toeslopes
- The well drained Lorenzo soils, which are shallow to sandy and gravelly outwash; on summits

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

792B—Bowes silt loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None

Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a darker subsurface layer than that of the Bowes soil
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have slopes of less than 2 percent
- Soils that contain more sand in the upper and middle parts of the subsoil than the Bowes soil

Dissimilar soils:
- The somewhat poorly drained Grundelein soils on summits and footslopes
- The poorly drained Dunham soils on toeslopes
- The well drained Lorenzo soils, which are shallow to sandy and gravelly outwash; on summits and backslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

792C2—Bowes silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Shoulders and backslopes

Soil Properties and Qualities

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate in the upper part; very rapid in the lower part

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have slopes of less than 4 percent
- Soils that contain more sand in the upper and middle parts of the subsoil than the Bowes soil
- Soils that have a lighter colored surface layer than that of the Bowes soil

Dissimilar soils:
- The somewhat poorly drained Grundelein soils on summits and footslopes
- The well drained Lorenzo soils, which are shallow to sandy and gravelly outwash; on shoulders and backslopes
- The poorly drained Dunham soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Nonhydric soil

802B—Orthents, loamy, undulating

Setting

General description: This map unit consists of areas of disturbed soil material.
Landform: Ground moraines, outwash plains, and leveled land
Position on the landform: Summits and backslopes
Slope range: 1 to 6 percent

Soil Properties and Qualities

Parent material: Earthy fill
Drainage class: Well drained
Seasonal high water table: At a depth of 3.5 to 5.0 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderately slow

Map Unit Composition

Orthents and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain more silt and less sand than the Orthents
- Soils that contain more than 15 percent gravel in the lower one-half of the profile
- Soils that have a seasonal high water table at a depth of less than 3.5 feet
- Soils that contain carbonates at or near the surface

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The very poorly drained Houghton soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Not prime farmland
Hydric soil status: Nonhydric soil

802D—Orthents, loamy, rolling

Setting

General description: This map unit consists of areas of disturbed soil material.
Landform: Moraines, outwash plains, and stream terraces
Position on the landform: Backslopes
Slope range: 6 to 12 percent

Soil Properties and Qualities

Parent material: Earthy fill
Drainage class: Well drained
Seasonal high water table: At a depth of 3.5 to 5.0 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderately slow

Map Unit Composition

Orthents and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain more silt and less sand than the Orthents
- Soils that contain more than 15 percent gravel in the lower one-half of the profile
- Soils that have a seasonal high water table at a depth of less than 3.5 feet
- Soils that contain carbonates at or near the surface
- Soils that have slopes of less than 6 percent

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The very poorly drained Houghton soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

805B—Orthents, clayey, undulating

Setting

General description: This map unit consists of areas of disturbed soil material.
Landform: Ground moraines, lake plains, and leveled land
Position on the landform: Summits and backslopes
Slope range: 1 to 6 percent

Soil Properties and Qualities

Parent material: Earthy fill
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 2.0 to 3.5 feet (perched)
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Very slow

Map Unit Composition

Orthents and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain more silt and less clay than the Orthents
- Soils that contain more sand and less clay than the Orthents
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that contain carbonates at or near the surface

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- The very poorly drained Peotone and Houghton soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

830—Landfills

• This map unit consists of garbage and other refuse and rubble from the demolition of buildings and pavement. The material is typically covered by a layer of compacted earth. Slopes are highly variable. Some of the landfills are active, but some have been abandoned. Some inactive landfills are being developed as recreational areas.

864—Pits, quarry

• This map unit consist of nearly level to gently sloping areas from which limestone has been extracted. The pits have nearly vertical sidewalls. Some pits are active, and others have been abandoned. Some contain water. Some of the larger abandoned pits are used as recreational areas.

865—Pits, gravel

• This map unit consists of nearly level to gently sloping areas from which gravel has been extracted. The pits have nearly vertical sidewalls. Some pits are active, and others have been abandoned. Some contain water. Some of the larger abandoned pits are used as recreational areas.

903A—Muskego and Houghton mucks, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Muskego—herbaceous organic material over coprogenic material; Houghton—herbaceous organic material
Drainage class: Very poorly drained
Seasonal high water table: 1 foot above to 1 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Muskego—moderate in the upper part and slow in the lower part; Houghton—moderate

Map Unit Composition

Muskego and similar soils: 50 percent

Houghton and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have less organic matter in the surface layer
- Soils that have organic deposits less than 51 inches thick

Dissimilar soils:
- The poorly drained Drummer soils on the slightly higher toeslopes
- The very poorly drained, calcareous Lena soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland"
- "Wildlife Habitat"
- "Engineering"
- "Soil Properties"

Interpretive Groups

Land capability classification: Muskego—4w; Houghton—3w
Prime farmland status: Not prime farmland
Hydric soil status: Hydric soils

969E2—Casco-Rodman complex, 12 to 20 percent slopes, eroded

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Backslopes

Soil Properties and Qualities

Parent material: Casco—loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits; Rodman—sandy and gravelly glaciofluvial deposits
Drainage class: Casco—somewhat excessively drained; Rodman—excessively drained
Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Casco—moderate in the upper part and very rapid in the lower part; Rodman—very rapid

Map Unit Composition

Casco and similar soils: 50 percent
Rodman and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are slightly eroded
- Soils that contain sandy and gravelly deposits beginning at a depth of more than 20 inches
- Soils that contain carbonates at or near the surface
- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- The well drained Rush soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland"
- "Wildlife Habitat"
- "Engineering"
- "Soil Properties"

Interpretive Groups

Land capability classification: Casco—6e; Rodman—6s
Prime farmland status: Not prime farmland
Hydric soil status: Nonhydric soils

969F—Casco-Rodman complex, 20 to 30 percent slopes

Setting

Landform: Outwash plains, end moraines, and kames
Position on the landform: Backslopes

Soil Properties and Qualities

Parent material: Casco—loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits; Rodman—sandy and gravelly glaciofluvial deposits
Drainage class: Casco—somewhat excessively drained; Rodman—excessively drained

Seasonal high water table: At a depth of more than 6 feet
Ponding: None
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Casco—moderate in the upper part and very rapid in the lower part; Rodman—very rapid

Map Unit Composition

Casco and similar soils: 50 percent
Rodman and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain carbonates at or near the surface
- Soils that contain sandy and gravelly deposits beginning at a depth of more than 20 inches
- Soils that have slopes of less than 20 percent or more than 30 percent
- Soils that are moderately eroded
- Soils that contain till in the lower part of the profile

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- The well drained Rush soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Forestland”
- “Wildlife Habitat”
- “Engineering”

Interpretive Groups

Land capability classification: Casco—7e; Rodman—7s
Prime farmland status: Not prime farmland
Hydric soil status: Nonhydric soils

1103A—Houghton muck, undrained, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Herbaceous organic material
Drainage class: Very poorly drained
Seasonal high water table: 1.0 foot above to 0.5 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have less organic matter in the surface layer than the Houghton soil
- Soils that have organic deposits less than 51 inches thick

Dissimilar soils:
- The poorly drained Drummer soils on the slightly higher toeslopes
- The very poorly drained, calcareous Lena soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 5w
Prime farmland status: Not prime farmland
Hydric soil status: Hydric soil

1107A—Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Parent material: Alluvium
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent

Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain less clay than the Sawmill soil
- Soils that are overlain by recent, light-colored deposition
- Soils that have a thinner subsurface layer than that of the Sawmill soil
- Soils that contain more gravel in the lower part of the profile than the Sawmill soil

Dissimilar soils:
- The very poorly drained Houghton soils on adjacent landforms
- The poorly drained, calcareous Millington soils in landform positions similar to those of the Sawmill soil

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 5w
Prime farmland status: Not prime farmland
Hydric soil status: Hydric soil

1210A—Lena muck, undrained, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Herbaceous organic material
Drainage class: Very poorly drained
Seasonal high water table: 1.0 foot above to 0.5 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderately rapid

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have organic deposits less than 51 inches thick
- Soils that have less organic matter in the surface layer than the Lena soil

Dissimilar soils:
- The very poorly drained, noncalcareous Houghton soils on toeslopes
- The poorly drained Harpster soils on the slightly higher toeslopes
- The poorly drained, noncalcareous Drummer soils on the slightly higher toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 5w
Prime farmland status: Not prime farmland
Hydric soil status: Hydric soil

1903A—Muskego and Houghton mucks, undrained, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Toeslopes

Soil Properties and Qualities

Parent material: Muskego—herbaceous organic material over coprogenic material; Houghton—herbaceous organic material
Drainage class: Very poorly drained
Seasonal high water table: 1.0 foot above to 0.5 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Muskego—moderate in the upper part and slow in the lower part; Houghton—moderate

Map Unit Composition

Muskego and similar soils: 50 percent
Houghton and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have less organic matter in the surface layer
- Soils that have organic deposits less than 51 inches thick

Dissimilar soils:
- The poorly drained Drummer soils on the slightly higher toeslopes
- The very poorly drained, calcareous Lena soils on toeslopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: Muskego—6w; Houghton—5w
Prime farmland status: Not prime farmland
Hydric soil status: Hydric soils

3076A—Otter silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Parent material: Alluvium
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thinner subsurface layer than that of the Otter soil and are lighter colored in the upper part of the subsoil
- Soils that contain less silt and more clay in the upper one-half of the profile than the Otter soil
- Soils that contain less silt and more sand in the upper one-half of the profile than the Otter soil
- Soils that contain more gravel in the lower part of the profile than the Otter soil

Dissimilar soils:
- The poorly drained, calcareous Millington soils in landform positions similar to those of the Otter soil
- The very poorly drained Houghton soils on adjacent landforms

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

3082A—Millington silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Parent material: Calcareous alluvium
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain less sand and more silt in the upper and middle parts of the subsoil than the Millington soil
- Soils that do not have a subsurface layer
- Soils that contain more gravel in the lower part of the profile than the Millington soil

Dissimilar soils:
- The poorly drained, noncalcareous Otter soils in landform positions similar to those of the Millington soil
- The very poorly drained Lena soils on adjacent landforms

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric soil

8076A—Otter silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Parent material: Alluvium
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that have a thinner subsurface layer than that of the Otter soil and are lighter colored in the upper part of the subsoil
- Soils that contain less silt and more clay in the upper one-half of the profile than the Otter soil
- Soils that contain less silt and more sand in the upper one-half of the profile than the Otter soil
- Soils that contain more gravel in the lower part of the profile than the Otter soil

Dissimilar soils:
- The poorly drained, calcareous Millington soils in landform positions similar to those of the Otter soil
- The very poorly drained Houghton soils on adjacent landforms

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

8082A—Millington silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains (fig. 6)

Soil Properties and Qualities

Parent material: Calcareous alluvium
Drainage class: Poorly drained
Seasonal high water table: 0.5 foot above to 1.0 foot below the surface (apparent)
Ponding frequency: Frequent
Depth to restrictive feature: Very deep (more than 60 inches)
Permeability: Moderate

Figure 6.—An area of Millington silt loam, 0 to 2 percent slopes, occasionally flooded, on an island in the Fox River.

Map Unit Composition

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

Minor Components

Similar soils:
- Soils that contain less sand and more silt in the upper and middle parts of the subsoil than the Millington soil
- Soils that do not have a subsurface layer
- Soils that contain more gravel in the lower part of the profile

Dissimilar soils:
- The poorly drained, noncalcareous Otter soils in landform positions similar to those of the Millington soil
- The very poorly drained Lena soils on adjacent landforms

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland”
- “Wildlife Habitat”
- “Engineering”
- “Soil Properties”

Interpretive Groups

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

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.

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 obtaining specific information from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 1997, Kane County had about 197,119 acres of cropland (U.S. Department of Commerce, 1997). The major row crops are corn and soybeans. Wheat is the major small grain crop grown. Some vegetables, sod, and nursery crops also are grown. Alfalfa is the major forage crop.

The soils in Kane County have good potential for continued crop production, especially if the latest crop production technology is applied. This soil survey can be used as a guide for applying the latest crop production technologies.

The major management concerns affecting cropland in the county are water erosion, wetness, ponding, crusting, poor tilth, excessive permeability, and restricted permeability.

Water erosion is a potential problem on approximately 45 percent of the cropland in the county. Erosion can be a problem on soils that have slopes of more than 2 percent, such as Danabrook, Kidami, and Octagon soils.

Loss of the surface layer is damaging for several reasons. Soil productivity is reduced as the surface soil is removed and part of the subsoil is incorporated into the plow layer. The subsoil generally has a lower content of plant nutrients than the surface soil, has a lower content of organic matter, and has a higher clay content. As the content of organic matter in the plow layer decreases and the content of clay increases, soil tilth deteriorates. As a result, the surface can become crusted and the rate of water infiltration is reduced. Erosion also results in the sedimentation of streams, rivers, road ditches, and lakes. This sedimentation reduces the quality of water for agricultural, municipal, and recreational uses and for fish and wildlife. Removing the sediment generally is expensive. Controlling erosion helps to minimize this pollution and improves water quality.

Erosion-control measures include both cultural and structural practices. The most widely used practice in the county is conservation tillage. Examples of a conservation tillage system are mulch tillage and zero tillage. These systems can leave 30 to 90 percent of the surface covered with crop residue. Another cultural practice is a crop rotation that includes 1 or more years of close-growing grasses or legumes. If slopes are smooth and uniform, terraces and contour farming are also effective in controlling erosion.

Structural practices are needed in drainageways where concentrated runoff flows overland. Establishing grassed waterways or building erosion-control structures reduces the hazard of erosion in these areas.

Further information about erosion-control measures suitable for each kind of soil is provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Soil tilth is an important factor influencing the germination of seeds, the amount of runoff, and the rate of water infiltration. Soils that have good tilth are granular and porous and have a high content of organic matter.

Crusting can be a problem in areas of Birkbeck and Kidami soils, which have a surface layer of silt loam or loam and a low content of organic matter. Generally, the structure of these soils is weak, and a crust forms on the surface during periods of intense rainfall. This crust is hard when dry. It inhibits seedling emergence, reduces the rate of water infiltration, and increases runoff and erosion. Regular additions of crop residue, manure, and other organic material improve soil structure and minimize crusting.

Poor tilth is also a problem on soils that have a surface layer of silty clay loam. If poorly drained soils, such as Drummer and Elpaso soils, are plowed when wet, the surface layer can become cloddy. This cloddiness hinders the preparation of a good seedbed. Tilling in the fall and leaving the soil surface rough and covered with a moderate amount of crop residue generally result in good tilth in the spring. A system of strip or ridge tillage may also work well on these soils.

Drainage systems have been installed in most areas of poorly drained and somewhat poorly drained soils used as cropland in the county; therefore, these soils are adequately drained for the crops commonly grown. Measures that maintain the drainage system are needed. Poorly drained soils, such as Drummer, Elpaso, and Hooppole soils, have subsurface drainage. In addition, surface tile inlets or shallow surface ditches are needed to remove excess water in some areas of poorly drained soils. In some parts of the county, somewhat poorly drained soils are wet long enough that in some years productivity is reduced, unless the soils are artificially drained. Somewhat poorly drained soils, such as Brenton, Elburn, and Flanagan soils, have subsurface drainage.

Soils with excessive permeability, such as Bowes and Dresden soils, have the potential for ground-water contamination. These soils contain sandy and gravelly deposits within a depth of 60 inches and are very rapidly permeable in the lower part of the profile.

Several measures can be used to limit the amount of deep leaching of nutrients and pesticides. Applications of fertilizer should be based on the results of soil tests. The local office of the Cooperative Extension Service can help in determining the kinds and proper amounts of nutrients needed. Chemicals should be selected based on their solubility in water, their ability to bind with the soil, and the rate of their breakdown in the soil. Splitting applications of chemicals, particularly nitrogen, is beneficial. This practice reduces the chance for excessive leaching from a one-time application. Including legumes in a crop rotation or as a cover crop adds nitrogen to the soil and thus reduces the amount of nitrogen needed in chemical applications. Using crop rotations is also effective in limiting the build-up of weed and insect populations, thereby reducing the amount of herbicides and insecticides needed per application. Finally, the use of small grain cover crops following fertilized corn crops can be effective in taking up some residual nitrogen from the soil.

Restricted permeability can increase the hazard of erosion. As water movement slows within a soil, the chance for runoff increases. The slowly permeable Ozaukee soils are more susceptible to erosion than the moderately permeable Barony soils. The effect restricted permeability has on the erosion hazard can be controlled by applying a cropping system that leaves crop residue on the surface after planting, incorporating green manure crops or crop residue into the soil, and using conservation cropping systems.

Restricted permeability can also limit the effectiveness of drainage systems. The slowly permeable Thorp soils require a narrower tile spacing than that in areas of the moderately permeable Drummer soils for effectively lowering the seasonal high water table.

Proper management is needed on hayland to prolong the life of desirable forage species, maintain or improve the quality and quantity of forage, and control erosion and runoff. Hay may last as a vigorous crop for 4 or 5 years, depending on management and on the varieties seeded. Suitable hay plants include several legumes and cool-season grasses. Alfalfa is the most commonly grown legume for hay. It is often used in mixtures with smooth bromegrass and orchardgrass. Alfalfa is best suited to moderately well drained soils, such as Mayville and Kidami soils. Red clover also is grown for hay. Measures that maintain or improve fertility are needed. The amount of lime and fertilizer to be added should be based on the results of soil tests, the needs of the plants, and the expected level of yields. Seed varieties should be selected in accordance with the soil properties and the drainage conditions of the tract of land.

Cropland Management Considerations

The management concerns affecting the use of the soils in the survey area for crops and pasture are shown in table 5.

The main concerns in managing cropland are controlling water erosion, soil wetness, and ponding; minimizing crusting; improving poor tilth; and limiting the effects of excessive permeability.

Generally, a combination of several practices is needed to control *water erosion.* Conservation tillage, stripcropping, contour farming, conservation cropping systems, crop residue management, diversions, and grassed waterways help to prevent excessive soil loss.

Wetness is a limitation in some areas of cropland, and *ponding* is a hazard. Drainage systems consist of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these. Measures that maintain the drainage system are needed.

Practices that minimize *crusting* and improve *poor tilth* include incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage. Avoiding tillage when the soil is too wet can control surface cloddiness.

Excessive permeability can cause deep leaching of nutrients and pesticides. Selecting appropriate chemicals and using split application methods reduce the hazard of ground-water contamination.

Additional limitations and hazards are as follows:

Excess lime.—This limitation can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. In addition, crops may respond well to additions of phosphate fertilizer to soils that have a high content of lime.

Flooding.—This hazard cannot be easily overcome. Winter small grain crops can be damaged by flooding. Tilling and planting should be delayed in the spring until flooding is no longer a hazard. Dikes and diversions can reduce the extent of the crop damage caused by floodwater.

Low available water capacity.—This limitation can be minimized by reducing the evaporation and runoff rates and increasing the rate of water infiltration. Applying conservation tillage and conservation cropping systems, farming on the contour, stripcropping, establishing field windbreaks, and leaving crop residue on the surface conserve moisture.

Restricted permeability.—This limitation can reduce the effectiveness of drainage systems. Narrower tile spacing can lower the seasonal high water table.

Subsidence.—Subsidence occurs as a result of shrinkage from drying, consolidation because of the loss of ground water, compaction from tillage, wind erosion, burning, and biochemical oxidation. Limiting the amount of drainage, avoiding excessive tillage, avoiding tilling when the soil is wet, and using a system of conservation tillage that leaves crop residue on the surface after planting help to control subsidence.

Wind erosion.—Using a system of conservation tillage that leaves crop residue on the surface after planting and keeping the surface rough help to control wind erosion.

Explanation of Criteria

Crusting.—The organic matter content is 2.5 percent or less, and the clay content is greater than 20 percent in the surface layer.

Excess lime.—A calcium carbonate equivalent of 15 percent or more is within 16 inches of the surface.

Excessive permeability.—Permeability is 6 inches or more per hour within the soil profile.

Flooding.—The soil is subject to occasional or frequent flooding.

Low available water capacity.—The weighted average of the available water capacity between the surface and a depth of 40 inches is 0.1 inch or less.

Ponding.—A seasonal high water table is above the surface.

Poor tilth.—The clay content is 27 percent or more in the surface layer.

Restricted permeability.—Permeability is less than 0.2 inch per hour between the surface and a depth of 40 inches.

Subsidence.—The decrease in surface elevation is more than 0 inches.

Water erosion.—The Kw factor of the surface layer multiplied by the slope is more than 0.8, 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 is 1 or 2.

Pastureland Management Considerations

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields other than those shown in the yields table.

Growing legumes and cool-season grasses that are suited to the soils and climate in the survey area helps to maintain a productive stand of pasture. The main concerns affecting the management of pastureland in the county are listed in table 5. They include frost heave, low pH, water erosion, wetness, ponding, equipment limitation, flooding, wind erosion, and low available water capacity.

Frost heave is a limitation in areas of soils that have a moderate or high potential for frost action. It occurs when ice lenses or bands develop in the soil and drive an ice wedge between two layers of soil near the surface layer. The ice wedges heave the overlying soil layer upward, snapping the roots. Soils that have a low content of sand have small pores that hold water and enable ice lenses to form. Selecting adapted forage and hay varieties can reduce the effects of frost heave. Timely deferment of grazing, which maintains a surface cover that insulates the soil, also reduces the effects of frost heave.

Soils that have *low pH* have a pH value of 5.5 or less within 40 inches of the surface. Low pH inhibits the uptake of certain nutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of plants. Applications of lime should be based on the results of soil tests. The goal is to achieve the optimum pH level for the uptake of the major nutrients by the specific grass, legume, or combination of grasses and legumes.

Pastureland soils that are susceptible to *water erosion* meet the following criteria: the value of the Kw factor multiplied by the percent slope is more than 0.8, and the slope is 3 percent or more. Water erosion reduces the productivity of pastureland. It also results in onsite and offsite sedimentation, causes water pollution by sedimentation, and increases the runoff of livestock manure and other added nutrients. Measures that are effective in controlling water erosion include establishing or renovating stands of legumes and grasses. Controlling erosion during seedbed preparation is a major concern. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, establishing grassed waterways, farming on the contour, and using a system of conservation tillage that leaves crop residue on the surface can help to minimize erosion. Overgrazing or grazing when the soil is wet reduces the extent of plant cover and results in surface compaction and poor tilth, and thus it increases the susceptibility to erosion. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition. The proper location of livestock watering facilities helps to prevent surface compaction or the formation of ruts by making it unnecessary for cattle to travel long distances up and down the steeper slopes.

Wetness is limitation in some areas, and *ponding* is a hazard. Wetness occurs in areas where the seasonal high water table is within a depth of 1.5 feet. Ponding occurs when the seasonal high water table is above the surface. A drainage system that consists of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these can lower the water table and remove excess water. Measures that maintain the drainage system are needed. Selecting species of grasses and legumes adapted to wet conditions can improve forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Equipment limitation is a concern in areas where slopes are more than 10 percent. It can cause rapid wear of equipment. It can also present problems with fertilization, harvest, pasture renovation, and seedbed preparation. This limitation cannot be easily overcome.

Frequent or occasional *flooding* can damage forage stands and delay harvesting in some years. Dikes and diversions help to control the extent of damage caused by floodwater. Selecting species of grasses and legumes adapted to wet conditions can improve forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Organic soils, which are in wind erodibility group 1 or 2, are susceptible to *wind erosion*. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, using a system of conservation tillage that leaves crop residue on the surface, and keeping the surface rough help to control wind erosion. Overgrazing or grazing when the soil is wet reduces the extent of plant cover, and thus it increases the susceptibility to wind erosion. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition.

Low available water capacity means that the weighted average of the available water capacity between the surface and a depth of 40 inches is 0.1 inch or less. Available water capacity refers to the capacity of soils to hold water available for use by most plants. The quality and quantity of the pasture may be reduced if the pasture cannot support the desired number of livestock because the available water is inadequate for the maintenance of a healthy community of desired pasture species. A poor quality pasture may increase the hazard of water erosion and increase the runoff of pollutants. Planting drought-resistant species of grasses and legumes helps to establish a cover of vegetation. The plants should not be clipped or grazed until they are sufficiently established.

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 6. 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 the 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 (Fehrenbacher and others, 1978). 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.

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

Crops other than those shown in 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 of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for 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 take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland or for engineering purposes.

In the capability system, soils generally are grouped at three levels—capability class, subclass, and unit (USDA, 1961). These categories indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, small grain, cotton, hay, and field-grown vegetables. Only class and subclass are used in this survey.

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 few limitations that restrict their use.

Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation.

Class 7 soils have very severe limitations that make them unsuitable for cultivation.

Class 8 soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class number, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless a 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 mainly to pasture, rangeland, woodland, wildlife habitat, or recreation.

The capability classification of map units in this survey area is given in table 6.

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.

Over the past 20 years, a trend in land use in some parts of the survey area 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.

About 229,000 acres, or nearly 68 percent of the survey area, meets the criteria for prime farmland. Areas of this land are throughout the county.

The map units in the survey area that are considered prime farmland are listed in table 7. 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 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units."

Forestland

Paul Kilburn published a detailed record of the presettlement forests of Kane County in 1959. He reviewed the original 1835 land survey records, from which he established a map and tabulation of the trees of Kane County. Kilburn determined that one-third of Kane County was forested. The majority of the forested areas were located along the Fox River and its primary tributaries. The balance of the land was prairie and marshes. The forests of the northern tier of townships were open, were dominated by bur oak, and were no doubt a savanna rather than a closed canopy forest.

Kilburn's tabulations indicated that more than 80 percent of the trees were bur oak or white oak. The remaining species were similar to those that grow in the area today. The forest habitats of the year 2000, however, have changed from being primarily dominated by oak to supporting a higher percentage of mesic species, such as sugar maple, elm, and green ash.

In presettlement periods, the water table was higher and the distribution of wetlands was greater between the moraines in the survey area. These factors limited the distribution of forestland. The drainage of land has allowed the spread of pioneer trees into areas of former prairie-marsh habitat.

The forests in the survey area are also changing with the introduction of species from around the world. The planting of trees for windbreaks, erosion control, and ornamental purposes has impacted the forestland in Kane County. These introduced species and the native pioneer species are changing the composition of forestland in northern Illinois. The oaks are declining in numbers, and maple and ash are increasing.

Assistance in establishing, improving, or managing forestland is available from foresters or natural resource specialists.

Table 8 provides information regarding the productivity of the soils in the county for forestland. The *potential productivity* for merchantable or *common trees* on a soil is expressed as a *site index* and as a *volume* number. Only those soils suitable for wood crops are listed.

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.

The first species listed under *common trees* for a soil is the indicator species for that soil. It generally is the most common species on the soil. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected based on growth rate, quality, value, and marketability. More detailed information is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important trees. 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.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

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. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

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 9 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in table 9 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 of the Cooperative Extension Service or from a commercial nursery.

Recreation

Kane County offers a variety of recreational facilities. The Forest Preserve District, which was organized in 1925 by public referendum, now owns and manages 40 forest preserves that make up more than 7,500 acres. Outdoor activities available to the public include boating, fishing, hiking, biking, horseback riding, camping, picnicking, snowmobiling, cross-country skiing, sledding, and golfing. In addition, most municipalities offer a variety of recreational facilities and activities, such as playgrounds, swimming pools, and golf courses.

The county has four main bicycle trails. These are the Fox River Trail (fig. 7), the Great Western Trail, the Virgil Gilman Trail, and a branch of the Illinois Prairie Path. These trails run approximately 85 miles from one end of the county to the other.

Figure 7.—The Fox River Trail along the Fox River in an area of Millington silt loam, 0 to 2 percent slopes, occasionally flooded.

The soils of the survey area are rated in table 10 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of 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.

In table 10, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these.

The information in table 10 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 13 and interpretations for dwellings without basements and for local roads and streets in table 12.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

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

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

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

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Kane County has diverse topography. This diversity is primarily the result of glacial action. It provides a variety of upland and aquatic habitats that sustain an abundance of wildlife species.

The upland areas, which range from gently sloping to strongly sloping hillsides and ridges to nearly level outwash plains, were once covered by a sea of native prairie grasses and small open oak forestlands known as savannas. These natural communities were once home to such species as buffalo, elk, prairie chickens, and wolves.

Characteristic aquatic habitats include streams and wetlands. Typical wetlands include lakeside marshes, glacial potholes, hillside seeps, and flood-plain wetlands along streams and rivers. These wetland areas provide important stormwater storage and water quality benefits to the county as well as providing homes to such species as ducks, geese, great blue herons, sandhill cranes, muskrat, mink, beaver, and numerous frogs, toads, and turtles.

As the county was settled, conversion of land for agriculture and urbanization altered these natural communities and the wildlife populations associated with them. Kane County's landscape is now a mosaic of cropland, urban development, pasture, small woodlots, and wetlands and other waterways. The various land uses support wildlife species that have adapted to the human-altered landscape. These species include Canada geese, beaver, coyote, pheasants, raccoon, and whitetail deer. Native aquatic plants, fish, and invertebrates are still found in several ponds and in the Fox River and the larger streams. These organisms, however, are very vulnerable to destruction. The slightest change in water chemistry or encroachment by surrounding land uses has proven to be devastating to numerous aquatic communities.

The continued existence of many of the county's plants and animals depends on specific habitats to which they are adapted. Active management is necessary, especially in an urban environment, to maintain healthy ecosystems and adequate wildlife populations.

In general, most areas in the county are not managed primarily for wildlife. Good land management practices, however, can commonly improve the value of an area as wildlife habitat. For example, farm practices that leave crop residue on the fields during the fall and winter months not only help to control soil erosion but also provide winter cover and food for some wildlife species. Allowing grassed waterways, road ditches, fencelines, set-aside fields, and vacant properties to remain unmowed until early August provides much-needed habitat for ground-nesting wildlife, such as rabbits, pheasants, and many species of songbirds.

Many temporarily and seasonally flooded wetlands have been impacted by land use practices. Development and cultivation in these wetlands should be avoided. Buffer strips surrounding wetland areas can provide food and nesting cover for many wildlife species and prevent these areas from filling in with eroded sediment. Wetlands, streambanks, and woodlots should be fenced so that livestock are excluded. Fencing protects and maintains the native plant communities that support wildlife species, helps to control erosion, and improves water quality in streams and rivers.

When attempts are made to restore or manage an area for wildlife, it is important to understand the kinds of soils on the site. For example, soils that have a seasonal high water table will most likely support vegetation that is tolerant of wet conditions and thus attract wetland wildlife species. If the soil series is characterized by wetness or hydric properties but the area does not appear to be susceptible to wetness, there may be an existing drainage ditch or a system of subsurface tile drains. Areas that have been drained can provide opportunities for the restoration of wetland habitat as long as negative impacts are avoided on neighboring properties.

Nonhydric soils in the uplands support communities once dominated by prairie grass and oak savanna habitats. These habitats can also be restored through management that promotes or reestablishes the native plant species while controlling or eliminating competing exotic vegetation.

Assistance with wildlife habitat projects can be obtained from various local, State, and Federal agencies, including the Illinois Department of Conservation, the U.S. Fish and Wildlife Service, the Natural Resources Conservation Service, and the local Soil and Water Conservation District.

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

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

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

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, bromegrass, timothy, orchardgrass, clover, alfalfa, trefoil, reed canarygrass, and crownvetch.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, indiangrass, goldenrod, lambsquarter, dandelions, blackberry, ragweed, wheatgrass, fescue, and nightshade.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, boxelder, birch, maple, green ash, willow, and American elm. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are hawthorn, honeysuckle, American plum, redosier dogwood, chokecherry, serviceberry, silver buffaloberry, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, hemlock, fir, yew, cedar, larch, and juniper.

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

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 muskrat marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, Hungarian partridge, pheasant, meadowlark, field sparrow, killdeer, 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, squirrels, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, bitterns, rails, kingfishers, muskrat, otter, mink, and beaver.

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 each 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 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, 1995). These criteria are used to identify a phase of a soil series that normally is 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, 1998) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period 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 in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 1998).

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.

The following map units meet the definition of hydric soils and, in addition, 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 others, 1998).

67A Harpster silty clay loam, 0 to 2 percent slopes
69A Milford silty clay loam, 0 to 2 percent slopes
103A Houghton muck, 0 to 2 percent slopes
125A Selma loam, 0 to 2 percent slopes
152A Drummer silty clay loam, 0 to 2 percent slopes
206A Thorp silt loam, 0 to 2 percent slopes
210A Lena muck, 0 to 2 percent slopes
232A Ashkum silty clay loam, 0 to 2 percent slopes
329A Will loam, 0 to 2 percent slopes
330A Peotone silty clay loam, 0 to 2 percent slopes
356A Elpaso silty clay loam, 0 to 2 percent slopes
488A Hooppole loam, 0 to 2 percent slopes
523A Dunham silty clay loam, 0 to 2 percent slopes

529A Selma loam, 0 to 2 percent slopes
626A Kish loam, 0 to 2 percent slopes
903A Muskego and Houghton mucks, 0 to 2 percent slopes
1103A Houghton muck, undrained, 0 to 2 percent slopes
1107A Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded
1210A Lena muck, undrained, 0 to 2 percent slopes
1903A Muskego and Houghton mucks, undrained, 0 to 2 percent slopes
3076A Otter silt loam, 0 to 2 percent slopes, frequently flooded
8076A Otter silt loam, 0 to 2 percent slopes, occasionally flooded
8082A Millington silt loam, 0 to 2 percent slopes, occasionally flooded

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions of the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions of the landform.

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 provided in the tables 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 within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

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

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

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

Building Site Development

Table 12 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

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

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, slope, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

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

Sanitary Facilities

Table 13 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

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

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

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

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

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

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

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

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

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

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

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

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. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 14 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

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

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

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

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

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 14, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

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

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

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

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

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 15 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

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

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

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth 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.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

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

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 or to a cemented pan 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.

Grassed waterways 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 or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, 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.

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.

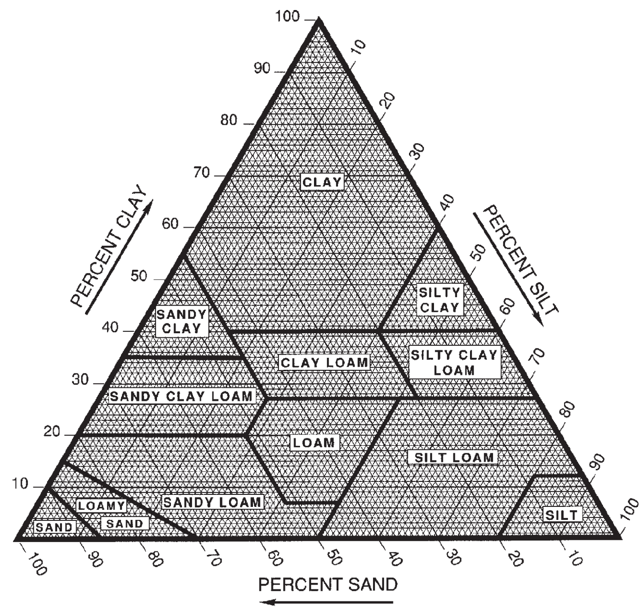

Figure 8.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

Engineering Index Properties

Table 16 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. 8). "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, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

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 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 17 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 table 17, 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 table 17, 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 table 17, 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 (K_{sat}) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). 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 17, 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 and soil organisms.

Erosion factors are shown in table 17 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 as follows:

1. Coarse sands, sands, fine sands, and very fine sands.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.

8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

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 18 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 19 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.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 19 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone 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. 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.

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 19 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* 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).

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.

Soil Features

Table 20 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

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.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 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 21 shows the classification of the soils in the survey area. 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 Aquoll (*Aqu*, meaning water, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; 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 Endoaquolls (*Endo*, meaning within, plus *aquolls*, the suborder of the Mollisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup 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 taxonomic class. 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 Endoaquolls.

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, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. 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 Endoaquolls.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each 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, 1998). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Ashkum Series

Drainage class: Poorly drained
Permeability: Moderately slow
Landform: Ground moraines and end moraines
Parent material: Colluvium and the underlying till
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 110

Ashkum silty clay loam, 0 to 2 percent slopes, in Will County, Illinois; at an elevation of 705 feet; 96 feet south and 2,030 feet east of the northwest corner of sec. 22, T. 34 N., R. 11 E.; USGS Manhattan topographic quadrangle; lat. 41 degrees 25 minutes 28 seconds N. and long. 87 degrees 57 minutes 24 seconds W., NAD 27:

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

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

BAg—12 to 18 inches; dark gray (2.5Y 4/1) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; neutral; clear smooth boundary.

Bg1—18 to 29 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; neutral; clear wavy boundary.

2Bg2—29 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (10YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; common fine and medium prominent yellowish brown (10YR 5/8) and common fine and medium distinct brown (10YR 5/3) masses of iron accumulation in the matrix; common fine and medium distinct gray (5Y 5/1) iron depletions in the matrix; 8 percent gravel; neutral; gradual wavy boundary.

2BCg—49 to 54 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to weak coarse angular blocky; firm; few very fine roots; common fine very dark gray (10YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; common fine and medium prominent yellowish brown (10YR 5/6) and distinct brown (10YR 5/3) masses of iron accumulation in the matrix; common fine and medium faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2Cg—54 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; common fine prominent yellowish brown (10YR 5/6) and common fine and medium distinct brown (10YR 5/3) masses of iron accumulation in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the silty colluvium: 15 to 40 inches
Depth to carbonates: 24 to 60 inches
Thickness of the solum: 30 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam or silty clay

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

2Bg horizon:
Hue—2.5Y, 5Y, 5GY, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silty clay

2Cg horizon:
Hue—2.5Y, 5Y, 5GY, or N
Value—5 or 6
Chroma—0 to 2
Texture—silty clay loam
Content of gravel—less than 10 percent

Barony Series

Drainage class: Moderately well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 5 percent

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

Typical Pedon for MLRA 95B

Barony silt loam, 2 to 5 percent slopes, in Kane County, Illinois; at an elevation of 875 feet; 708 feet north and 1,458 feet east of the southwest corner of sec. 33, T. 41 N., R. 6 E.; USGS Maple Park topographic quadrangle; lat. 41 degrees 59 minutes 01 second N. and long. 88 degrees 33 minutes 41 seconds W., NAD 27:

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

Bt1—8 to 12 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; neutral; clear smooth boundary.

Bt2—12 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; slightly acid; clear wavy boundary.

Bt3—16 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few fine rounded black (7.5YR 2.5/1) manganese concretions throughout; moderately acid; clear wavy boundary.

Bt4—21 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; common fine rounded black (7.5YR 2.5/1) manganese concretions throughout; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; slightly acid; gradual wavy boundary.

Bt5—26 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine strong brown (7.5YR 5/8) iron oxide concretions throughout; common fine rounded black (7.5YR 2.5/1) manganese concretions throughout; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; slightly acid; clear wavy boundary.

2Bt6—34 to 41 inches; brown (7.5YR 4/4) sandy clay loam; moderate medium and coarse subangular blocky structure; friable; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; few distinct brown (7.5YR 4/3) clay films on faces of peds and in pores; common fine strong brown (7.5YR 5/8) iron oxide concretions throughout; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent gravel; neutral; clear smooth boundary.

2Bt7—41 to 45 inches; yellowish brown (10YR 5/4) and brown (7.5YR 4/4) silt loam and loam; weak medium and coarse subangular blocky structure; friable; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; few distinct brown (7.5YR 4/3) clay films on faces of peds and in pores; common fine strong brown (7.5YR 5/8) iron oxide concretions throughout; common fine distinct brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; many fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 2 percent gravel; neutral; clear wavy boundary.

2Bt8—45 to 54 inches; brown (7.5YR 4/4) sandy clay loam; weak medium and coarse subangular blocky structure; friable; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; few distinct brown (7.5YR 4/3) clay films on faces of peds; common fine very pale brown (10YR 8/2) calcium carbonate concretions throughout; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 14 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C1—54 to 65 inches; yellowish brown (10YR 5/4) and strong brown (7.5YR 4/6), stratified sand and loamy sand; single grain; loose; common fine faint strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 5 percent gravel; strongly effervescent; slightly alkaline; clear wavy boundary.

2C2—65 to 78 inches; brown (7.5YR 4/4 and 5/4) and yellowish brown (10YR 5/4), stratified very fine sandy loam, loamy sand, and sandy loam; massive; very friable; common medium faint strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; 8 percent gravel; strongly effervescent; slightly alkaline; clear wavy boundary.

2C3—78 to 85 inches; yellowish brown (10YR 5/6 and 5/8) and brown (7.5YR 5/4), stratified loamy sand, sandy loam, and very fine sandy loam; massive; very friable; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 30 to more than 60 inches

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

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 6
Texture—silt loam, loam, silty clay loam, clay loam, sandy clay loam, or sandy loam
Content of gravel—less than 15 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 6
Chroma—3 to 6
Texture—stratified silt loam, loam, or sandy loam with strata of loamy sand or sand
Content of gravel—less than 15 percent

Beecher Series

Drainage class: Somewhat poorly drained
Permeability: Slow
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 0 to 4 percent

Taxonomic classification: Fine, illitic, mesic Udollic Epiaqualfs

Typical Pedon for MLRA 110

Beecher silt loam, 0 to 2 percent slopes, in Kankakee County, Illinois; at an elevation of 655 feet; 340 feet south and 65 feet west of the northeast corner of sec. 14, T. 31 N., R. 12 E.; USGS Bradley topographic quadrangle; lat. 41 degrees 10 minutes 39 seconds N. and long. 87 degrees 47 minutes 52 seconds W., NAD 27:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine granular structure; friable; neutral; abrupt smooth boundary.

BE—9 to 13 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate very fine granular structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

2Bt1—13 to 16 inches; brown (10YR 5/3) silty clay loam; moderate very fine subangular blocky structure; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 1 percent gravel; moderately acid; clear smooth boundary.

2Bt2—16 to 21 inches; grayish brown (10YR 5/2) silty clay loam; moderate very fine and fine subangular blocky structure; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct dark gray (10YR 4/1) clay films on faces of peds; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 2 percent gravel; moderately acid; clear smooth boundary.

2Bt3—21 to 27 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine dark brown (7.5YR 3/3) and black (10YR 2/1) iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6 and 5/8) masses of iron accumulation in the matrix; 2 percent gravel; slightly alkaline; clear smooth boundary.

2Bt4—27 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/8) and distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium prominent gray (5Y 5/1) iron depletions in the matrix; 2 percent gravel; slightly alkaline; clear smooth boundary.

2BCt—32 to 37 inches; yellowish brown (10YR 5/6) silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; many coarse prominent gray (5Y 5/1) iron depletions in the matrix; 2 percent gravel; slightly effervescent; moderately alkaline; clear smooth boundary.

2Cd—37 to 60 inches; yellowish brown (10YR 5/4) silty clay loam; massive; very firm; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/8) and distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent greenish gray (5GY 5/1) iron depletions in the matrix; common medium prominent greenish gray (5G 6/1) iron depletions on cleavage planes; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 18 inches
Depth to carbonates: 20 to 42 inches
Thickness of the solum: 24 to 45 inches

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

E horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture—silt loam

BE or 2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay

2BCt or 2Cd horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam
Content of gravel—less than 10 percent

Birkbeck Series

Drainage class: Moderately well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess and the underlying till
Slope range: 0 to 10 percent

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

Typical Pedon for MLRA 108

Birkbeck silt loam, 2 to 5 percent slopes, in Macon County, Illinois; at an elevation of 680 feet; 750 feet south and 1,600 feet east of the northwest corner of sec. 25, T. 17 N., R. 3 E.; USGS Argenta topographic quadrangle; lat. 39 degrees 54 minutes 24 seconds N. and long. 88 degrees 48 minutes 59 seconds W., NAD 27:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thin platy structure parting to moderate very fine granular; friable; slightly acid; abrupt smooth boundary.

E—4 to 9 inches; brown (10YR 4/3) silt loam; moderate very thin platy structure; friable; few distinct dark brown (10YR 3/3) organic coatings and gray (10YR 6/1) (dry) clay depletions on faces of peds; moderately acid; clear smooth boundary.

Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure parting to moderate very fine granular; friable; common distinct dark brown (10YR 3/3) organo-clay films and light gray (10YR 7/1) (dry) clay depletions on faces of peds; few fine irregular black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; moderately acid; clear smooth boundary.

Bt2—13 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and very fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common fine irregular black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; moderately acid; clear smooth boundary.

Bt3—24 to 29 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common fine irregular black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; moderately acid; clear smooth boundary.

Bt4—29 to 42 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common medium irregular black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; few fine prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine distinct light yellowish brown (2.5Y 6/4) masses of iron accumulations in the matrix; slightly acid; gradual smooth boundary.

Bt5—42 to 54 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common medium irregular black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; few fine prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine distinct light yellowish brown (2.5Y 6/4) and few medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

2Bt6—54 to 60 inches; dark yellowish brown (10YR 4/4) loam; weak coarse subangular blocky structure; friable; few distinct brown (7.5YR 4/4) clay films on face of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; few fine irregular black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; common fine prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; common medium distinct light yellowish brown (2.5Y 6/4) and fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; neutral; gradual smooth boundary.

2C—60 to 68 inches; light olive brown (2.5Y 5/4) loam; massive; firm; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; few fine irregular black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; common fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine faint light yellowish brown (2.5Y 6/4) and prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: 40 to more than 60 inches
Thickness of the solum: 44 to 70 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

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

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—less than 15 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—loam, clay loam, or silt loam
Content of gravel—less than 15 percent

Blackberry Series

Drainage class: Moderately well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess and the underlying outwash
Slope range: 0 to 5 percent

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

Typical Pedon for MLRA 108

Blackberry silt loam, 0 to 2 percent slopes, in Kane County, Illinois; at an elevation of 728 feet; 475 feet south and 770 feet west of the northeast corner of sec. 27, T. 39 N., R. 7 E.; USGS Sugar Grove topographic quadrangle; lat. 41 degrees 50 minutes 15 seconds N. and long. 88 degrees 25 minutes 05 seconds W., NAD 27:

Ap—0 to 4 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

A—4 to 11 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; weak medium angular blocky structure parting to weak fine granular; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

Bt1—11 to 15 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine and medium angular blocky structure; friable; common very fine roots; common distinct black (10YR 2/1) organic coatings throughout; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; neutral; gradual wavy boundary.

Bt2—15 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and pores; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; neutral; gradual wavy boundary.

Bt3—24 to 35 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine to medium roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; gradual wavy boundary.

Bt4—35 to 44 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine to medium roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; gradual wavy boundary.

Bt5—44 to 52 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine irregular very dark gray (10YR 3/1) very weakly cemented manganese concretions throughout; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; gradual wavy boundary.

2Bt6—52 to 58 inches; yellowish brown (10YR 5/4) loam; weak medium prismatic structure parting to weak medium and coarse subangular blocky; friable; few distinct brown (10YR 4/3) clay films on vertical faces of peds; common fine faint yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

2Bt7—58 to 68 inches; brown (10YR 4/3) gravelly clay loam; weak medium and coarse subangular blocky structure; friable; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium distinct yellowish brown (10YR 5/6) and prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; 18 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

2C—68 to 80 inches; brown (10YR 4/3) gravelly clay loam; massive; very friable; common medium prominent strong brown (7.5YR 4/6) and distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 23 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 45 to 70 inches

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

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, silt loam, silty clay loam, sandy loam, fine sandy loam, sandy clay loam, or the gravelly analogs of these textures
Content of gravel—less than 20 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, silt loam, sandy loam, loamy sand, sandy clay loam, or the gravelly analogs of these textures
Content of gravel—less than 25 percent

Blount Series

Drainage class: Somewhat poorly drained
Permeability: Slow
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 0 to 2 percent

Taxonomic classification: Fine, illitic, mesic Aeric Epiaqualfs

Typical Pedon for MLRA 110

Blount silt loam, 0 to 2 percent slopes, in Livingston County, Illinois; at an elevation of 705 feet; 2,480 feet south and 1,203 feet west of the northeast corner of sec. 29, T. 26 N., R. 6 E.; USGS Fairbury topographic quadrangle; lat. 40 degrees 41 minutes 39 seconds N. and long. 88 degrees 32 minutes 59 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; few fine roots; moderately acid; abrupt smooth boundary.

E—7 to 13 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate thin platy structure; friable; few fine roots; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly acid; abrupt smooth boundary.

2Bt1—13 to 17 inches; brown (10YR 5/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; moderately acid; clear smooth boundary.

2Bt2—17 to 26 inches; grayish brown (10YR 5/2) silty clay; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 3 percent gravel; slightly acid; clear smooth boundary.

2Bt3—26 to 32 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; common distinct gray (5Y 5/1) clay films on faces of peds; many medium prominent gray (5Y 6/1) iron depletions in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Cd—32 to 60 inches; 60 percent light olive brown (2.5Y 5/4) and 40 percent gray (5Y 6/1) silty clay loam; massive; very firm; common medium prominent white (10YR 8/1) calcium carbonate concretions throughout; 5 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 18 inches
Depth to carbonates: 19 to 40 inches
Thickness of the solum: 20 to 48 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture—silt loam

Bt or 2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam or silty clay

2Cd horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or clay loam
Content of gravel—5 to 15 percent

Bowes Series

Drainage class: Well drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Slope range: 0 to 6 percent

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

Typical Pedon for MLRA 95B

Bowes silt loam, 0 to 2 percent slopes, in Kane County, Illinois; at an elevation of 920 feet; 330 feet north and 330 feet west of the center of sec. 19, T. 42 N., R. 8 E.; USGS Elgin topographic quadrangle; lat. 42 degrees 06 minutes 13 seconds N. and long. 88 degrees 20 minutes 43 seconds W., NAD 27:

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

E—9 to 13 inches; yellowish brown (10YR 5/4) silt loam, very pale brown (10YR 7/4) dry; weak thick platy structure parting to weak fine granular; friable; slightly acid; clear smooth boundary.

Bt1—13 to 19 inches; brown (10YR 4/3) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common distinct dark brown (10YR 3/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—19 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to moderate fine subangular blocky; firm; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; gradual smooth boundary.

Bt3—28 to 36 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt4—36 to 43 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; common distinct brown (10YR 4/3) clay films on faces of peds; 2 percent gravel; moderately acid; clear smooth boundary.

2Bt5—43 to 46 inches; brown (10YR 4/3) gravelly clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few distinct dark yellowish brown (10YR 3/4) clay films on faces of peds; 22 percent gravel; 5 percent dolomitic cobbles; slightly alkaline; clear smooth boundary.

2Bt6—46 to 51 inches; dark brown (7.5YR 3/2) very gravelly sandy loam; weak medium subangular blocky structure; friable; common distinct very dark brown (7.5YR 2/2) organo-clay films on pebbles and occurring as bridges between sand grains; 40 percent gravel; 10 percent dolomitic cobbles; slightly alkaline; clear smooth boundary.

2C—51 to 61 inches; brown (7.5YR 4/4) very gravelly sand; single grain; loose; 45 percent gravel; 10 percent dolomitic cobbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: 28 to 60 inches
Depth to sandy and gravelly deposits: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Thickness of the solum: 40 to 65 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 or 4
Texture—silt loam

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

2Bt horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture—the gravelly or very gravelly analogs of loam, sandy loam, sandy clay loam, clay loam, or loamy sand
Content of gravel—15 to 60 percent

2C horizon:
Hue—7.5YR or 10YR

Value—4 to 7
Chroma—3 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—15 to 75 percent

Brenton Series

Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 95B

Brenton silt loam, 0 to 2 percent slopes, in McHenry County, Illinois; at an elevation of 950 feet; 2,490 feet south and 2,240 feet east of the northwest corner of sec. 18, T. 46 N., R. 7 E.; USGS Hebron topographic quadrangle; lat. 42 degrees 27 minutes 55 seconds N. and long. 88 degrees 27 minutes 48 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; abrupt smooth boundary.

A—8 to 13 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; neutral; clear smooth boundary.

Bt1—13 to 18 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine very dark gray (10YR 3/1) iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bt2—18 to 25 inches; light olive brown (2.5Y 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; many 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 and in pores; common fine very dark gray (10YR 3/1) iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation and gray (10YR 6/1) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—25 to 35 inches; light olive brown (2.5Y 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine very dark gray (10YR 3/1) iron and manganese oxide concretions throughout; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent gray (10YR 6/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Btg—35 to 43 inches; grayish brown (2.5Y 5/2) loam; moderate medium prismatic structure; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine and medium very dark gray (10YR 3/1) iron and manganese oxide concretions throughout; many fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine distinct gray (10YR 6/1) iron depletions in the matrix; slightly alkaline; clear smooth boundary.

2Cg—43 to 60 inches; 60 percent grayish brown (2.5Y 5/2), 30 percent yellowish brown (10YR 5/6), and 10 percent gray (10YR 6/1), stratified loam and silt loam; massive; friable; few fine very dark gray (10YR 3/1) iron and manganese oxide concretions throughout; 1 percent gravel; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of loess or silty material: 24 to 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 40 to 60 inches

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

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

2B horizon:
Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6
Chroma—2 to 6
Texture—silt loam, sandy loam, loam, or clay loam

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam, sandy loam, loam, clay loam, or loamy sand
Content of gravel—less than 15 percent

Camden Series

Drainage class: Well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 5 to 10 percent

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

Typical Pedon for MLRA 95B

Camden silt loam, 0 to 2 percent slopes, in Bureau County, Illinois; at an elevation of 855 feet; 100 feet south and 1,700 feet west of the northeast corner of sec. 18, T. 45 N., R. 5 E.; USGS Capron topographic quadrangle; lat. 42 degrees 23 minutes 06 seconds N. and long. 88 degrees 41 minutes 34 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; abrupt smooth boundary.

BE—9 to 14 inches; dark yellowish brown (10YR 4/4) silt loam; weak thick platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots; few distinct brown (10YR 4/3) clay films and very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; slightly acid; clear smooth boundary.

Bt1—14 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; few distinct brown (10YR 4/3) clay films and very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; moderately acid; clear smooth boundary.

Bt2—21 to 29 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; moderately acid; clear wavy boundary.

2Bt3—29 to 37 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; 1 percent gravel; moderately acid; clear wavy boundary.

2Bt4—37 to 51 inches; dark yellowish brown (10YR 4/4) sandy clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; 1 percent gravel; slightly acid; clear wavy boundary.

2Bt5—51 to 60 inches; brown (7.5YR 4/4) sandy clay loam; weak medium subangular blocky structure; firm; few distinct dark brown (7.5YR 3/4) clay films on faces of peds and in pores; 3 percent gravel; neutral; clear smooth boundary.

2C1—60 to 71 inches; 45 percent brown (10YR 4/3), 45 percent dark yellowish brown (10YR 4/4), and 10 percent very dark grayish brown (10YR 3/2), stratified coarse sandy loam and loam; massive; friable; 4 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

2C2—71 to 80 inches; brown (10YR 5/3) gravelly sandy loam; massive; friable; 25 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of loess or silty material: 24 to 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 40 to 65 inches

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

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

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam, loam, sandy loam, clay loam, or sandy clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam, loam, or sandy loam with strata of coarser textures
Content of gravel—less than 13 percent

Campton Series

Drainage class: Moderately well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess and the underlying outwash
Slope range: 0 to 5 percent

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

Typical Pedon for MLRA 95B

Campton silt loam, 2 to 5 percent slopes, in Kane County, Illinois; at an elevation of 870 feet; 1,520 feet south and 2,275 feet west of the northeast corner of sec. 27, T. 40 N., R. 6 E.; USGS Maple Park topographic quadrangle; lat. 41 degrees 55 minutes 15 seconds N. and long. 88 degrees 32 minutes 02 seconds W., NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common very fine roots; neutral; abrupt smooth boundary.

Bt1—8 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and pores; few distinct light gray (10YR 7/2) clay depletions on faces of peds; neutral; clear smooth boundary.

Bt2—13 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common distinct light gray (10YR 7/2) clay depletions on faces of peds and in pores; neutral; gradual wavy boundary.

Bt3—19 to 27 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine irregular black (7.5YR 2.5/1) very weakly cemented manganese concretions throughout; common fine faint brown (7.5YR 5/4) and common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear wavy boundary.

Bt4—27 to 33 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine irregular black (7.5YR 2.5/1) very weakly cemented manganese concretions throughout; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual wavy boundary.

Bt5—33 to 45 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse prismatic structure parting to weak medium subangular blocky; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine irregular black (7.5YR 2.5/1) very weakly cemented manganese concretions throughout; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation in the matrix; many fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual wavy boundary.

2BC—45 to 51 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable; few fine irregular black (7.5YR 2.5/1) very weakly cemented manganese concretions throughout; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 4 percent gravel; strongly acid; clear wavy boundary.

2C1—51 to 58 inches; yellowish brown (10YR 5/4) loamy sand; single grain; loose; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 4 percent gravel; strongly acid; gradual wavy boundary.

2C2—58 to 65 inches; dark yellowish brown (10YR 4/4) sandy loam; massive; very friable; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 2 percent gravel; slightly acid; gradual wavy boundary.

2Cg—65 to 80 inches; light brownish gray (2.5Y 6/2) loam; massive; friable; common fine irregular black (7.5YR 2.5/1) very weakly cemented manganese concretions throughout; common fine prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation in the matrix; 1 percent gravel; slightly acid.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 48 to 70 inches

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

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

2Bt or 2BC horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam, loam, sandy loam, clay loam, or sandy clay loam
Content of gravel—less than 15 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam, loam, sandy loam, loamy sand, or the gravelly analogs of these textures
Content of gravel—less than 20 percent

Casco Series

Drainage class: Somewhat excessively drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains, end moraines, and kames
Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 4 to 30 percent

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Inceptic Hapludalfs

Typical Pedon for MLRA 95B

Casco loam, 2 to 6 percent slopes, in McHenry County, Illinois; at an elevation of 1,054 feet; 100 feet north and 200 feet east of the southwest corner of SE$^1/_4$ sec. 6, T. 14 N., R. 20 E.; USGS Dundee, Wisconsin, topographic quadrangle; lat. 43 degrees 42 minutes 13 seconds N. and long. 88 degrees 08 minutes 57 seconds W., NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure parting to moderate medium granular; friable; common fine roots; slightly acid; abrupt smooth boundary.

Bt1—8 to 13 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; common fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—13 to 17 inches; brown (7.5YR 4/4) sandy clay loam; moderate medium subangular blocky structure; firm; common fine roots; common faint dark brown (7.5YR 3/4) clay films on faces of peds; common distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds and on gravel near the lower boundary; about 9 percent gravel in the lower part; neutral; abrupt wavy boundary.

2C—17 to 60 inches; brown (10YR 5/3), stratified gravelly coarse sand, very gravelly coarse sand, and extremely gravelly coarse sand; single grain; loose; about 60 percent gravel as an average; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to sandy and gravelly deposits: 10 to 20 inches

Depth to carbonates: 10 to 20 inches
Thickness of the solum: 10 to 20 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 or 3
Texture—loam or silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam, sandy clay loam, loam, or the gravelly analogs of these textures
Content of gravel—less than 35 percent

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 or 4
Texture—sand or coarse sand or the gravelly, very gravelly, or extremely gravelly analogs of these textures
Content of gravel—10 to 70 percent

Catlin Series

Drainage class: Moderately well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess and the underlying till
Slope range: 0 to 5 percent

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

Typical Pedon for MLRA 108

Catlin silt loam, 0 to 2 percent slopes, in Ogle County, Illinois; at an elevation of 830 feet; 650 feet south and 571 feet east of the northwest corner of sec. 36, T. 42 N., R. 2 E.; USGS Fairdale topographic quadrangle; lat. 42 degrees 04 minutes 38 seconds N. and long. 88 degrees 57 minutes 17 seconds W., NAD 27:

Ap—0 to 11 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

BA—11 to 18 inches; brown (10YR 4/3) silt loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few faint dark brown (10YR 3/3) organic coatings on faces of peds; common distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; moderately acid; clear smooth boundary.

Bt1—18 to 23 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to strong fine and medium subangular blocky; friable; 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; strongly acid; clear smooth boundary.

Bt2—23 to 31 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to strong medium angular and subangular blocky; firm; few distinct very dark brown (10YR 2/2) organo-clay films in root channels; 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 black (N 2.5/0) weakly cemented iron and manganese oxide concretions throughout; few fine distinct brown (7.5YR 4/4) and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Bt3—31 to 36 inches; yellowish brown (10YR 5/4) silty clay loam; strong medium prismatic structure parting to strong medium angular and subangular blocky; firm; common prominent grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; few black (N 2.5/0) weakly cemented iron and manganese oxide concretions throughout; few fine distinct brown (7.5YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Bt4—36 to 44 inches; yellowish brown (10YR 5/4), brown (7.5YR 4/4), and light brownish gray (2.5Y 6/2) silty clay loam; weak coarse prismatic structure parting to moderate coarse subangular blocky; firm; many faint grayish brown (2.5Y 5/2) clay films on faces of peds; common distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; few distinct very dark brown (10YR 2/2) organo-clay films in root channels; slightly acid; abrupt smooth boundary.

2Bt5—44 to 49 inches; dark yellowish brown (10YR 4/4) clay loam; weak coarse subangular blocky structure; firm; few faint brown (10YR 5/3) clay films mainly on vertical faces of peds; few distinct very dark brown (10YR 2/2) organo-clay films in root channels; slightly alkaline; clear smooth boundary.

2C—49 to 60 inches; yellowish brown (10YR 5/4) loam; massive; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; about 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Thickness of the solum: 45 to 65 inches

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

Bt or BA horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 6
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 8
Texture—loam, clay loam, or silt loam
Content of gravel—less than 10 percent

Chenoa Series

Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part; slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 0 to 2 percent

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon for MLRA 110

Chenoa silty clay loam, 0 to 2 percent slopes, in Livingston County, Illinois; at an elevation of 692 feet; 100 feet south and 825 feet west of the northeast corner of sec. 2, T. 27 N., R. 3 E.; USGS Flanagan South topographic quadrangle; lat. 40 degrees 47 minutes 19 seconds N. and long. 88 degrees 50 minutes 14 seconds W., NAD 27:

Ap—0 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

BA—12 to 16 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt1—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Bt2—21 to 26 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—26 to 32 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt4—32 to 36 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; slightly alkaline; clear smooth boundary.

2C—36 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive; firm; few prominent light brownish gray (10YR 6/2) coatings on vertical cleavage planes; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of silty material: 20 to 40 inches
Depth to carbonates: 25 to 45 inches
Thickness of the solum: 25 to 50 inches

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

Bt or BA horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silty clay

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of gravel—2 to 10 percent

Clare Series

Drainage class: Moderately well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 5 percent

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

Typical Pedon for MLRA 95B

Clare silt loam, 0 to 2 percent slopes, in De Kalb County, Illinois; at an elevation of 750 feet; 840 feet north and 2,300 feet east of the southwest corner of sec. 7, T. 42 N., R. 3 E.; USGS Cherry Valley topographic quadrangle; lat. 42 degrees 07 minutes 36 seconds N. and long. 88 degrees 55 minutes 53 seconds W., NAD 27:

Ap—0 to 5 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; neutral; clear smooth boundary.

A—5 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium subangular blocky structure; friable; common very fine roots; neutral; clear smooth boundary.

BA—11 to 14 inches; 60 percent dark yellowish brown (10YR 4/4) and 40 percent very dark grayish brown (10YR 3/2) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; neutral; gradual wavy boundary.

Bt1—14 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to weak fine and medium subangular blocky; friable; common fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds: common distinct brown (10YR 4/3) clay films on faces of peds and in pores; neutral; gradual wavy boundary.

Bt2—21 to 28 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; common fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; slightly acid; gradual wavy boundary.

Bt3—28 to 32 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium and coarse subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium prominent grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly acid; gradual wavy boundary.

2Bt4—32 to 37 inches; dark yellowish brown (10YR 4/4) loam; moderate medium and coarse subangular blocky structure; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium prominent grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear wavy boundary.

2Bt5—37 to 45 inches; brown (7.5YR 4/4) sandy loam; weak medium and coarse angular blocky structure; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium prominent dark grayish brown (10YR 4/2) iron depletions in the matrix; 2 percent gravel; neutral; gradual wavy boundary.

2Bt6—45 to 61 inches; brown (7.5YR 4/4) clay loam; weak medium and coarse angular blocky structure; friable; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds; common medium rounded black (10YR 2/1) very weakly cemented manganese concretions throughout; common medium rounded yellowish brown (10YR 5/6) very weakly cemented iron oxide concretions throughout; 5 percent gravel; neutral; clear smooth boundary.

2C—61 to 80 inches; brown (7.5YR 5/4), stratified gravelly sandy loam and loam; massive; friable; 17 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 40 to 70 inches

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

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

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam, sandy loam, clay loam, silt loam, sandy clay loam, or silty clay loam
Content of gravel—less than 15 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam, sandy loam, loam, silt loam, or the gravelly analogs of these textures with strata of loamy sand or sand
Content of gravel—2 to 20 percent

Danabrook Series

Drainage class: Moderately well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 0 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Danabrook soil in map unit 512C2 has a thinner mollic epipedon than is defined as the range for the series. This soil is classified as fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs.

Typical Pedon for MLRA 95B

Danabrook silt loam, 2 to 5 percent slopes, in De Kalb County, Illinois; at an elevation of 872 feet; 176 feet south and 2,334 feet west of the northeast corner of sec. 5, T. 42 N., R. 5 E.; USGS Riley topographic quadrangle; lat. 42 degrees 09 minutes 09 seconds N. and long. 88 degrees 40 minutes 28 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak very fine and fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

A—8 to 13 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

Bt1—13 to 21 inches; brown (10YR 4/3) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) clay films and very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; neutral; clear smooth boundary.

Bt2—21 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine dark brown (7.5YR 3/3) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

Bt3—26 to 33 inches; brown (10YR 5/3) silty clay loam; weak 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 and in pores; common fine dark brown (7.5YR 3/3) very weakly cemented iron and manganese oxide concretions throughout; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear wavy boundary.

2Bt4—33 to 42 inches; brown (7.5YR 5/4) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine dark brown (7.5YR 3/3) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 6 percent gravel; slightly alkaline; clear wavy boundary.

2BC—42 to 50 inches; brown (7.5YR 5/4) loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2C—50 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 10 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of loess or silty material: 22 to 40 inches
Depth to carbonates: 30 to 50 inches
Thickness of the solum: 30 to 55 inches

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

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

2Bt or 2BC horizon:
Hue—7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, clay loam, or sandy clay loam
Content of gravel—2 to 15 percent

2C horizon:
Hue—7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—loam or sandy loam
Content of gravel—2 to 15 percent

Dresden Series

Drainage class: Well drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains, stream terraces, and kames
Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 6 percent

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs

Typical Pedon for MLRA 95B

Dresden silt loam, 2 to 4 percent slopes, in Kane County, Illinois; at an elevation of 805 feet; 720 feet south and 1,340 feet west of the center of sec. 21, T. 41 N., R. 8 E.; USGS Elgin topographic quadrangle; lat. 42 degrees 01 minute 10 seconds N. and long. 88 degrees 20 minutes 10 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak very fine granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.

BE—7 to 11 inches; brown (10YR 4/3) silt loam; weak very fine subangular blocky structure; friable; common very fine roots; few distinct very dark

grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.
Bt1—11 to 19 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; common distinct dark brown (10YR 3/3) clay films on faces of peds; slightly acid; clear smooth boundary.
2Bt2—19 to 27 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 5 percent gravel; slightly acid; clear smooth boundary.
2Bt3—27 to 32 inches; dark yellowish brown (10YR 4/4) sandy clay loam; weak coarse subangular blocky structure; friable; few very fine roots; common distinct brown (7.5YR 4/3) and dark brown (7.5YR 3/3) clay films on faces of peds; 13 percent gravel; neutral; abrupt smooth boundary.
3C—32 to 60 inches; yellowish brown (10YR 5/4) gravelly sand; single grain; loose; 34 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 20 inches
Depth to sandy and gravelly deposits: 24 to 40 inches
Depth to carbonates: 24 to 40 inches
Thickness of the solum: 24 to 40 inches

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

Bt or 2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam, clay loam, loam, sandy clay loam, or the gravelly analogs of these textures
Content of gravel—less than 35 percent

3C horizon:
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—2 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—20 to 75 percent

Drummer Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Outwash plains and ground moraines
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 108

Drummer silty clay loam, 0 to 2 percent slopes, in Champaign County, Illinois; at an elevation of 715 feet; 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., NAD 27:

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 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 and 5/6) masses of iron accumulation in the matrix; many wormholes; 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 4/0) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

Btg2—32 to 41 inches; gray (N 5/0) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few fine roots; few distinct dark gray (N 4/0) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

2Btg3—41 to 47 inches; gray (N 5/0) 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 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 accumulation in the matrix; many medium distinct gray (N 5/0) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of loess or silty material: 40 to 60 inches
Depth to carbonates: 40 to 65 inches
Thickness of the solum: 42 to 65 inches

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

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

2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—loam, clay loam, silt loam, silty clay loam, or sandy loam
Content of gravel—less than 7 percent

2Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 7
Chroma—0 to 8
Texture—stratified loam, silt loam, clay loam, or sandy loam with strata of loamy sand
Content of gravel—less than 15 percent

Dunham Series

Drainage class: Poorly drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 95B

Dunham silty clay loam, 0 to 2 percent slopes, in McHenry County, Illinois; at an elevation of 877 feet: 939 feet south and 81 feet west of the center of sec. 15, T. 45 N., R. 5 E.; USGS Capron topographic quadrangle; lat. 42 degrees 22 minutes 33 seconds N. and long. 88 degrees 38 minutes 19 seconds W., NAD 27:

Ap—0 to 6 inches; black (N 2.5/0) silty clay loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate fine and medium granular; friable; common very fine roots; neutral; clear smooth boundary.

A—6 to 12 inches; black (N 2.5/0) silty clay loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure parting to moderate fine and medium granular; friable; common very fine roots; moderately acid; abrupt smooth boundary.

BAg—12 to 15 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium subangular blocky structure; friable; common very fine roots; common distinct very dark gray (2.5Y 3/1) organic coatings on faces of peds and in pores; few fine strong brown (7.5YR 5/6) very weakly cemented iron oxide concretions throughout; common fine distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg1—15 to 24 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; common very fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; very few distinct very dark gray (2.5Y 3/1) organic coatings in root channels and in pores; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine strong brown (7.5YR 5/6) very weakly cemented iron oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) and common fine and medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; slightly acid; gradual smooth boundary.

Btg2—24 to 31 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; very few distinct very dark grayish brown (2.5Y 3/2) organic coatings in root channels and in pores; few fine dark brown (7.5YR 3/4) very weakly cemented iron oxide concretions throughout; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Btg3—31 to 35 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; very few distinct very dark grayish brown (2.5Y 3/2) organic coatings in root channels and in pores; many medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 1 percent gravel; neutral; clear smooth boundary.

2Btg4—35 to 39 inches; olive gray (5Y 4/2) clay loam; weak medium subangular blocky structure; friable; few very fine roots; few distinct olive gray (5Y 4/2) clay films on faces of peds; very few distinct dark olive gray (5Y 3/2) organic coatings in root channels and in pores; many medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 3 percent gravel; neutral; abrupt smooth boundary.

3Cg—39 to 44 inches; olive gray (5Y 5/2) gravelly sandy loam; massive; very friable; few very fine roots; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; common fine faint light olive gray (5Y 6/2) iron depletions in the matrix; 25 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

3C—44 to 60 inches; brown (10YR 5/3) gravelly loamy sand and gravelly loamy fine sand; single grain; loose; few very fine roots; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium faint grayish brown (10YR 5/2) iron depletions in the matrix; 25 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of loess or silty material: 24 to 50 inches
Depth to sandy and gravelly deposits: 32 to 55 inches
Depth to carbonates: 30 to 50 inches
Thickness of the solum: 36 to 55 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam or silt loam

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

2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—5 or 6
Chroma—0 to 2
Texture—loam, silt loam, clay loam, sandy clay loam, sandy loam, or the gravelly analogs of these textures
Content of gravel—less than 20 percent

3Cg or 3C horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 7
Chroma—0 to 8
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, loamy coarse sand, fine sand, loamy fine sand, or sandy loam
Content of gravel—15 to 70 percent

Elburn Series

Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess and the underlying outwash
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 108

Elburn silt loam, 0 to 2 percent slopes, in Logan County, Illinois; at an elevation of 600 feet; 1,320 feet north and 50 feet west of the southeast corner of sec. 2, T. 20 N., R. 2 W.; USGS Lincoln East topographic quadrangle; lat. 40 degrees 12 minutes 30 seconds N. and long. 89 degrees 16 minutes 27 seconds W., NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; slightly alkaline; abrupt smooth boundary.

A—7 to 13 inches; black (10YR 2/1) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; slightly alkaline; clear smooth boundary.

Bt1—13 to 17 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common distinct black (10YR 2/1) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—17 to 25 inches; brown (10YR 4/3) 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 black (5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt3—25 to 35 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate medium and coarse subangular blocky; firm; very few distinct very dark gray (10YR 3/1) and black (10YR 2/1) organo-clay films in wormholes and root channels and on faces of peds; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Bt4—35 to 44 inches; yellowish brown (10YR 5/8) and light olive brown (2.5Y 5/4) silty clay loam; weak coarse prismatic structure parting to moderate coarse subangular blocky; friable; very few distinct very dark gray (10YR 3/1) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; abrupt smooth boundary.

2Btg—44 to 50 inches; light brownish gray (10YR 6/2) and strong brown (7.5YR 5/8) sandy loam; weak coarse subangular blocky structure; friable; very few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear smooth boundary.

2BCg—50 to 65 inches; dark grayish brown (10YR 4/2), strong brown (7.5YR 5/8), and yellowish brown (10YR 5/6) sandy loam with 1- to 2-inch strata of loam; weak coarse subangular blocky structure; friable; about 5 percent gravel; slightly alkaline; clear smooth boundary.

2C1—65 to 77 inches; brown (10YR 5/3), stratified sandy loam and sand; massive; friable; common medium prominent strong brown (7.5YR 5/8) and distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; about 5 percent gravel; slightly alkaline; clear smooth boundary.

2C2—77 to 80 inches; dark grayish brown (10YR 4/2) and brown (10YR 4/3), stratified coarse sandy loam and sand; massive; friable; about 5 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: 40 to 70 inches
Thickness of the solum: 45 to 70 inches

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

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

2Btg or 2BCg horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—loam, silt loam, sandy loam, clay loam, or silty clay loam
Content of gravel—less than 15 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—loam, sandy loam, or silt loam with strata of loamy sand or sand
Content of gravel—less than 15 percent

Elliott Series

Drainage class: Somewhat poorly drained
Permeability: Moderately slow in the upper part; slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 0 to 4 percent

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon for MLRA 110

Elliott silt loam, 0 to 2 percent slopes, in Livingston County, Illinois; at an elevation of 704 feet; 690 feet south and 2,436 feet west of the center of sec. 21, T. 29 N., R. 8 E.; USGS Cullom topographic quadrangle; lat. 40 degrees 58 minutes 11 seconds N. and long. 88 degrees 19 minutes 58 seconds W., NAD 27:

Ap—0 to 6 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—6 to 11 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; slightly acid; clear smooth boundary.

Bt1—11 to 16 inches; light olive brown (2.5Y 5/4) silty clay; moderate fine subangular blocky structure; friable; common fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; neutral; clear smooth boundary.

2Bt2—16 to 23 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

2Bt3—23 to 28 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 1 percent gravel; neutral; clear smooth boundary.

2Bt4—28 to 35 inches; olive brown (2.5Y 4/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; few fine roots; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium white (10YR 8/1) calcium carbonate concretions throughout; 1 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Bt5—35 to 41 inches; olive brown (2.5Y 4/4) silty clay loam; weak fine prismatic structure parting to moderate medium angular blocky; firm; few fine roots; common distinct gray (5Y 6/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 2 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

2C—41 to 60 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; common fine prominent gray (5Y 5/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of loess or silty material: Less than 20 inches
Depth to carbonates: 17 to 40 inches
Thickness of the solum: 20 to 45 inches

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

Bt or 2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam
Content of gravel—less than 15 percent

Elpaso Series

Drainage class: Poorly drained
Permeability: Moderate in the upper part; moderately slow in the lower part

Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 108

Elpaso silty clay loam, 0 to 2 percent slopes, in Woodford County, Illinois; at an elevation of 715 feet; 210 feet north and 320 feet west of the southeast corner of sec. 30, T. 27 N., R. 2 E.; USGS Benson topographic quadrangle; lat. 40 degrees 46 minutes 03 seconds N. and long. 89 degrees 01 minute 34 seconds W., NAD 27:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak very fine granular structure; firm; many very fine and fine roots; moderately acid; abrupt smooth boundary.

A—7 to 21 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; firm; many very fine and fine roots; moderately acid; gradual wavy boundary.

Bg—21 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; many fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

Btg1—35 to 44 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) and few fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

2Btg2—44 to 53 inches; dark grayish brown (2.5Y 4/2) silt loam; weak medium and coarse subangular blocky structure; friable; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) and fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 5 percent pebbles; slightly alkaline; clear wavy boundary.

2Btg3—53 to 69 inches; dark grayish brown (2.5Y 4/2) and olive brown (2.5Y 4/4) silty clay loam; weak medium and coarse prismatic structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine distinct olive gray (5Y 5/2) iron depletions throughout; 4 percent pebbles; slightly effervescent starting at a depth of 63 inches; slightly alkaline; diffuse wavy boundary.

2C—69 to 80 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; few fine black (10YR 2/1) very weakly cemented iron and manganese concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent olive gray (5Y 5/2) iron depletions throughout; 4 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of loess or silty material: 40 to 60 inches
Depth to carbonates: 35 to 65 inches
Thickness of the solum: 45 to 75 inches

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

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

2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 4
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—1 to 10 percent

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8

Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—1 to 10 percent

Flanagan Series

Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess and the underlying till
Slope range: 0 to 2 percent

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon for MLRA 108

Flanagan silt loam, 0 to 2 percent slopes, in Champaign County, Illinois; at an elevation of 730 feet; 1,405 feet north and 1,607 feet east of the southwest corner of sec. 19, T. 19 N., R. 9 E.; USGS Urbana topographic quadrangle; lat. 40 degrees 05 minutes 14 seconds N. and long. 88 degrees 13 minutes 57 seconds W., NAD 27:

A1—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; slightly acid; gradual smooth boundary.
A2—8 to 15 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; slightly acid; clear smooth boundary.
A3—15 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; slightly acid; clear smooth boundary.
Bt1—18 to 23 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine faint brown (10YR 4/3) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
Bt2—23 to 32 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate medium subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine faint brown (10YR 5/3 and 4/3) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
Bt3—32 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine faint light yellowish brown (10YR 6/4) and distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.
Bt4—38 to 45 inches; 40 percent yellowish brown (10YR 5/6), 30 percent light brownish gray (10YR 6/2), and 30 percent brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; slightly acid; gradual smooth boundary.
2Bt5—45 to 49 inches; 35 percent yellowish brown (10YR 5/4), 35 percent light olive brown (2.5Y 5/4), and 30 percent light brownish gray (10YR 6/2) silt loam; weak coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; 5 percent fine gravel; neutral; abrupt smooth boundary.
2C—49 to 60 inches; yellowish brown (10YR 5/4) loam; massive; firm; common medium rounded white (10YR 8/1) weakly cemented calcium carbonate nodules throughout; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent fine gravel; slightly effervescent; 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: 45 to 65 inches
Thickness of the solum: 45 to 70 inches

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

Bt horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 6
Texture—silty clay loam or silty clay

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—1 to 15 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6

Texture—loam or silt loam
Content of gravel—1 to 15 percent

Fox Series

Drainage class: Well drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains, end moraines, and kames
Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 12 percent

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

Typical Pedon for MLRA 95B

Fox silt loam, 0 to 2 percent slopes, in Jefferson County, Wisconsin; at an elevation of 850 feet; 1,600 feet south and 1,930 feet east of the northwest corner of sec. 32, T. 7 N., R. 13 E.; USGS Lake Mills, Wisconsin, topographic quadrangle; lat. 43 degrees 01 minute 59 seconds N. and long. 88 degrees 59 minutes 10 seconds W., NAD 27:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak very fine subangular blocky structure; very friable; slightly acid; abrupt smooth boundary.
Bt1—10 to 15 inches; dark yellowish brown (10YR 4/4) silt loam; weak very fine subangular blocky structure; friable; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; slightly acid; clear wavy boundary.
Bt2—15 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; few faint dark brown (10YR 3/3) clay films on faces of peds; moderately acid; clear wavy boundary.
2Bt3—21 to 29 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; common prominent very dark grayish brown (10YR 3/2) clay films on faces of peds; slightly acid; clear wavy boundary.
2Bt4—29 to 33 inches; brown (7.5YR 4/4) sandy clay loam; weak medium subangular blocky structure; firm; common distinct dark brown (7.5YR 3/2) clay films on faces of peds; about 5 percent gravel; slightly alkaline; clear wavy boundary.
3C1—33 to 45 inches; yellowish brown (10YR 5/4), stratified gravelly sand and cobbly sand; single grain; loose; about 30 percent gravel and 30 percent cobbles as an average; strongly effervescent; moderately alkaline; clear wavy boundary.
3C2—45 to 60 inches; light yellowish brown (10YR 6/4), stratified very gravelly sand, extremely gravelly sand, and gravel; single grain; loose; about 65 percent gravel as an average; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 24 inches
Depth to sandy and gravelly deposits: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Thickness of the solum: 20 to 40 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam or loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—3 or 4
Texture—clay loam, loam, sandy clay loam, sandy loam, or the gravelly analogs of these textures
Content of gravel—less than 35 percent

3C horizon:
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—3 or 4
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand or coarse sand
Content of gravel—15 to 70 percent

Graymont Series

Drainage class: Moderately well drained
Permeability: Moderate in the upper part; slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 2 to 5 percent

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

Typical Pedon for MLRA 110

Graymont silt loam, 2 to 5 percent slopes, in Livingston County, Illinois; at an elevation of 704 feet; 2,100 feet north and 100 feet east of the southwest corner of sec. 28, T. 28 N., R. 3 E.; USGS Flanagan Southwest topographic quadrangle; lat. 40 degrees 51 minutes 40 seconds N. and long. 88 degrees 53 minutes 30 seconds W., NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

AB—7 to 12 inches; very dark brown (10YR 2/2) silt loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate fine angular blocky; friable; few very fine roots; slightly acid; clear smooth boundary.

Bt1—12 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine angular blocky structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—19 to 24 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—24 to 28 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Bt4—28 to 33 inches; brown (10YR 5/3) silt loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint light brownish gray (10YR 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

2Btg—33 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure; firm; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 3 percent gravel; neutral; clear smooth boundary.

2Cg—38 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation in the matrix; few fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; few fine white (10YR 8/1) calcium carbonate concretions throughout; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: 24 to 40 inches
Thickness of the solum: 24 to 45 inches

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

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of gravel—1 to 10 percent

2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of gravel—2 to 15 percent

Grundelein Series

Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains and stream terraces

Parent material: Loess or other silty material and the underlying outwash over sandy and gravelly deposits
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 95B

Grundelein silt loam, 0 to 2 percent slopes, in McHenry County, Illinois; at an elevation of 885 feet; 1,875 feet south and 2,526 feet west of the northeast corner of sec. 15, T. 45 N., R. 5 E.; USGS Capron topographic quadrangle; lat. 42 degrees 22 minutes 48 seconds N. and long. 88 degrees 38 minutes 14 seconds W., NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure parting to moderate fine and medium granular; friable; common very fine roots; neutral; clear smooth boundary.

A—7 to 11 inches; very dark brown (10YR 2/2) silt loam, brown (10YR 4/3) dry; weak medium subangular blocky structure; friable; common very fine roots; common distinct black (10YR 2/1) organic coatings on faces of peds; neutral; abrupt smooth boundary.

Bt1—11 to 19 inches; brown (10YR 5/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct black (10YR 2/1) organic coatings on faces of peds and in pores; few fine black (5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt2—19 to 29 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; many medium distinct light olive brown (2.5Y 5/6) masses of iron accumulation in the matrix; many fine and medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—29 to 33 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; few distinct olive brown (2.5Y 4/4) and dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium very dark gray (10YR 3/1) wormcasts; few fine black (5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many medium and coarse distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear wavy boundary.

2BCg—33 to 39 inches; grayish brown (2.5Y 5/2) clay loam; weak medium and coarse subangular blocky structure; friable; few very fine roots; common medium very dark brown (10YR 2/2) wormcasts; few fine black (5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine and medium prominent brownish yellow (10YR 6/6) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 5 percent gravel; neutral; clear wavy boundary.

3C1—39 to 46 inches; yellowish brown (10YR 5/4), stratified gravelly sandy loam and gravelly loamy sand; massive; very friable; common fine distinct brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; 20 percent gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

3C2—46 to 60 inches; brown (10YR 5/3), stratified gravelly loamy sand, gravelly sand, and gravelly sandy loam; single grain; loose; common fine distinct brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; 20 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of loess or silty material: 24 to 45 inches
Depth to sandy and gravelly deposits: 32 to 50 inches
Depth to carbonates: 30 to 50 inches
Thickness of the solum: 32 to 50 inches

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

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

2Bt or 2BC horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, sandy clay loam, silt loam, sandy loam, or the gravelly analogs of these textures
Content of gravel—less than 20 percent

3C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 7
Chroma—1 to 8
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, sandy loam, coarse sand, loamy coarse sand, or coarse sandy loam
Content of gravel—15 to 70 percent

Harpster Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Outwash plains and ground moraines
Parent material: Calcareous loess or other silty material over drift
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 108

Harpster silty clay loam, 0 to 2 percent slopes, in Ford County, Illinois; at an elevation of 722 feet; 855 feet south and 70 feet west of the northeast corner of sec. 20, T. 23 N., R. 7 E.; USGS Gibson City West topographic quadrangle; lat. 40 degrees 26 minutes 24 seconds N. and long. 88 degrees 25 minutes 23 seconds W., NAD 27:

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; few snail shells; common fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 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 snail shells; few fine prominent dark yellowish brown (10YR 4/4) and few fine distinct olive (5Y 4/4) masses of iron accumulation in the matrix; 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) 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 loess or silty material: 36 to 60 inches
Depth to carbonates: Less than 16 inches
Thickness of the solum: 22 to 46 inches

Apk or Ak horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3

Chroma—0 or 1
Texture—silty clay loam or silt loam

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

Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam, loam, sandy loam, or clay loam
Content of gravel—less than 7 percent

Harvard Series

Drainage class: Well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 5 to 10 percent

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

Typical Pedon for MLRA 95B

Harvard silt loam, 2 to 5 percent slopes, in De Kalb County, Illinois; at an elevation of 827 feet; 1,458 feet north and 756 feet east of the southwest corner of sec. 12, T. 42 N., R. 5 E.; USGS Marengo South topographic quadrangle; lat. 42 degrees 07 minutes 43 seconds N. and long. 88 degrees 35 minutes 38 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure parting to moderate medium granular; friable; common very fine roots; neutral; abrupt smooth boundary.

Bt1—9 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; few distinct brown (10YR 4/3) clay films and very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; neutral; clear wavy boundary.

Bt2—16 to 23 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; very few very dark grayish brown (10YR 3/2) organic coatings in root channels and in pores; moderately acid; clear wavy boundary.

Bt3—23 to 30 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; slightly acid; clear wavy boundary.

2Bt4—30 to 43 inches; dark yellowish brown (10YR 4/4) sandy clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; moderately acid; clear wavy boundary.

2Bt5—43 to 56 inches; dark yellowish brown (10YR 4/4) loam; weak fine and medium subangular blocky structure; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; moderately acid; clear smooth boundary.

2C—56 to 69 inches; yellowish brown (10YR 5/4), stratified silt loam and loam; massive; friable; few very fine roots; common fine distinct grayish brown (10YR 5/2) and light olive brown (2.5Y 5/3) iron depletions in the matrix; slightly acid.

Range in Characteristics

Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 36 to 60 inches

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

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, silt loam, sandy clay loam, sandy loam, or clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR
Value—4 to 6

Chroma—3 to 6
Texture—loam, silt loam, sandy loam, or loamy sand
Content of gravel—less than 15 percent

Herbert Series

Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Epiaqualfs

Typical Pedon for MLRA 95B

Herbert silt loam, 0 to 2 percent slopes, in De Kalb County, Illinois; at an elevation of 842 feet; 405 feet south and 306 feet east of the northwest corner of sec. 14, T. 42 N., R. 4 E.; USGS Genoa topographic quadrangle; lat. 42 degrees 07 minutes 24 seconds N. and long. 88 degrees 44 minutes 36 seconds W., NAD 27:

Ap—0 to 8 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine granular structure; friable; many very fine and fine roots; slightly acid; abrupt smooth boundary.

E—8 to 12 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium and thick platy structure parting to moderate fine granular; friable; many very fine roots; few fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Bt1—12 to 16 inches; brown (10YR 4/3) silty clay loam; moderate very fine subangular blocky structure; firm; many very fine roots; common distinct discontinuous dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Bt2—16 to 20 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; many very fine roots; many distinct continuous grayish brown (10YR 5/2) clay films on faces of peds; few fine dark brown (10YR 3/3) iron and manganese oxide concretions throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt3—20 to 26 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium subangular blocky structure; firm; common very fine roots; common distinct continuous dark grayish brown (2.5Y 4/2) clay films on faces of peds; common distinct very dark brown (10YR 2/2) organic coatings in root channels; few fine dark brown (10YR 3/3) iron and manganese oxide concretions throughout; common medium prominent strong brown (7.5YR 5/6) and common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

2Bt4—26 to 33 inches; brown (7.5YR 5/4) clay loam; moderate medium angular and subangular blocky structure; firm; common very fine roots; common distinct discontinuous dark grayish brown (2.5Y 4/2) clay films on faces of peds; common distinct very dark brown (10YR 2/2) organic coatings in root channels; few fine dark brown (10YR 3/3) iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) and distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 2 percent gravel; moderately acid; clear smooth boundary.

2Bt5—33 to 36 inches; brown (7.5YR 5/3) clay loam; weak coarse angular blocky structure; firm; common very fine roots; common distinct discontinuous dark grayish brown (2.5Y 4/2) clay films on faces of peds; common distinct very dark brown (10YR 2/2) organic coatings in root channels; few fine dark brown (10YR 3/3) iron and manganese oxide concretions throughout; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 2 percent gravel; neutral; clear smooth boundary.

2C—36 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; few very fine roots; few fine light gray (10YR 7/1) very weakly cemented calcium carbonate concretions throughout; few fine prominent gray (5Y 6/1) and few fine distinct very pale brown (10YR 7/3) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: 20 to 40 inches

Depth to carbonates: 22 to 40 inches
Thickness of the solum: 22 to 40 inches

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

E horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

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

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—clay loam or loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam or sandy loam
Content of gravel—2 to 15 percent

Hooppole Series

Drainage class: Poorly drained
Permeability: Moderate in the upper part; rapid in the lower part
Landform: Outwash plains and stream terraces
Parent material: Calcareous outwash
Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls

Typical Pedon for MLRA 108

Hooppole loam, 0 to 2 percent slopes, in Bureau County, Illinois; at an elevation of 620 feet; 470 feet south and 1,940 feet west of the northeast corner of sec. 18, T. 17 N., R. 6 W.; USGS Mineral topographic quadrangle; lat. 41 degrees 27 minutes 55 seconds N. and long. 89 degrees 50 minutes 46 seconds W., NAD 27:

Apk—0 to 7 inches; black (N 2.5/0) loam, very dark gray (10YR 3/1) dry; moderate medium granular structure; friable; common fine roots; violently effervescent; slightly alkaline; abrupt smooth boundary.

Ak—7 to 12 inches; black (N 2.5/0) loam, black (10YR 2/1) dry; moderate medium granular structure; friable; few fine roots; violently effervescent; slightly alkaline; clear smooth boundary.

A—12 to 17 inches; black (10YR 2/1) loam, very dark grayish brown (10YR 3/2) dry; moderate fine subangular blocky structure parting to moderate medium granular; friable; few fine roots; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

BA—17 to 22 inches; very dark grayish brown (2.5Y 3/2) loam, dark grayish brown (2.5Y 4/2) dry; moderate fine subangular blocky structure; friable; few fine roots; common prominent black (10YR 2/1) organic coatings on faces of peds; black (10YR 2/1) loamy krotovinas and light brownish gray (10YR 6/2) sandy krotovinas; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine faint grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

Bg1—22 to 30 inches; dark grayish brown (2.5Y 4/2) loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; very dark grayish brown (2.5Y 3/2) loamy krotovinas and light brownish gray (10YR 6/2) sandy krotovinas; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine faint grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

Bg2—30 to 38 inches; olive gray (5Y 5/2) loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct very dark gray (5Y 3/1) organic coatings on faces of peds; very dark grayish brown (2.5Y 3/2) loamy krotovinas; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine faint gray (5Y 6/1) iron depletions in the matrix; 4 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

BCg—38 to 44 inches; dark grayish brown (2.5Y 4/2) sandy loam; weak medium subangular blocky structure; friable; few fine roots; common distinct very dark gray (5Y 3/1) organic coatings on faces of peds; black (10YR 2/1) loamy krotovinas; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine distinct gray (5Y 5/1) iron depletions in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

2Cg—44 to 60 inches; very dark gray (5Y 3/1) and grayish brown (2.5Y 5/2) sand; single grain; loose; few fine 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: 10 to 24 inches
Depth to sandy outwash: 40 to 60 inches
Depth to carbonates: Less than 10 inches
Thickness of the solum: 40 to 60 inches

Apk, Ak, or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—loam, silt loam, clay loam, or silty clay loam

Bg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—loam, silt loam, clay loam, sandy loam, silty clay loam, or sandy clay loam
Content of gravel—less than 10 percent

2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 4
Texture—sand or loamy sand
Content of gravel—less than 15 percent

Houghton Series

Drainage class: Very poorly drained
Permeability: Moderate
Landform: Ground moraines and outwash plains
Parent material: Herbaceous organic material
Slope range: 0 to 2 percent

Taxonomic classification: Euic, mesic Typic Haplosaprists

Typical Pedon for MLRA 108

Houghton muck, undrained, 0 to 2 percent slopes, in McHenry County, Illinois; at an elevation of 745 feet; 2,000 feet south and 1,500 feet west of the northeast corner of sec. 6, T. 44 N., R. 9 E.; USGS Wauconda topographic quadrangle; lat. 42 degrees 19 minutes 23 seconds N. and long. 88 degrees 13 minutes 25 seconds W., NAD 27:

Oa1—0 to 2 inches; sapric material, black (N 2.5/0) broken face and rubbed, dark gray (10YR 4/1) dry; about 60 percent fiber, less than 15 percent rubbed; weak fine granular structure; very friable; many very fine to medium roots; neutral; abrupt smooth boundary.

Oa2—2 to 7 inches; sapric material, black (N 2.5/0) broken face and rubbed; about 45 percent fiber, less than 5 percent rubbed; moderate fine granular structure; very friable; many very fine and fine roots; neutral; abrupt smooth boundary.

Oa3—7 to 17 inches; sapric material, black (N 2.5/0) broken face and rubbed; about 10 percent fiber, less than 2 percent rubbed; weak medium subangular blocky structure; very friable; many very fine roots; neutral; gradual smooth boundary.

Oa4—17 to 60 inches; sapric material, 85 percent black (N 2.5/0) and 15 percent very dark brown (7.5YR 2.5/2) broken face and rubbed; about 3 percent fiber, less than 1 percent rubbed; massive; very friable; common very fine roots; neutral.

Range in Characteristics

Thickness of organic deposits: More than 51 inches

Surface tier:
Hue—10YR or N
Value—2 to 3
Chroma—0 or 1

Subsurface tier:
Hue—7.5YR, 10YR, or N
Value—2 to 3
Chroma—0 to 2

Kane Series

Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains, stream terraces, and kames
Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 95B

Kane silt loam, 0 to 2 percent slopes, in McHenry County, Illinois; at an elevation of 778 feet; 520 feet north and 1,645 feet east of the southwest corner of sec. 27, T. 46 N., R. 8 E.; USGS Richmond topographic quadrangle; lat. 42 degrees 17 minutes 25 seconds N. and long. 88 degrees 25 minutes 53 seconds W., NAD 27:

Ap—0 to 5 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine roots; common distinct black (N 2.5/0) organic coatings on faces of peds and in pores; neutral; clear smooth boundary.

A—5 to 12 inches; black (10YR 2/1) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; few distinct black (N 2.5/0) organic coatings on faces of peds and in pores; 1 percent gravel; neutral; abrupt smooth boundary.

Bt1—12 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds and in pores; few distinct black (10YR 2/1) organo-clay films on faces of peds and in pores; common fine and medium strong brown (7.5YR 4/6) very weakly cemented iron oxide concretions throughout; 1 percent gravel; neutral; clear smooth boundary.

2Bt2—16 to 22 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; firm; common very fine roots; common distinct brown (10YR 4/3) and few distinct dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; few distinct black (10YR 2/1) organo-clay films in root channels and in pores; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 8 percent gravel; neutral; clear smooth boundary.

2Bt3—22 to 29 inches; brown (7.5YR 4/4) sandy clay loam; weak fine and medium subangular blocky structure; friable; common very fine roots; few distinct very dark gray (7.5YR 3/1) organo-clay films on faces of peds and in pores; few distinct black (10YR 2/1) organo-clay films in root channels and in pores; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 14 percent gravel; slightly effervescent on rock fragments; neutral; clear wavy boundary.

3C—29 to 60 inches; yellowish brown (10YR 5/4 and 5/6) very gravelly sand and very gravelly loamy sand; single grain; loose; few very fine roots; 40 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to sandy and gravelly deposits: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Thickness of the solum: 22 to 40 inches

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

Bt or 2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture— clay loam, silty clay loam, loam, sandy clay loam, or sandy loam
Content of gravel—less than 15 percent

3C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—20 to 70 percent

Kaneville Series

Drainage class: Moderately well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess and the underlying outwash
Slope range: 0 to 5 percent

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

Typical Pedon for MLRA 108

Kaneville silt loam, 0 to 2 percent slopes, in Kane County, Illinois; at an elevation of 765 feet; 1,400 feet north and 80 feet west of the southeast corner of sec. 34, T. 39 N., R. 6 E.; USGS Big Rock topographic quadrangle; lat. 41 degrees 48 minutes 41 seconds N.

and long. 88 degrees 31 minutes 30 seconds W., NAD 27:

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

Bt1—8 to 12 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium subangular blocky structure; friable; common very fine roots; common faint brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; clear wavy boundary.

Bt2—12 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common faint brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; clear wavy boundary.

Bt3—19 to 26 inches; brown (10YR 4/3) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; common faint brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark gray (10YR 3/1) organic coatings in root channels and in pores; common fine rounded black (7.5YR 2.5/1) manganese concretions throughout; common fine distinct light brownish gray (10YR 6/2) and faint brown (10YR 5/3) iron depletions in the matrix; slightly acid; clear wavy boundary.

Bt4—26 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine rounded black (7.5YR 2.5/1) manganese concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium prominent light brownish gray (2.5Y 6/2) and faint brown (10YR 5/3) iron depletions in the matrix; neutral; gradual wavy boundary.

Bt5—34 to 42 inches; yellowish brown (10YR 5/4) silt loam; weak medium and coarse subangular blocky structure; friable; common very fine roots; few faint brown (10YR 4/3) clay films on faces of peds; common fine rounded black (7.5YR 2.5/1) manganese concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many coarse distinct light brownish gray (10YR 6/2) and common coarse faint brown (10YR 5/3) iron depletions in the matrix; neutral; clear wavy boundary.

2Bt6—42 to 56 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable; common very fine roots; few faint brown (10YR 5/3) clay films on faces of peds; common coarse distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

2C—56 to 80 inches; light olive brown (2.5Y 5/4) sandy loam; massive; very friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 40 to 70 inches

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

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—loam, clay loam, silt loam, or sandy loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam, silt loam, sandy loam, or clay loam with strata of loamy sand
Content of gravel—less than 15 percent

Kendall Series

Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess and the underlying outwash
Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon for MLRA 108

Kendall silt loam, 0 to 2 percent slopes, in Douglas County, Illinois; at an elevation of 650 feet; 1,160 feet north and 400 feet west of the center of sec. 36, T. 15 N., R. 10 E.; USGS Oakland, Illinois, topographic quadrangle; lat. 39 degrees 42 minutes 24 seconds N. and long. 88 degrees 02 minutes 17 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; many very fine and fine roots; few fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; neutral; abrupt smooth boundary.

E—7 to 11 inches; grayish brown (10YR 5/2) silt loam; moderate fine and medium granular structure; friable; many very fine and fine roots; common fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; slightly acid; clear smooth boundary.

BE—11 to 14 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; many very fine and fine roots; common fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; slightly acid; clear smooth boundary.

Btg1—14 to 25 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; common fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

Btg2—25 to 41 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium and coarse subangular blocky; firm; few very fine and fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg3—41 to 51 inches; 55 percent yellowish brown (10YR 5/6) and 45 percent gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak coarse subangular blocky; firm; few very fine and fine roots; common distinct gray (10YR 5/1) clay films on faces of peds; few medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; slightly acid; clear smooth boundary.

2Btg4—51 to 58 inches; 40 percent strong brown (7.5YR 5/6), 30 percent yellowish brown (10YR 5/6), and 30 percent gray (5Y 5/1) loam; weak coarse subangular blocky structure; friable; few distinct discontinuous dark gray (10YR 4/1) clay films on faces of peds; common fine and medium rounded black (7.5YR 2.5/1) weakly cemented nodules throughout; about 5 percent fine gravel; neutral; clear smooth boundary.

2Cg1—58 to 74 inches; 45 percent yellowish brown (10YR 5/6), 45 percent gray (5Y 5/1), and 10 percent strong brown (7.5YR 5/6), stratified loam, sandy loam, and silt loam; massive; friable; about 5 percent fine gravel; slightly alkaline; abrupt smooth boundary.

2Cg2—74 to 80 inches; 60 percent grayish brown (10YR 5/2), 30 percent gray (10YR 5/1), and 10 percent yellowish brown (10YR 5/6), stratified gravelly loam, gravelly sandy loam, and silt loam; massive; friable; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 40 to more than 60 inches

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

E horizon:
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt or Btg horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam

2Bt or 2Btg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6

Chroma—1 to 6
Texture—loam, clay loam, silt loam, or sandy loam
Content of gravel—less than 15 percent

2C or 2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—loam, clay loam, silt loam, sandy loam, sandy clay loam, or the gravelly analogs of these textures
Content of gravel—less than 20 percent

Kidami Series

Drainage class: Moderately well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 2 to 12 percent

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

Typical Pedon for MLRA 95B

Kidami silt loam, 2 to 4 percent slopes, in McHenry County, Illinois; at an elevation of 952 feet; 1,500 feet north and 1,980 feet east of the southwest corner of sec. 13, T. 44 N., R. 5 E.; USGS Marengo North topographic quadrangle; lat. 42 degrees 17 minutes 18 seconds N. and long. 88 degrees 36 minutes 00 seconds W., NAD 27:

A—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common fine and medium roots; 2 percent gravel; neutral; abrupt smooth boundary.

E—3 to 7 inches; brown (10YR 5/3) silt loam, light brownish gray (10YR 6/2) dry; weak thin platy structure parting to weak fine subangular blocky; very friable; common fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds and in pores; 1 percent gravel; slightly acid; abrupt smooth boundary.

BE—7 to 10 inches; 50 percent brown (10YR 5/3) and 50 percent brown (7.5YR 5/4) silt loam; moderate fine subangular blocky structure; friable; common fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds and in pores; 2 percent gravel; moderately acid; clear smooth boundary.

2Bt1—10 to 16 inches; brown (7.5YR 5/4) loam; moderate fine subangular blocky structure; firm; common very fine and fine roots; few distinct brown (7.5YR 4/4) clay films and light gray (10YR 7/2) (dry) clay depletions on faces of peds and in pores; 3 percent gravel; strongly acid; clear wavy boundary.

2Bt2—16 to 24 inches; brown (7.5YR 4/4) clay loam; moderate fine prismatic structure parting to moderate fine subangular blocky; firm; common very fine and fine roots; few distinct brown (7.5YR 4/3) clay films and light gray (10YR 7/2) (dry) clay depletions on faces of peds and in pores; 3 percent gravel; strongly acid; clear smooth boundary.

2Bt3—24 to 30 inches; strong brown (7.5YR 4/6) clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine roots; few distinct brown (7.5YR 4/3 and 4/4) clay films on faces of peds and in pores; 5 percent gravel; moderately acid; clear wavy boundary.

2Bt4—30 to 37 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few very fine and fine roots; few distinct brown (7.5YR 4/3) clay films on faces of peds and in pores; 6 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2Bt5—37 to 45 inches; brown (7.5YR 5/4) loam; weak medium and coarse subangular blocky structure; firm; few very fine roots; few distinct brown (7.5YR 4/3) clay films on faces of peds and in pores; 7 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2C—45 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; few very fine roots; few distinct brown (7.5YR 4/3) clay films in root channels and in pores; 8 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 18 inches
Depth to carbonates: 20 to 48 inches
Thickness of the solum: 24 to 55 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam, loam, or clay loam
Content of gravel—less than 10 percent

E horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam, loam, or sandy loam
Content of gravel—less than 10 percent

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—clay loam or loam
Content of gravel—2 to 15 percent

2C horizon:
Hue—5YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—loam or sandy loam
Content of gravel—5 to 15 percent

Kidder Series

Drainage class: Well drained
Permeability: Moderate in the upper part; moderately rapid in the lower part
Landform: Ground moraines and end moraines
Parent material: Till
Slope range: 2 to 20 percent

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

Typical Pedon for MLRA 95B

Kidder silt loam, 2 to 6 percent slopes, in Rock County, Wisconsin; at an elevation of 885 feet; 140 feet north and 2,450 feet east of the center of sec. 1, T. 4 N., R. 13 E.; USGS Milton, Wisconsin, topographic quadrangle; lat. 42 degrees 50 minutes 15 seconds N. and long. 88 degrees 53 minutes 44 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and very fine subangular blocky structure; friable; common fine fibrous roots; common fine and medium continuous, mostly exped, dendritic pores; neutral; abrupt smooth boundary.

2BE—7 to 11 inches; brown (10YR 4/3 and 7.5YR 4/4) loam; weak fine and medium subangular blocky structure; friable; common fine fibrous roots; common very fine and fine and few medium continuous, mostly exped, dendritic pores; neutral; clear smooth boundary.

2Bt1—11 to 17 inches; brown (7.5YR 4/4) clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; common fine and very fine and few medium continuous, mostly exped, dendritic pores; few faint brown (7.5YR 4/3) clay films on faces of peds and in pores and clay bridging of sand grains; neutral; clear wavy boundary.

2Bt2—17 to 28 inches; brown (7.5YR 4/4) sandy clay loam; moderate medium subangular blocky structure; firm; few fine fibrous roots; common fine and very fine continuous, mostly exped, dendritic pores; few faint brown (7.5YR 4/3) clay films on faces of peds and in pores and clay bridging of sand grains; neutral; clear wavy boundary.

2Bt3—28 to 30 inches; dark yellowish brown (10YR 3/4) sandy loam; weak medium subangular blocky structure; friable; few fine and very fine continuous, obliquely oriented, inped and exped pores; very few faint dark brown (10YR 3/3) clay films on faces of some peds and clay bridging of sand grains; about 15 percent gravel; slightly alkaline; clear wavy boundary.

2C—30 to 60 inches; brown (10YR 5/3) gravelly sandy loam; massive; friable; few fine and very fine continuous, obliquely oriented pores; about 35 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 16 to 32 inches
Thickness of the solum: 20 to 40 inches

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

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—loam, sandy loam, or silt loam

Bt or 2Bt horizon:
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—3 or 4
Texture—clay loam, loam, sandy clay loam, or sandy loam
Content of gravel—less than 15 percent

C horizon:
Hue—10YR
Value—5 or 6

Chroma—3 to 6
Texture—sandy loam, fine sandy loam, gravelly sandy loam, or gravelly fine sandy loam
Content of gravel—5 to 35 percent

Kish Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Outwash plains, stream terraces, and ground moraines
Parent material: Calcareous outwash
Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls

Typical Pedon for MLRA 95B

Kish loam, 0 to 2 percent slopes, in McHenry County, Illinois; at an elevation of 865 feet; 2,025 feet south and 120 feet east of the northwest corner of sec. 29, T. 43 N., R. 7 E.; USGS Huntley topographic quadrangle; lat. 42 degrees 10 minutes 37 seconds N. and long. 88 degrees 27 minutes 05 seconds W., NAD 27:

Apk—0 to 6 inches; black (10YR 2/1) loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; common very fine roots; strongly effervescent; slightly alkaline; clear smooth boundary.

Ak—6 to 11 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; 1 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

Bg1—11 to 21 inches; dark gray (2.5Y 4/1) loam; weak fine and medium subangular blocky structure; friable; few very fine roots; common fine prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common fine and medium faint grayish brown (2.5Y 5/2) iron depletions throughout; 1 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

Bg2—21 to 30 inches; dark gray (2.5Y 4/1) loam; weak medium subangular blocky structure; friable; few very fine roots; common fine strong brown (7.5YR 4/6) very weakly cemented iron oxide concretions throughout; black (2.5Y 2.5/1) krotovina; many medium and coarse faint dark grayish brown (2.5Y 4/2) and gray (2.5Y 5/1) iron depletions throughout; common fine and medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation throughout; 4 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

Bg3—30 to 38 inches; grayish brown (2.5Y 5/2) loam; weak medium subangular blocky structure; friable; few very fine roots; many fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation throughout; 4 percent gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

BCg—38 to 47 inches; light brownish gray (2.5Y 6/2) loam; weak medium and coarse subangular blocky structure; friable; many medium and coarse prominent dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; 7 percent gravel; strongly effervescent; slightly alkaline; clear wavy boundary.

Cg—47 to 60 inches; 45 percent light brownish gray (2.5Y 6/2), 40 percent brown (7.5YR 5/3), and 15 percent grayish brown (2.5Y 5/2), stratified loam, sandy loam, and loamy coarse sand; massive; very friable; 14 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to carbonates: Less than 10 inches
Thickness of the solum: 30 to 50 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—loam, silt loam, clay loam, or silty clay loam

Bg or BCg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—loam, silt loam, clay loam, sandy clay loam, silty clay loam, or sandy loam
Content of gravel—less than 10 percent

Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 3
Texture—loam, silt loam, or sandy loam with strata of coarser textures
Content of gravel—2 to 15 percent

La Rose Series

Drainage class: Well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Till
Slope range: 5 to 18 percent

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Argiudolls

Typical Pedon for MLRA 95B

La Rose loam, 5 to 10 percent slopes, eroded, in McHenry County, Illinois; at an elevation of 852 feet; 2,440 feet north and 2,200 feet west of the southeast corner of sec. 23, T. 44 N., R. 6 E.; USGS Woodstock topographic quadrangle; lat. 42 degrees 16 minutes 34 seconds N. and long. 88 degrees 29 minutes 58 seconds W., NAD 27:

Ap—0 to 7 inches; 97 percent very dark grayish brown (10YR 3/2) and 3 percent dark brown (7.5YR 3/4) loam, brown (10YR 5/3) dry; weak medium subangular blocky structure parting to weak fine and medium granular; friable; common very fine roots; 2 percent gravel; neutral; abrupt smooth boundary.
BA—7 to 11 inches; 75 percent dark brown (7.5YR 3/4) and 25 percent very dark grayish brown (10YR 3/2) clay loam; weak medium subangular blocky structure; firm; common very fine roots; 2 percent gravel; neutral; abrupt smooth boundary.
Bt1—11 to 15 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; common very fine roots; common distinct dark brown (7.5YR 3/4) clay films on faces of peds; very few distinct dark brown (7.5YR 3/2) organic coatings in root channels and in pores; 2 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
Bt2—15 to 21 inches; brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; friable; common very fine roots; few distinct dark brown (7.5YR 3/4) clay films on faces of peds; very few distinct dark brown (7.5YR 3/2) organic coatings in root channels and in pores; 3 percent gravel; strongly effervescent; slightly alkaline; gradual smooth boundary.
C—21 to 60 inches; brown (7.5YR 5/4) loam; massive; friable; common very fine roots; 4 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 10 inches
Depth to carbonates: 10 to 24 inches
Thickness of the solum: 12 to 24 inches

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

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam
Content of gravel—less than 7 percent

C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 or 4
Texture—loam or silt loam
Content of gravel—2 to 10 percent

Lena Series

Drainage class: Very poorly drained
Permeability: Moderately rapid
Landform: Ground moraines and outwash plains
Parent material: Herbaceous organic material
Slope range: 0 to 2 percent

Taxonomic classification: Euic, mesic Typic Haplosaprists

Typical Pedon for MLRA 95B

Lena muck, undrained, 0 to 2 percent slopes, in McHenry County, Illinois; at an elevation of 855 feet; 300 feet north and 1,400 feet west of the southeast corner of sec. 31, T. 45 N., R. 6 E.; USGS Marengo North topographic quadrangle; lat. 42 degrees 19 minutes 42 seconds N. and long. 88 degrees 34 minutes 29 seconds W., NAD 27:

Oa1—0 to 11 inches; sapric material, black (N 2.5/0) broken face and rubbed, black (10YR 2/1) dry; about 10 percent fiber, less than 2 percent rubbed; weak medium subangular blocky structure parting to weak medium granular; very friable; many very fine roots; 2 percent fine snail-shell fragments; violently effervescent; moderately alkaline; gradual smooth boundary.
Oa2—11 to 27 inches; sapric material, 50 percent black (N 2.5/0) and 50 percent black (10YR 2/1) broken face and rubbed; about 20 percent fiber, less than 2 percent rubbed; weak medium subangular blocky structure; friable; common very

fine roots; 1 percent fine snail-shell fragments; slightly effervescent; slightly alkaline; gradual smooth boundary.

Oa3—27 to 60 inches; sapric material, black (N 2.5/0) broken face and rubbed; about 5 percent fiber, less than 1 percent rubbed; massive; very friable; common very fine roots; 1 percent fine snail-shell fragments; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of organic deposits: More than 51 inches
Depth to carbonates: Less than 10 inches

Surface tier:
Hue—10YR or N
Value—2 to 3
Chroma—0 or 1

Subsurface tier:
Hue—7.5YR, 10YR, or N
Value—2 to 3
Chroma—0 to 2

Lisbon Series

Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 0 to 4 percent

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

Typical Pedon for MLRA 95B

Lisbon silt loam, 0 to 2 percent slopes, in Boone County, Illinois; at an elevation of 858 feet; 1,190 feet north and 310 feet east of the southwest corner of sec. 36, T. 43 N., R. 4 E.; USGS Riley topographic quadrangle; lat. 42 degrees 09 minutes 23 seconds N. and long. 88 degrees 43 minutes 27 seconds W., NAD 27:

Ap—0 to 7 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

A—7 to 11 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; neutral; clear smooth boundary.

BA—11 to 17 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; common fine faint dark grayish brown (10YR 4/2) and few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt1—17 to 23 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure parting to strong fine subangular blocky; friable; common distinct dark grayish brown (10YR 4/2) clay films 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 in the matrix; moderately acid; clear smooth boundary.

Bt2—23 to 28 inches; light olive brown (2.5Y 5/6) silty clay loam; strong fine angular blocky structure; firm; common distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine prominent grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—28 to 36 inches; olive brown (2.5Y 4/4) silty clay loam; weak medium prismatic structure parting to strong medium angular and subangular blocky; firm; common distinct grayish brown (10YR 5/2) and few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.

2Bt4—36 to 39 inches; yellowish brown (10YR 5/6) clay loam; weak coarse prismatic structure; firm; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation in the matrix; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 1 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C—39 to 70 inches; light yellowish brown (10YR 6/4) loam; massive; firm; few faint pale brown (10YR 6/3) coatings on vertical faces of joints; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine distinct brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; common fine prominent greenish gray (5GY 6/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of loess or silty material: 20 to 40 inches

Depth to carbonates: 20 to 40 inches
Thickness of the solum: 24 to 42 inches

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

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

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam or clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam or sandy loam
Content of gravel—2 to 15 percent

Lorenzo Series

Drainage class: Well drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains, end moraines, and kames
Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 12 percent

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

Typical Pedon

Lorenzo loam, 2 to 4 percent slopes, in McHenry County, Illinois; at an elevation of 905 feet; 1,800 feet north and 960 feet west of the southeast corner of sec. 18, T. 43 N., R. 6 E.; USGS Marengo South topographic quadrangle; lat. 42 degrees 12 minutes 07 seconds N. and long. 88 degrees 34 minutes 25 seconds W., NAD 27:

Ap—0 to 8 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure parting to weak fine and medium granular; friable; common very fine roots; 1 percent gravel; slightly acid; abrupt smooth boundary.

Bt1—8 to 12 inches; 95 percent dark yellowish brown (10YR 4/4) and 5 percent very dark brown (10YR 2/2) clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; few distinct dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) clay films on faces of peds; 5 percent gravel; neutral; clear smooth boundary.

Bt2—12 to 18 inches; dark yellowish brown (10YR 4/4) sandy clay loam; weak medium subangular blocky structure; friable; common very fine roots; few distinct dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) clay films on faces of peds; 8 percent gravel; slightly acid; abrupt smooth boundary.

2C—18 to 60 inches; dark yellowish brown (10YR 4/4) very gravelly loamy sand and very gravelly sand; single grain; loose; common very fine roots; 32 percent gravel and 5 percent cobbles; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 6 to 15 inches
Depth to sandy and gravelly deposits: 10 to 24 inches
Depth to carbonates: 12 to 24 inches
Thickness of the solum: 12 to 24 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—1 or 2
Texture—loam, silt loam, or sandy loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, loam, sandy clay loam, or the gravelly analogs of these textures
Content of gravel—2 to 35 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—20 to 75 percent

Markham Series

Drainage class: Moderately well drained
Permeability: Slow
Landform: Ground moraines and end moraines

Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 2 to 6 percent

Taxonomic classification: Fine, illitic, mesic Oxyaquic Hapludalfs

Typical Pedon for MLRA 110

Markham silt loam, 2 to 4 percent slopes, in Du Page County, Illinois; at an elevation of 775 feet; 2,125 feet south and 1,375 feet east of the northwest corner of sec. 16, T. 40 N., R. 9 E.; USGS West Chicago topographic quadrangle; lat. 41 degrees 57 seconds 11 minutes N. and long. 88 degrees 13 minutes 08 seconds W., NAD 27:

Ap—0 to 5 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; moderately acid; clear smooth boundary.

A—5 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure parting to weak fine granular; friable; common very fine roots; moderately acid; abrupt smooth boundary.

BA—8 to 12 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; moderately acid; clear wavy boundary.

2Bt1—12 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium prismatic structure parting to moderate fine subangular blocky; friable; common very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; common fine strong brown (7.5YR 4/6) very weakly cemented iron oxide concretions throughout; 2 percent gravel; slightly acid; clear wavy boundary.

2Bt2—21 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium subangular blocky structure; friable; common very fine and fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine yellowish red (5YR 4/6) very weakly cemented iron oxide concretions throughout; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 7 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2BC—26 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium and coarse angular blocky structure; firm; common very fine roots; common fine yellowish red (5YR 5/6) very weakly cemented iron oxide concretions throughout; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 6 percent gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

2Cd1—32 to 39 inches; yellowish brown (10YR 5/4) silty clay loam; massive; very firm; few very fine roots; common fine yellowish red (5YR 5/6) very weakly cemented iron oxide concretions throughout; 6 percent gravel; violently effervescent; moderately alkaline; gradual wavy boundary.

2Cd2—39 to 60 inches; brown (10YR 5/3) silty clay loam; massive; very firm; common fine yellowish red (5YR 5/6) very weakly cemented iron oxide concretions throughout; 7 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 18 inches
Depth to carbonates: 18 to 42 inches
Thickness of the solum: 20 to 50 inches

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

Bt, 2Bt, or 2BC horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 8
Texture—silty clay loam or silty clay
Content of gravel—less than 10 percent

2Cd horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam
Content of gravel—less than 10 percent

Martinsville Series

Drainage class: Well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Thin mantle of loess or other silty material and the underlying outwash
Slope range: 2 to 6 percent

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

Typical Pedon for MLRA 95B

Martinsville silt loam, 2 to 4 percent slopes, in Kane County, Illinois; at an elevation of 942 feet; 375 feet south and 2,500 feet east of the northwest corner of sec. 15, T. 42 N., R. 7 E.; USGS Pingree Grove topographic quadrangle; lat. 42 degrees 07 minutes 27 seconds N. and long. 88 degrees 24 minutes 15 seconds W., NAD 27:

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many very fine and fine roots; 1 percent gravel; slightly acid; abrupt smooth boundary.

E1—5 to 8 inches; dark grayish brown (10YR 4/2) sandy loam; moderate thick platy structure; very friable; many very fine and fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; 1 percent gravel; slightly acid; clear smooth boundary.

E2—8 to 12 inches; brown (10YR 4/3) sandy loam; moderate thick platy structure; friable; common very fine and fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; 1 percent gravel; slightly acid; clear smooth boundary.

BE—12 to 17 inches; dark yellowish brown (10YR 4/4) loam; weak thin and medium platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots; 1 percent gravel; slightly acid; clear wavy boundary.

Bt1—17 to 22 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; 1 percent gravel; slightly acid; clear wavy boundary.

Bt2—22 to 28 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; 1 percent gravel; slightly acid; clear wavy boundary.

Bt3—28 to 38 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine and medium black (N 2.5/0) very weakly cemented iron and manganese oxide concretions throughout; 1 percent gravel; moderately acid; clear wavy boundary.

Bt4—38 to 53 inches; yellowish brown (10YR 5/4) sandy clay loam; weak fine and medium subangular blocky structure; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; common fine and medium black (N 2.5/0) very weakly cemented iron and manganese oxide concretions throughout; 1 percent gravel; moderately acid; clear wavy boundary.

C—53 to 60 inches; yellowish brown (10YR 5/4), stratified loam and sandy loam; massive; friable; common distinct light gray (10YR 7/2) (dry) clay depletions along cleavage planes; common fine and medium black (N 2.5/0) very weakly cemented iron and manganese oxide concretions throughout; 1 percent gravel; slightly acid.

Range in Characteristics

Thickness of loess or silty material: Less than 20 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 40 to 70 inches

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

E horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—loam, silt loam, sandy loam, or fine sandy loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, loam, sandy clay loam, or sandy loam
Content of gravel—less than 10 percent

C horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, sandy loam, silt loam, or loamy sand
Content of gravel—less than 10 percent

Mayville Series

Drainage class: Moderately well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines

Parent material: Loess or other silty material and the underlying till
Slope range: 0 to 10 percent

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

Typical Pedon for MLRA 95B

Mayville silt loam, 2 to 6 percent slopes, in Washington County, Wisconsin; at an elevation of 1,040 feet; 1,450 feet south and 210 feet east of the northwest corner of sec. 8, T. 10 N., R. 18 E.; USGS Hartford West topographic quadrangle; lat. 43 degrees 21 minutes 00 seconds N. and long. 88 degrees 23 minutes 51 seconds W., NAD 27:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; neutral; abrupt wavy boundary.
E—6 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium platy structure; very friable; neutral; abrupt smooth boundary.
BE—8 to 12 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; neutral; clear smooth boundary.
Bt1—12 to 24 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; common faint dark brown (10YR 3/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/4 and 5/6) masses of iron accumulation in the matrix in the lower part of the horizon; neutral; clear smooth boundary.
Bt2—24 to 28 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few medium faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; neutral; clear smooth boundary.
2Bt3—28 to 32 inches; brown (10YR 4/3) clay loam grading to yellowish brown (10YR 5/4) loam in the lower part; moderate coarse subangular blocky structure; firm; few faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few medium faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; about 3 percent gravel; slightly effervescent in the lower part; neutral; clear smooth boundary.
2C—32 to 60 inches; light yellowish brown (10YR 6/4) gravelly sandy loam; massive; friable; few medium prominent brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; few medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; about 17 percent gravel and 1 percent cobbles; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Thickness of the solum: 24 to 48 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

Bt or BE horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, clay loam, or sandy clay loam
Content of gravel—3 to 12 percent

2C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—3 or 4
Texture—loam, sandy loam, gravelly loam, or gravelly sandy loam
Content of gravel—5 to 20 percent

Milford Series

Drainage class: Poorly drained
Permeability: Moderately slow
Landform: Lake plains
Parent material: Lacustrine deposits
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 110

Milford silty clay loam, 0 to 2 percent slopes, in Iroquois County, Illinois; at an elevation of 643 feet;

1,450 feet north and 70 feet east of the southwest corner of sec. 4, T. 26 N., R. 14 W.; USGS Gilman topographic quadrangle; lat. 40 degrees 45 minutes 24 seconds N. and long. 87 degrees 57 minutes 29 seconds W., NAD 27:

Ap—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine and fine subangular and angular blocky structure; firm; many fine roots; slightly acid; abrupt smooth boundary.

A—9 to 18 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate and strong very fine subangular blocky structure; firm; common fine roots; slightly acid; clear smooth boundary.

BA—18 to 22 inches; very dark gray (10YR 3/1) silty clay, gray (10YR 5/1) dry; moderate fine and medium angular blocky structure; very firm; common fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common medium prominent olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; common medium distinct dark grayish brown (2.5Y 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg1—22 to 31 inches; gray (5Y 5/1) silty clay loam; moderate medium and coarse prismatic structure parting to moderate medium and coarse angular and subangular blocky; very firm; common fine roots; many distinct dark gray (5Y 4/1) pressure faces on faces of peds; few fine black (N 2.5/0) iron and manganese oxide concretions throughout; many medium prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; many medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg2—31 to 42 inches; gray (5Y 5/1) clay loam; moderate coarse prismatic structure parting to moderate medium and coarse angular blocky; very firm; few fine roots; common medium prominent dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bg3—42 to 50 inches; dark gray (5Y 4/1) silty clay loam stratified with thin bands of clay loam; moderate coarse prismatic structure parting to moderate coarse subangular and angular blocky; firm; few fine roots; many medium prominent dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

Cg—50 to 60 inches; gray (5Y 5/1) clay loam stratified with bands of fine sandy loam, silty clay loam, and silty clay; massive; firm; few fine roots; many coarse prominent yellowish brown (10YR 5/4 and 5/8) masses of iron accumulation in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 36 to 60 inches

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

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

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam, clay loam, silt loam, loam, or sandy loam

Millbrook Series

Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon for MLRA 95B

Millbrook silt loam, 0 to 2 percent slopes, in De Kalb County, Illinois; at an elevation of 830 feet; 150 feet south and 1,390 feet east of the northwest corner of sec. 12, T. 42 N., R. 5 E.; USGS Marengo South topographic quadrangle; lat. 42 degrees 08 minutes 17 seconds N. and long. 88 degrees 36 minutes 09 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common very fine roots; moderately acid; abrupt smooth boundary.

E—8 to 12 inches; 70 percent dark grayish brown (10YR 4/2) and 30 percent brown (10YR 4/3) silt loam, grayish brown (10YR 5/2) dry; weak thin platy structure parting to moderate fine granular; friable; common very fine roots; moderately acid; clear smooth boundary.

Bt1—12 to 18 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

Bt2—18 to 26 inches; grayish brown (10YR 5/2) silty clay loam; weak fine and medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine roots; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct very dark brown (10YR 2/2) organic coatings in root channels and in pores; few fine very dark grayish brown (10YR 3/2) iron and manganese oxide concretions throughout; many fine and medium faint brown (10YR 5/3) and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

2Bt3—26 to 34 inches; grayish brown (10YR 5/2) loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine very dark brown (10YR 2/2) iron and manganese oxide concretions throughout; many fine and medium prominent yellowish brown (10YR 5/6) and common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

2Bt4—34 to 41 inches; dark grayish brown (10YR 4/2) sandy loam; weak coarse subangular blocky structure; very friable; few very fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine very dark brown (10YR 2/2) iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

2C1—41 to 57 inches; stratified light brownish gray (2.5Y 6/2) and yellowish brown (10YR 5/6 and 5/8) loam and sandy loam and gray (5Y 6/1) silt loam; massive; very friable; common fine very dark brown (10YR 2/2) iron and manganese oxide concretions throughout; 3 percent gravel; neutral; clear wavy boundary.

2C2—57 to 65 inches; stratified light brownish gray (2.5Y 6/2) and yellowish brown (10YR 5/6 and 5/8) loam and sandy loam and gray (5Y 6/1) silt loam; massive; very friable; few fine very dark brown (10YR 2/2) iron and manganese oxide concretions throughout; 4 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: 24 to 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 40 to 65 inches

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

E horizon:
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—sandy loam, loam, silt loam, clay loam, or sandy clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—stratified sandy loam, loam, silt loam, clay loam, or loamy sand
Content of gravel—less than 15 percent

Millington Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Flood plains
Parent material: Calcareous alluvium
Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, superactive, calcareous, mesic Cumulic Endoaquolls

Typical Pedon for MLRA 110

Millington silt loam, 0 to 2 percent slopes, occasionally flooded, in Kane County, Illinois; at an elevation of 650 feet; 580 feet north and 509 feet east of the southwest corner of sec. 27, T. 39 N., R. 8 E.; USGS Aurora North topographic quadrangle; lat. 41 degrees 49 minutes 34 seconds N. and long. 88 degrees 19 minutes 12 seconds W., NAD 27:

A1—0 to 12 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; strongly effervescent; moderately alkaline; gradual wavy boundary.

A2—12 to 21 inches; very dark gray (10YR 3/1) silt loam containing about 20 percent sand; gray (10YR 5/1) dry; weak medium subangular blocky structure parting to weak medium granular; friable; common very fine and fine roots; 3 percent snail shells and 5 percent snail-shell fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

AB—21 to 26 inches; very dark grayish brown (2.5Y 3/2) silt loam containing about 25 percent sand; grayish brown (2.5Y 5/2) dry; weak fine and medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; few distinct very dark gray (10YR 3/1) organic coatings in root channels and pores; 2 percent snail shells and 6 percent snail-shell fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bg1—26 to 36 inches; very dark grayish brown (2.5Y 4/2) loam; weak fine subangular blocky structure; friable; common very fine roots; few distinct very dark grayish brown (2.5Y 3/2) organic coatings in root channels and pores; 2 percent snail shells and 4 percent snail-shell fragments; common fine prominent dark yellowish brown (10YR 4/6) iron concretions throughout; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bg2—36 to 49 inches; dark grayish brown (2.5Y 4/2), stratified silt loam and sandy loam; weak medium subangular blocky structure; friable; common very fine roots; few distinct very dark grayish brown (2.5Y 3/2) organic coatings in root channels and pores; 2 percent snail shells and 3 percent snail-shell fragments; many fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg1—49 to 57 inches; black (2.5Y 2.5/1), stratified silt loam and sandy loam; massive; friable; few very fine roots; 2 percent snail shells and 3 percent snail-shell fragments; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg2—57 to 62 inches; dark gray (2.5Y 4/1) sandy loam; massive; friable; 14 percent gravel; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 40 inches
Depth to carbonates: Less than 10 inches
Thickness of the solum: 24 to 48 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silt loam, loam, silty clay loam, or clay loam

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

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture—loam, silt loam, sandy loam, or clay loam
Content of gravel—less than 15 percent

Milton Series

Drainage class: Well drained
Permeability: Moderately slow
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till and residuum derived from dolostone
Slope range: 2 to 12 percent

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

Typical Pedon for MLRA 110

Milton silt loam, 6 to 12 percent slopes, in Kane County, Illinois; at an elevation of 695 feet; 1,550 feet north and 1,800 feet east of the southwest corner of sec. 3, T. 40 N., R. 8 E.; USGS Geneva topographic quadrangle; lat. 41 degrees 58 minutes 35 seconds N.

and long. 88 degrees 18 minutes 56 seconds W., NAD 27:

A—0 to 5 inches; black (10YR 2/1) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine and fine roots; neutral; clear smooth boundary.
E1—5 to 8 inches; dark grayish brown (10YR 4/2) silt loam; weak thick platy structure; friable; common very fine, fine, and medium roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds and in pores; neutral; clear smooth boundary.
E2—8 to 11 inches; brown (10YR 4/3) silt loam; moderate thick platy structure; friable; common very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; neutral; clear smooth boundary.
Bt1—11 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) organo-clay films on faces of peds and in pores; neutral; clear wavy boundary.
2Bt2—16 to 21 inches; dark yellowish brown (10YR 4/4) silty clay; strong fine and medium subangular blocky structure; firm; few very fine roots; common distinct dark brown (7.5YR 3/2) organo-clay films and few distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; 1 percent gravel; neutral; clear wavy boundary.
3Bt3—21 to 24 inches; brown (10YR 4/3) silty clay; strong medium and coarse subangular blocky structure; firm; few very fine roots; common distinct dark brown (10YR 3/3) clay films and few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds and in pores; common fine prominent strong brown (7.5YR 4/6) very weakly cemented iron and manganese concretions throughout; common fine very pale brown (10YR 7/4) soft masses of carbonate throughout; 3 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.
3R—24 inches; hard dolomitic bedrock.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Thickness of the solum: 20 to 40 inches

Ap or A horizon:
Hue—10YR or 7.5YR
Value—2 to 4
Chroma—1 to 3
Texture—silt loam

E horizon (if it occurs):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam

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

2Bt horizon:
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—3 to 6
Texture—silty clay or silty clay loam

3Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay, clay, or clay loam
Content of gravel—2 to 15 percent

Mundelein Series

Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 110

Mundelein silt loam, 0 to 2 percent slopes, in Lake County, Illinois; at an elevation of 792 feet; 780 feet north and 1,560 feet east of the southwest corner of sec. 14, T. 45 N., R. 10 E.; USGS Grayslake topographic quadrangle; lat. 42 degrees 22 minutes 24 seconds N. and long. 88 degrees 2 minutes 17 seconds W., NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; slightly acid; clear smooth boundary.
A—7 to 13 inches; black (N 2.5/0) silt loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine roots; neutral; clear smooth boundary.

AB—13 to 17 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine and fine subangular blocky structure parting to weak fine granular; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—17 to 21 inches; brown (10YR 4/3) silty clay loam; moderate very fine and fine subangular blocky structure; friable; few distinct black (10YR 2/1) organic coatings on faces of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bt2—21 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; few distinct dark grayish brown (10YR 4/2) and brown (10YR 4/3) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 2 percent gravel; neutral; clear smooth boundary.

Bt3—26 to 31 inches; light olive brown (2.5Y 5/4) silt loam; weak medium subangular blocky structure; friable; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 4 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2BC—31 to 42 inches; 65 percent yellowish brown (10YR 5/4 and 5/6) and 35 percent light brownish gray (2.5Y 6/2), stratified silt loam and loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 8 percent gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.

2C—42 to 60 inches; 35 percent light brown (7.5YR 6/3), 35 percent yellowish brown (10YR 5/6), and 30 percent light brownish gray (2.5Y 6/2), stratified loam and silt loam; massive; friable; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 6 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Thickness of the solum: 24 to 50 inches

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

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

2Bt or 2BC horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam, loam, clay loam, sandy clay loam, or sandy loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 8
Texture—stratified silt loam to fine sand
Content of gravel—less than 15 percent

Muskego Series

Drainage class: Very poorly drained
Permeability: Moderate in the upper part; slow in the lower part
Landform: Outwash plains and ground moraines
Parent material: Herbaceous organic material over coprogenic material
Slope range: 0 to 2 percent

Taxonomic classification: Coprogenous, euic, mesic Limnic Haplosaprists

Typical Pedon for MLRA 110

Muskego muck, in an area of Muskego and Houghton mucks, 0 to 2 percent slopes, in Du Page County, Illinois; at an elevation of 745 feet; 255 feet west and 1,950 feet north of the southeast corner of sec. 15, T. 39 N., R. 10 E.; USGS Wheaton topographic quadrangle; lat. 41 degrees 51 minutes 49 seconds N. and long. 88 degrees 04 minutes 23 seconds W., NAD 27:

Oa1—0 to 5 inches; sapric material, black (N 2.5/0) broken face and rubbed, dark gray (N 4/0) dry;

less than 5 percent fiber rubbed; weak fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.

Oa2—5 to 11 inches; sapric material, black (N 2.5/0) broken face and rubbed; less than 5 percent fiber rubbed; moderate fine subangular blocky structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

Oa3—11 to 22 inches; sapric material, black (N 2.5/0) broken face and rubbed; less than 5 percent fiber rubbed; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; slightly acid; clear wavy boundary.

Oa4—22 to 36 inches; sapric material, 60 percent black (N 2.5/0) and 40 percent dark brown (7.5YR 3/3) broken face and rubbed; 10 percent fiber rubbed; weak thick platy structure; friable; common very fine roots; slightly acid; clear wavy boundary.

Lco1—36 to 47 inches; 90 percent very dark gray (5Y 3/1) and 10 percent dark brown (7.5YR 3/4) coprogenous earth; 5 percent fiber rubbed; massive; very friable; common very fine roots; neutral; gradual wavy boundary.

Lco2—47 to 60 inches; very dark gray (5Y 3/1) coprogenous earth; 5 percent fiber rubbed; massive; very friable; common very fine roots; 4 percent snail shells; neutral.

Range in Characteristics

Depth to coprogenic material: 16 to 51 inches

Surface tier:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 or 1

Subsurface tier:
Hue—7.5YR, 10YR, or N
Value—2 to 3
Chroma—0 to 3

Lco horizon:
Hue—10YR, 2.5Y, or 5Y
Value—2 to 4
Chroma—1 to 3

Octagon Series

Drainage class: Moderately well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 2 to 12 percent
Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs

Typical Pedon for MLRA 95B

Octagon silt loam, 2 to 4 percent slopes, in Kane County, Illinois; at an elevation of 1,052 feet; 70 feet north and 1,900 feet east of the southwest corner of sec. 18, T. 41 N., R. 7 E.; USGS Pingree Grove topographic quadrangle; lat. 42 degrees 01 minute 35 seconds N. and long. 88 degrees 28 minutes 56 seconds W., NAD 27:

Ap—0 to 7 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine granular structure; friable; common very fine roots; neutral; abrupt smooth boundary.

Bt1—7 to 13 inches; brown (10YR 4/3) silty clay loam; weak very fine subangular blocky structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) clay films on faces of peds; slightly acid; clear smooth boundary.

2Bt2—13 to 25 inches; brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds; 2 percent gravel; neutral; clear smooth boundary.

2Bt3—25 to 30 inches; brown (7.5YR 5/4) clay loam; weak fine subangular blocky structure; friable; few very fine roots; few distinct brown (7.5YR 4/3) and dark brown (7.5YR 3/3) clay films on faces of peds; 3 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C—30 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; few very fine roots; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 18 inches
Depth to carbonates: 24 to 40 inches
Thickness of the solum: 24 to 40 inches

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

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam

2Bt horizon:
Hue—7.5YR or 10YR

Value—4 or 5
Chroma—3 to 6
Texture—clay loam or loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—3 or 4
Texture—loam
Content of gravel—2 to 15 percent

Otter Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 108

Otter silt loam, 0 to 2 percent slopes, frequently flooded, in De Kalb County, Illinois; at an elevation of 795 feet; 1,275 feet south and 800 feet east of the northwest corner of sec. 25, T. 42 N., R. 4 E.; USGS Genoa topographic quadrangle; lat. 42 degrees 05 minutes 31 seconds N. and long. 88 degrees 43 minutes 22 seconds W., NAD 27:

A1—0 to 11 inches; black (N 2.5/0) silt loam, dark gray (N 4/0) dry; moderate fine granular structure; friable; common very fine to medium roots; neutral; clear smooth boundary.
A2—11 to 16 inches; black (N 2.5/0) silt loam, dark gray (N 4/0) dry; moderate fine and medium subangular blocky structure; friable; common very fine to medium roots; neutral; clear smooth boundary.
A3—16 to 21 inches; black (2.5Y 2.5/1) silt loam, dark gray (2.5Y 4/1) dry; moderate medium subangular blocky structure; friable; common very fine and fine roots; neutral; clear wavy boundary.
A4—21 to 27 inches; black (2.5Y 2.5/1) silt loam, dark grayish brown (2.5Y 4/2) dry; moderate medium subangular blocky structure; friable; common very fine and fine roots; common fine prominent yellowish brown (10YR 5/4) irregular masses of iron accumulation throughout; neutral; clear wavy boundary.
Bg—27 to 34 inches; black (5Y 2.5/1) silty clay loam, dark gray (5Y 4/1) dry; moderate medium angular blocky structure; friable; common very fine to medium roots; few faint very dark gray (N 3/0) organic coatings on faces of peds; common fine prominent yellowish brown (10YR 5/4) irregular masses of iron accumulation throughout; neutral; clear smooth boundary.
BCg—34 to 41 inches; grayish brown (2.5Y 5/2) silt loam; weak medium angular blocky structure; friable; common very fine and fine roots; few faint very dark gray (N 3/0) organic coatings in root channels and in pores; many medium prominent yellowish brown (10YR 5/8 and 5/6) irregular masses of iron accumulation throughout; slightly effervescent; slightly alkaline; gradual wavy boundary.
Cg—41 to 65 inches; gray (2.5Y 5/1), stratified loam and silt loam; massive; friable; many medium prominent brownish yellow (10YR 6/8) and yellowish brown (10YR 5/8) irregular masses of iron accumulation throughout; 1 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 50 inches
Depth to carbonates: More than 24 inches
Thickness of the solum: 24 to 50 inches

A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silt loam, loam, or silty clay loam

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

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 4
Texture—silt loam, loam, sandy loam, or silty clay loam
Content of gravel—less than 15 percent

Ozaukee Series

Drainage class: Moderately well drained
Permeability: Slow
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 2 to 20 percent

Taxonomic classification: Fine, illitic, mesic Oxyaquic Hapludalfs

Typical Pedon for MLRA 110

Ozaukee silt loam, 2 to 4 percent slopes, in Du Page County, Illinois; at an elevation of 780 feet; 2,540 feet north and 2,200 feet east of the southwest corner of sec. 31, T. 39 N., R. 10 E.; USGS Naperville topographic quadrangle; lat. 41 degrees 49 minutes 14 seconds N. and long. 88 degrees 08 minutes 18 seconds W., NAD 27:

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine granular structure; friable; many very fine and fine roots; neutral; clear smooth boundary.

BE—4 to 10 inches; brown (10YR 4/3) silt loam; weak thick platy structure parting to moderate fine subangular blocky; friable; many very fine roots; few distinct dark grayish brown (10YR 4/2) coatings on faces of peds; moderately acid; clear smooth boundary.

2Bt1—10 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many distinct brown (10YR 4/3) clay films on faces of peds; 1 percent gravel; slightly acid; abrupt smooth boundary.

2Bt2—16 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films and brown (10YR 4/3) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent gravel; neutral; clear smooth boundary.

2Bt3—21 to 27 inches; light olive brown (2.5Y 5/3) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Bt4—27 to 33 inches; light olive brown (2.5Y 5/3) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concentrations throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 8 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.

2BCt—33 to 39 inches; light olive brown (2.5Y 5/3) silty clay loam; weak fine and medium subangular blocky structure; firm; common very fine roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concentrations throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 6 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2Cd—39 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; few very fine roots; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; many medium white (10YR 8/1) carbonate concretions throughout; 6 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 18 inches
Depth to carbonates: 15 to 40 inches
Thickness of the solum: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4

Chroma—1 to 3
Texture—silt loam

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silty clay
Content of gravel—1 to 10 percent

2Cd horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 4
Texture—silty clay loam or clay loam
Content of gravel—3 to 15 percent

Parr Series

Drainage class: Moderately well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 2 to 10 percent

Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaquic Argiudolls
Taxadjunct features: The Parr soils in map units 221B2 and 221C2 have a thinner mollic epipedon than is defined as the range for the series. These soils are classified as fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs.

Typical Pedon for MLRA 95B

Parr silt loam, 2 to 5 percent slopes, in McHenry County, Illinois; at an elevation of 849 feet; 2,186 feet north and 2,604 feet west of the southeast corner of sec. 23, T. 44 N., R. 6 E.; USGS Marengo North topographic quadrangle; lat. 42 degrees 16 minutes 32 seconds N. and long. 88 degrees 30 minutes 03 seconds W., NAD 27:

Ap1—0 to 4 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; common very fine roots; common distinct black (10YR 2/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

Ap2—4 to 11 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure parting to weak medium granular; friable; common very fine roots; common distinct black (10YR 2/1) organic coatings on faces of peds; 1 percent gravel; neutral; abrupt smooth boundary.

Bt1—11 to 17 inches; brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; few distinct dark brown (10YR 3/3) clay films on faces of peds; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; 1 percent gravel; slightly acid; clear smooth boundary.

2Bt2—17 to 21 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; few distinct brown (10YR 4/3) and dark brown (10YR 3/3) clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; 3 percent gravel; slightly acid; clear smooth boundary.

2Bt3—21 to 32 inches; brown (7.5YR 4/4) clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct brown (7.5YR 4/3) and dark brown (7.5YR 3/3) clay films on faces of peds; very few distinct dark brown (7.5YR 3/2) organic coatings in root channels and in pores; common fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; 3 percent gravel; neutral; clear smooth boundary.

2BCt—32 to 36 inches; brown (7.5YR 5/4) loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; common very fine roots; very few distinct dark brown (7.5YR 3/3) clay films in root channels and in pores; very few distinct brown (7.5YR 4/4) clay films on faces of peds; common fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C—36 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; common very fine roots; very few distinct dark brown (7.5YR 3/3) linings in root channels and in pores; common medium white (7.5YR 8/1) soft masses of carbonate throughout; common medium and coarse distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium faint brown (7.5YR 5/3) iron depletions in the matrix; 4 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 18 inches
Depth to carbonates: 20 to 40 inches
Thickness of the solum: 24 to 40 inches

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

Bt or 2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam, loam, or silty clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 or 4
Texture—loam
Content of gravel—less than 15 percent

Peotone Series

Drainage class: Very poorly drained
Permeability: Moderately slow
Landform: Ground moraines
Parent material: Colluvium
Slope range: 0 to 2 percent

Taxonomic classification: Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Typical Pedon

Peotone silty clay loam, 0 to 2 percent slopes, in Ford County, Illinois; at an elevation of 707 feet; 315 feet south and 2,233 feet east of the northwest corner of sec. 21, T. 29 N., R. 9 E.; USGS Cabery topographic quadrangle; lat. 40 degrees 48 minutes 58 seconds N. and long. 88 degrees 12 minutes 02 seconds W., NAD 27:

Ap—0 to 7 inches; black (N 2.5/0) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

A—7 to 13 inches; black (N 2.5/0) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

Bg1—13 to 27 inches; black (N 2.5/0) silty clay loam, dark gray (10YR 4/1) dry; moderate medium angular blocky structure; friable; common very fine roots; neutral; clear smooth boundary.

Bg2—27 to 41 inches; dark gray (10YR 4/1) silty clay; moderate fine prismatic structure; firm; common very fine roots; common fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Bg3—41 to 50 inches; dark gray (10YR 4/1) silty clay; moderate medium prismatic structure; firm; few very fine roots; common medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Cg—50 to 60 inches; dark gray (10YR 4/1) silty clay loam; massive; firm; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; few fine 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: 24 to 36 inches
Depth to carbonates: More than 24 inches
Thickness of the solum: 38 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

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

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

Proctor Series

Drainage class: Well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 2 to 5 percent

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

Typical Pedon for MLRA 95B

Proctor silt loam, 0 to 2 percent slopes, in De Kalb County, Illinois; at an elevation of 830 feet; 396 feet north and 1,485 feet east of the southwest corner of sec. 12, T. 42 N., R. 5 E.; USGS Marengo South topographic quadrangle; lat. 42 degrees 07 minutes 33 seconds N. and long. 88 degrees 36 minutes 08 seconds W., NAD 27:

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak very fine granular structure; very friable; common very fine roots; neutral; abrupt smooth boundary.
Bt1—11 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak very fine and fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct dark brown (10YR 3/3) organic coatings in root channels and in pores; neutral; clear smooth boundary.
Bt2—16 to 27 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds and in pores; moderately acid; gradual smooth boundary.
2Bt3—27 to 32 inches; yellowish brown (10YR 5/4) clay loam; moderate fine and medium 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—32 to 38 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
2Bt5—38 to 44 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; moderately acid; gradual wavy boundary.
2C—44 to 73 inches; 50 percent yellowish brown (10YR 5/6) and 50 percent dark yellowish brown (10YR 4/4), stratified sandy loam, loam, and loamy sand; massive; very friable; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 40 to 65 inches

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

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, silt loam, sandy loam, clay loam, or sandy clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, silt loam, or sandy loam with strata of loamy sand
Content of gravel—less than 15 percent

Ringwood Series

Drainage class: Well drained
Permeability: Moderate
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 2 to 4 percent

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Argiudolls

Typical Pedon for MLRA 95B

Ringwood silt loam, 2 to 4 percent slopes, in McHenry County, Illinois; at an elevation of 897 feet; 46 feet north and 280 feet east of the southwest corner of sec. 35, T. 46 N., R. 8 E.; USGS Richmond topographic quadrangle; lat. 42 degrees 24 minutes 56 seconds N. and long. 88 degrees 16 minutes 33 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

A—8 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; common very fine roots; common distinct black (10YR 2/1) organic coatings on faces of peds and in pores; neutral; clear smooth boundary.

Bt1—12 to 15 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) and very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few distinct black (10YR 2/1) organic coatings in root channels and in pores; moderately acid; clear smooth boundary.

Bt2—15 to 20 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds and in pores; moderately acid; clear smooth boundary.

2Bt3—20 to 27 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; 3 percent gravel; neutral; clear smooth boundary.

2Bt4—27 to 36 inches; dark yellowish brown (10YR 4/4) clay loam; weak fine prismatic structure parting to weak medium subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common medium very dark grayish brown (10YR 3/2) wormcasts; 3 percent gravel; slightly alkaline; clear smooth boundary.

2BC—36 to 40 inches; yellowish brown (10YR 5/4) sandy loam; weak fine and medium subangular blocky structure; friable; common very fine roots; few distinct brown (10YR 4/3) clay films in root channels and in pores; 10 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2C1—40 to 52 inches; yellowish brown (10YR 5/4) sandy loam; massive; very friable; few very fine roots; 12 percent gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

2C2—52 to 60 inches; yellowish brown (10YR 5/4) sandy loam; massive; very friable; 14 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of loess or silty material: 15 to 30 inches
Depth to carbonates: 27 to 50 inches
Thickness of the solum: 30 to 50 inches

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

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, clay loam, or sandy clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, gravelly sandy loam, or very gravelly sandy loam
Content of gravel—10 to 40 percent

Rodman Series

Drainage class: Excessively drained
Permeability: Very rapid
Landform: Outwash plains, end moraines, and kames
Parent material: Sandy and gravelly glaciofluvial deposits
Slope range: 12 to 30 percent

Taxonomic classification: Sandy-skeletal, mixed, mesic Typic Hapludolls

Typical Pedon for MLRA 95B

Rodman gravelly loam, in an area of Casco-Rodman complex, 20 to 30 percent slopes, in McHenry County, Illinois; at an elevation of 750 feet; 500 feet south and 2,600 feet east of the northwest corner of sec. 7, T. 44 N., R. 9 E.; USGS Wauconda topographic quadrangle; lat. 42 degrees 18 minutes 45 seconds N. and long. 88 degrees 13 minutes 43 seconds W., NAD 27:

A—0 to 11 inches; very dark gray (10YR 3/1) gravelly loam, dark grayish brown (10YR 4/2) dry; strong fine and medium granular structure; friable; many very fine and fine roots; 17 percent gravel; neutral; clear wavy boundary.

Bw—11 to 14 inches; 50 percent dark brown (10YR 3/3) and 50 percent brown (10YR 4/3) gravelly loam; weak fine granular structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; 25 percent gravel; strongly effervescent; slightly alkaline; abrupt wavy boundary.

C—14 to 60 inches; dark yellowish brown (10YR 4/4) very gravelly sand and very gravelly loamy sand; single grain; loose; common very fine roots; 50 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 6 to 15 inches
Depth to carbonates: 10 to 15 inches
Thickness of the solum: 10 to 15 inches

A horizon:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—1 or 2
Texture—loam, sandy loam, gravelly loam, or gravelly sandy loam
Content of gravel—10 to 25 percent

Bw horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 or 3
Texture—loam, sandy loam, gravelly loam, or gravelly sandy loam
Content of gravel—10 to 35 percent

C horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 4
Texture—the very gravelly or extremely gravelly analogs of loamy sand, sand, loamy coarse sand, or coarse sand
Content of gravel—35 to 70 percent

Rush Series

Drainage class: Well drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Slope range: 0 to 6 percent

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

Typical Pedon for MLRA 95B

Rush silt loam, 0 to 2 percent slopes, in Kane County, Illinois; at an elevation of 712 feet; 175 feet south and 470 feet west of the northeast corner of sec. 15, T. 39 N., R. 8 E.; USGS Aurora North topographic quadrangle; lat. 41 degrees 52 minutes 09 seconds N. and long. 88 degrees 18 minutes 08 seconds W., NAD 27:

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, brown (10YR 5/3) dry; weak very fine granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.

E—4 to 11 inches; 60 percent dark grayish brown (10YR 4/2) and 40 percent brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure; friable; common very fine roots; strongly acid; abrupt smooth boundary.

Bt1—11 to 18 inches; 55 percent brown (10YR 4/3) and 45 percent dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; friable; common very fine roots; strongly acid; clear smooth boundary.

Bt2—18 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—24 to 32 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt4—32 to 38 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate coarse subangular blocky structure; firm; few very fine roots; few distinct brown (10YR 4/3) and dark brown (10YR 3/3) clay films on faces of peds; slightly acid; abrupt smooth boundary.

2Bt5—38 to 45 inches; dark yellowish brown (10YR 4/4) clay loam; weak coarse subangular blocky structure; firm; few very fine roots; common distinct dark brown (10YR 3/3) clay films on faces of peds; 12 percent gravel; slightly acid; abrupt smooth boundary.

3C—45 to 60 inches; yellowish brown (10YR 5/4) gravelly sand; single grain; loose; 25 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: 24 to 40 inches
Depth to sandy and gravelly deposits: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Thickness of the solum: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

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

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, loam, sandy clay loam, sandy loam, or the gravelly analogs of these textures
Content of gravel—less than 35 percent

3C horizon:
Hue—10YR
Value—5 or 6
Chroma—2 to 4
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—15 to 70 percent

Sabina Series

Drainage class: Somewhat poorly drained
Permeability: Moderately slow
Landform: Ground moraines and end moraines
Parent material: Loess and the underlying till
Slope range: 0 to 2 percent

Taxonomic classification: Fine, smectitic, mesic Aeric Epiaqualfs

Typical Pedon for MLRA 108

Sabina silt loam, 0 to 2 percent slopes, in Douglas County, Illinois; at an elevation of 665 feet; 1,785 feet north and 36 feet east of the southwest corner of sec. 13, T. 16 N., R. 7 E.; USGS Tuscola topographic quadrangle; lat. 39 degrees 50 minutes 25 seconds N. and long. 88 degrees 22 minutes 05 seconds W., NAD 27:

Ap—0 to 6 inches; grayish brown (10YR 5/2) silt loam, pale brown (10YR 6/3) dry; weak very fine granular structure; friable; few fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; moderately acid; abrupt smooth boundary.

E—6 to 8 inches; brown (10YR 5/3) silt loam; weak thin platy structure; friable; few fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; moderately acid; clear smooth boundary.

Btg1—8 to 12 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate fine prismatic structure parting to moderate very fine angular blocky; firm; few prominent light gray (10YR 7/2) (dry) clay depletions on faces of peds; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly acid; clear wavy boundary.

Btg2—12 to 19 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate fine angular blocky; very firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; very strongly acid; clear wavy boundary.

Btg3—19 to 33 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few prominent very dark gray (10YR 3/1) organo-clay films in pores; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid; clear wavy boundary.

Btg4—33 to 40 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; few prominent very dark gray (10YR 3/1) organo-clay films in pores; common distinct dark gray (10YR 4/1) clay films on faces of peds; common medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

2Btg5—40 to 47 inches; grayish brown (2.5Y 5/2) clay loam; moderate coarse prismatic structure parting to weak coarse angular blocky; very firm common distinct dark gray (10YR 4/1) clay films on faces of peds; common medium rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium distinct gray (10YR 6/1) iron depletions in the matrix; 5 percent gravel; slightly effervescent; slightly alkaline; abrupt wavy boundary.

2C—47 to 80 inches; light olive brown (2.5Y 5/3) clay loam; massive; very firm; common medium irregular white (10YR 8/1) very weakly cemented calcium carbonate nodules throughout; common medium rounded black (7.5YR 2.5/1) moderately cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium prominent gray (10YR 6/1) iron depletions in the matrix; 7 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 44 to 70 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam

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

2Bt or 2Btg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—clay loam or loam
Content of gravel—less than 5 percent

2C or 2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—clay loam or loam
Content of gravel—less than 10 percent

Sawmill Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 110

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, in Livingston County, Illinois; at an elevation of 636 feet; 1,350 feet south and 140 feet west of the northeast corner of sec. 31, T. 30 N., R. 3 E.; USGS Long Point topographic quadrangle; lat. 41 degrees 30 minutes 37 seconds N. and long. 88 degrees 54 minutes 42 seconds W., NAD 27:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

A1—9 to 17 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A2—17 to 24 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; few very fine roots; 1 percent gravel; neutral; clear smooth boundary.

A3—24 to 29 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; 1 percent gravel; neutral; clear smooth boundary.

Bg1—29 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

Bg2—36 to 41 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine prominent dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

BCg—41 to 48 inches; dark gray (5Y 4/1) silty clay loam; very weak medium prismatic structure; firm; few very fine roots; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common fine prominent dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; abrupt smooth boundary.

Cg—48 to 60 inches; 60 percent gray (10YR 5/1) and 40 percent brownish yellow (10YR 6/6) silt loam; massive; firm; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 1 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates: More than 48 inches
Thickness of the solum: 36 to 60 inches

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

Bg or BCg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam, clay loam, or loam

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or clay loam with strata of loam, silt loam, or sandy loam
Content of gravel—less than 10 percent

Selma Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Outwash
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 108

Selma loam, 0 to 2 percent slopes, in Grundy County, Illinois; at an elevation of 660 feet; 2,511 feet south and 150 feet west of the northeast corner of sec. 3, T. 20 N., R. 8 E.; USGS Harmon topographic quadrangle; lat. 41 degrees 50 minutes 05 seconds N. and long. 89 degrees 33 minutes 45 seconds W., NAD 27:

Ap—0 to 7 inches; black (N 2.5/0) loam, very dark gray (10YR 3/1) dry; moderate fine granular structure; friable; few fine roots; 1 percent gravel; neutral; abrupt smooth boundary.

A—7 to 12 inches; very dark gray (10YR 3/1) loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few fine roots; 1 percent gravel; neutral; clear smooth boundary.

AB—12 to 23 inches; very dark gray (10YR 3/1) loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure parting to moderate fine granular; friable; few fine roots; few dark gray (10YR 4/1) pockets of subsoil material mixed by animal activity; 2 percent gravel; neutral; clear smooth boundary.

Bg1—23 to 28 inches; dark gray (5Y 4/1) loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; 2 percent gravel; neutral; clear smooth boundary.

Bg2—28 to 35 inches; olive gray (5Y 5/2) silt loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; krotovinas between depths of 33 and 35 inches; 1 percent gravel; neutral; clear smooth boundary.

Bg3—35 to 41 inches; olive gray (5Y 5/2) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few fine roots; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 1 percent gravel; neutral; clear smooth boundary.

BCg—41 to 53 inches; olive gray (5Y 5/2) sandy loam; weak medium prismatic structure; very friable; few fine roots; krotovinas between depths of 43 and 44 inches; 5 percent gravel; slightly alkaline; clear smooth boundary.

Cg—53 to 60 inches; olive gray (5Y 5/2), stratified sandy loam and loamy sand; massive; very friable; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; krotovinas between depths of 54 and 56 inches; 12 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates: More than 30 inches
Thickness of the solum: 35 to 55 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—loam, clay loam, or silt loam

Bg or BCg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—loam, clay loam, silt loam, silty clay loam, or sandy loam

Cg or C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 6
Texture—sandy loam, loam, or silt loam with strata of loamy sand or sand
Content of gravel—less than 15 percent

Selmass Series

Drainage class: Poorly drained
Permeability: Moderate in the upper part; rapid in the lower part
Landform: Outwash plains and stream terraces
Parent material: Outwash
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 95B

Selmass loam, 0 to 2 percent slopes, in McHenry County, Illinois; at an elevation of 834 feet; 50 feet north and 600 feet east of the southwest corner of sec. 23, T. 44 N., R. 6 E.; USGS Capron topographic quadrangle; lat. 42 degrees 16 minutes 11 seconds N. and long. 88 degrees 30 minutes 31 seconds W., NAD 27:

Ap—0 to 4 inches; black (N 2.5/0) loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to weak medium granular; friable; common very fine roots; neutral; abrupt smooth boundary.

A—4 to 11 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure; friable; common very fine roots; common distinct black (N 2.5/0) organic coatings on faces of peds and in pores; neutral; clear smooth boundary.

AB—11 to 15 inches; 65 percent black (10YR 2/1) and 35 percent very dark grayish brown (2.5Y 3/2) loam, dark grayish brown (10YR 4/2) dry; weak fine and medium subangular blocky structure; friable; common very fine roots; neutral; clear smooth boundary.

Btg1—15 to 20 inches; dark grayish brown (2.5Y 4/2) loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct dark gray (2.5Y 4/1) clay films and black (10YR 2/1) organic coatings on faces of peds and in pores; common fine distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; common fine and medium faint grayish brown (2.5Y 5/2) iron depletions in the matrix; 1 percent gravel; neutral; gradual smooth boundary.

Btg2—20 to 30 inches; grayish brown (2.5Y 5/2) clay loam; moderate medium subangular blocky structure; friable; common very fine roots; few distinct dark gray (2.5Y 4/1) and grayish brown (2.5Y 4/2) clay films on faces of peds and in pores; common fine strong brown (7.5YR 4/6) very weakly cemented iron oxide concretions throughout; common fine and medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 2 percent gravel; neutral; gradual smooth boundary.

Btg3—30 to 42 inches; light olive gray (5Y 6/2) clay loam; weak medium and coarse subangular blocky structure; friable; few very fine roots; few distinct olive gray (5Y 5/2) clay films on faces of peds and in pores; very dark gray (10YR 3/1) krotovina; common fine strong brown (7.5YR 4/6) very weakly cemented iron oxide concretions throughout; common fine and medium prominent light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 2 percent gravel; neutral; clear smooth boundary.

2BCg—42 to 47 inches; grayish brown (2.5Y 5/2) sandy loam; weak medium subangular blocky structure; very friable; few very fine roots; common medium and coarse distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 4 percent gravel; neutral; clear wavy boundary.

2Cg—47 to 60 inches; grayish brown (2.5Y 5/2) loamy sand; massive; very friable; common medium and coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 4 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to sandy outwash: 35 to 55 inches
Depth to carbonates: More than 35 inches
Thickness of the solum: 35 to 55 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—loam, clay loam, or silt loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—loam, clay loam, sandy clay loam, sandy loam, silty clay loam, or silt loam

2Cg or 2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 4
Texture—sand or loamy sand
Content of gravel—less than 15 percent

Senachwine Series

Drainage class: Well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: End moraines and ground moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 12 to 30 percent

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

Typical Pedon for MLRA 95B

Senachwine silt loam, 12 to 20 percent slopes, in McHenry County, Illinois; at an elevation of 950 feet; 1,620 feet south and 1,620 feet west of the northeast corner of sec. 7, T. 43 N., R. 6 E.; USGS Marengo South topographic quadrangle; lat. 42 degrees 13 minutes 17 seconds N. and long. 88 degrees 34 minutes 30 seconds W., NAD 27:

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (4/2) dry; strong very fine and fine granular structure; friable; common very fine and fine roots; 1 percent gravel; neutral; abrupt smooth boundary.

E—4 to 9 inches; brown (10YR 5/3) loam, very pale brown (10YR 7/3) dry; moderate thin platy structure; friable; common very fine and fine roots; many prominent light gray (10YR 7/2) (dry) clay depletions on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; 1 percent gravel; neutral; clear smooth boundary.

BE—9 to 14 inches; brown (7.5YR 4/4) loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; common prominent light gray (10YR 7/2) (dry) clay depletions on faces of peds; 1 percent gravel; moderately acid; clear smooth boundary.

Bt1—14 to 19 inches; brown (7.5YR 4/4) clay loam; moderate medium prismatic structure parting to strong fine and medium subangular blocky; firm; common very fine and fine roots; many distinct brown (7.5YR 4/3) clay films on faces of peds; few prominent light gray (10YR 7/2) (dry) clay depletions on faces of peds; very few distinct dark brown (7.5YR 3/2) organo-clay films in root channels and in pores; 2 percent gravel; strongly acid; clear smooth boundary.

Bt2—19 to 31 inches; brown (7.5YR 4/4) clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine and fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds; very few distinct dark brown (7.5YR 3/2) organo-clay films in root channels and in pores; 2 percent gravel; moderately acid; clear smooth boundary.

Bt3—31 to 40 inches; 70 percent brown (7.5YR 4/4) and 30 percent brown (7.5YR 5/4) loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; common very fine roots; very few distinct brown (7.5YR 4/3) clay films on faces of peds and in pores; very few distinct dark brown (7.5YR 3/2) organo-clay films in root channels and in pores; common fine and medium very dark gray (10YR 3/1) wormcasts; 5 percent gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.

C—40 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; common very fine roots; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: Less than 18 inches
Depth to carbonates: 20 to 40 inches
Thickness of the solum: 24 to 40 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam, loam, sandy loam, or fine sandy loam

E horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam, loam, sandy loam, or fine sandy loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—clay loam or loam
Content of gravel—1 to 10 percent

C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—3 or 4
Texture—loam or sandy loam
Content of gravel—1 to 10 percent

Somonauk Series

Drainage class: Moderately well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 5 percent

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

Typical Pedon for MLRA 95B

Somonauk silt loam, 0 to 2 percent slopes, in De Kalb County, Illinois; at an elevation of 822 feet; 700 feet south and 2,400 feet west of the northeast corner of sec. 25, T. 41 N., R. 4 E.; USGS Genoa topographic quadrangle; lat. 42 degrees 00 minutes 25 seconds N. and long. 88 degrees 43 minutes 24 seconds W., NAD 27:

Ap—0 to 4 inches; 85 percent dark grayish brown (10YR 4/2) and 15 percent dark brown (10YR 3/3) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; friable; common very fine and fine roots; neutral; gradual wavy boundary.

E—4 to 9 inches; 80 percent dark grayish brown (10YR 4/2) and 20 percent brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; weak medium and thick platy structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

Bt1—9 to 14 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; many distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; few distinct light brownish gray (10YR 6/2) (dry) clay depletions on faces of peds; common fine rounded black (10YR 2/1) manganese nodules throughout; moderately acid; gradual wavy boundary.

Bt2—14 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; common medium rounded black (10YR 2/1) manganese nodules throughout; moderately acid; gradual wavy boundary.

Bt3—21 to 29 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse prismatic structure; friable; common fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; common medium rounded black (10YR 2/1) manganese nodules throughout; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; gradual wavy boundary.

Bt4—29 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; common fine rounded black (10YR 2/1) manganese nodules throughout; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; gradual wavy boundary.

2Bt5—34 to 39 inches; yellowish brown (10YR 5/4) silty clay loam that contains 13 percent sand; moderate medium angular blocky structure; friable; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; common fine rounded black (10YR 2/1) manganese nodules throughout; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 1 percent gravel; moderately acid; gradual wavy boundary.

2Bt6—39 to 49 inches; yellowish brown (10YR 5/4) loam; moderate medium and coarse angular blocky structure; friable; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; few fine rounded black (10YR 2/1) manganese nodules throughout; common fine distinct yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 6 percent gravel; moderately acid; gradual wavy boundary.

2Bt7—49 to 55 inches; brown (7.5YR 4/3) loam; weak medium and coarse angular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; few fine rounded black (10YR 2/1) manganese nodules throughout; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 8 percent gravel; slightly acid; clear smooth boundary.

2Bt8—55 to 61 inches; brown (7.5YR 4/3) sandy loam; weak medium angular blocky structure; friable; common distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; 10 percent gravel; slightly acid; clear smooth boundary.

2Bt9—61 to 70 inches; 60 percent dark yellowish brown (10YR 4/4) and 40 percent brown (7.5YR 4/3) sandy loam; weak medium subangular blocky structure; friable; few distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; 8 percent gravel; neutral; gradual wavy boundary.

2C—70 to 80 inches; 70 percent dark yellowish brown (10YR 4/4) and 30 percent yellowish brown (10YR 5/4), stratified gravelly sandy loam and gravelly sand; massive; very friable; 15 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 42 to 75 inches

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

E horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

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

2Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, clay loam, silt loam, sandy loam, or silty clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, sandy loam, silt loam, clay loam, loamy sand, or the gravelly analogs of these textures with strata of loamy sand or sand
Content of gravel—less than 20 percent

Thorp Series

Drainage class: Poorly drained
Permeability: Slow
Landform: Outwash plains and ground moraines
Parent material: Loess and the underlying outwash
Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon for MLRA 108

Thorp silt loam, 0 to 2 percent slopes, in LaSalle County, Illinois; at an elevation of 640 feet; 990 feet north and 2,240 feet west of the southeast corner of sec. 27, T. 36 N., R. 5 E.; USGS Sheridan topographic quadrangle; lat. 41 degrees 33 minutes 20 seconds N. and long. 88 degrees 38 minutes 10 seconds W., NAD 27:

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) organo-clay films and dark gray (N 4/0) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) and distinct light yellowish brown (2.5Y 6/4) masses of iron 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; grayish brown (10YR 5/2) and yellowish brown (10YR 5/8) sandy loam with thin strata of sand; massive; friable in the sandy loam and loose in the sand; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 14 inches
Thickness of the loess: 30 to 54 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 40 to 70 inches

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

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

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

2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 6
Texture—clay loam, loam, silt loam, sandy loam, or sandy clay loam
Content of gravel—less than 10 percent

2Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 8
Texture—loam, silt loam, sandy loam, or clay loam with strata of loamy sand
Content of gravel—less than 15 percent

Varna Series

Drainage class: Moderately well drained
Permeability: Slow
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 2 to 6 percent

Taxonomic classification: Fine, illitic, mesic Oxyaquic Argiudolls

Taxadjunct features: The Varna soil in map unit 223C2 has a thinner mollic epipedon than is defined as the range for the series. This soil is classified as fine, illitic, mesic Oxyaquic Hapludalfs.

Typical Pedon for MLRA 110

Varna silt loam, 2 to 4 percent slopes, in Kankakee County, Illinois; at an elevation of 722 feet; 35 feet north and 3,525 feet west of the southeast corner of sec. 6, T. 29 N., R. 11 E.; USGS West Kankakee topographic quadrangle; lat. 41 degrees 00 minutes 57 seconds N. and long. 88 degrees 59 minutes 12 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A—8 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; slightly acid; clear smooth boundary.

2Bt1—12 to 18 inches; brown (10YR 4/3) silty clay loam; moderate very fine subangular blocky structure; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; 5 percent fine gravel; moderately acid; clear smooth boundary.

2Bt2—18 to 24 inches; dark yellowish brown (10YR 4/4) silty clay; weak fine prismatic structure parting to moderate very fine and fine subangular blocky; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 5 percent fine gravel; moderately acid; clear smooth boundary.

2Bt3—24 to 30 inches; light olive brown (2.5Y 5/4) silty clay; weak fine prismatic structure parting to moderate fine angular and subangular blocky; firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent fine gravel; neutral; clear wavy boundary.

2Bt4—30 to 42 inches; 60 percent yellowish brown (10YR 5/6) and 40 percent grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular and subangular blocky; firm; few distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; 5 percent fine gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.

2BCt—42 to 48 inches; 50 percent yellowish brown (10YR 5/6) and 50 percent gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular and angular blocky; firm; few distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; 2 percent fine gravel; slightly effervescent; moderately alkaline; gradual wavy boundary.

2Cd—48 to 60 inches; 90 percent yellowish brown (10YR 5/4 and 5/6) and 10 percent gray (5Y 5/1) silty clay loam; massive; very firm; 5 percent fine gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 16 inches
Thickness of loess or silty material: Less than 18 inches
Depth to carbonates: 24 to 42 inches
Thickness of the solum: 24 to 60 inches

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

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay
Content of gravel—less than 10 percent

2Cd horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam, silty clay, or clay loam
Content of gravel—less than 10 percent

Virgil Series

Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Outwash plains and ground moraines
Parent material: Loess and the underlying outwash
Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon for MLRA 95B

Virgil silt loam, 0 to 2 percent slopes, in Stephenson County, Illinois; at an elevation of 765 feet; 300 feet south and 1,346 feet east of the northwest corner of sec. 8, T. 26 N., R. 8 E.; USGS Freeport East topographic quadrangle; lat. 42 degrees 16 minutes 30 seconds N. and long. 89 degrees 36 minutes 38 seconds W., NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

Eg—7 to 13 inches; dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; weak thin platy structure parting to moderate fine granular; friable; many fine roots; few faint black (10YR 2/1) organic coatings on faces of peds and fillings in root channels; few fine prominent brown (7.5YR 4/4) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

Bt1—13 to 17 inches; grayish brown (10YR 5/2) and brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; few fine prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

Bt2—17 to 25 inches; grayish brown (10YR 5/2) and brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; common faint dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) clay films on faces of peds; common faint light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; few fine prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; strongly acid; gradual smooth boundary.

Btg1—25 to 35 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; many faint grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

Btg2—35 to 44 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium and coarse subangular and angular blocky structure; firm; few fine roots; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many fine black (10YR 2/1) iron and manganese oxide nodules and concretions throughout; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg3—44 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium and coarse angular blocky structure; firm; few fine roots; few prominent gray (N 5/0) clay films on faces of peds; many fine black (10YR 2/1) iron and manganese oxide nodules and concretions throughout; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

2Btg4—49 to 58 inches; grayish brown (2.5Y 5/2) and light brownish gray (2.5Y 6/2) loam; weak coarse angular blocky structure; firm; few prominent dark gray (N 4/0) clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; neutral; gradual smooth boundary.

2C—58 to 60 inches; brown (10YR 4/3) and dark yellowish brown (10YR 4/4) sandy loam; massive; friable; common fine distinct dark gray (10YR 4/1) and gray (10YR 5/1) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: 45 to 70 inches
Thickness of the solum: 42 to 70 inches

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

Eg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

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

2Bt or 2Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, sandy loam, or silt loam
Content of gravel—less than 10 percent

2C or 2Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—loam, sandy loam, silt loam, clay loam, or loamy sand
Content of gravel—less than 15 percent

Warsaw Series

Drainage class: Well drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains, stream terraces, and kames
Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 4 percent

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

Typical Pedon for MLRA 95B

Warsaw loam, 0 to 2 percent slopes, in McHenry County, Illinois; at an elevation of 861 feet; 2,094 feet south and 2,565 feet east of the northwest corner of sec. 8, T. 43 N., R. 7 E.; USGS Huntley topographic quadrangle; lat. 42 degrees 13 minutes 12 seconds N. and long. 88 degrees 26 minutes 32 seconds W., NAD 27:

Ap—0 to 6 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; weak fine and medium subangular blocky structure; friable; common very fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; 1 percent gravel; neutral; clear smooth boundary.
A—6 to 11 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure parting to weak medium granular; friable; common very fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; 1 percent gravel; neutral; clear smooth boundary.
BA—11 to 15 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; friable; common very fine roots; few distinct very dark brown (10YR 2/2) and black (10YR 2/1) organic coatings on faces of peds; 1 percent gravel; slightly acid; clear smooth boundary.
Bt1—15 to 19 inches; brown (10YR 4/3) clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) clay films on faces of peds; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; 1 percent gravel; moderately acid; clear smooth boundary.
Bt2—19 to 31 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films and few distinct dark brown (10YR 3/3) clay films on faces of peds; 3 percent gravel; slightly acid; abrupt wavy boundary.
2C—31 to 60 inches; yellowish brown (10YR 5/4) very gravelly loamy coarse sand and very gravelly coarse sand; single grain; loose; violently effervescent; 38 percent gravel; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to sandy and gravelly deposits: 24 to 40 inches
Depth to carbonates: 24 to 40 inches
Thickness of the solum: 24 to 40 inches

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

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam, loam, sandy clay loam, or silty clay loam
Content of gravel—less than 15 percent

2C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—2 to 4
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—15 to 75 percent

Wauconda Series

Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon for MLRA 110

Wauconda silt loam, 0 to 2 percent slopes, in Lake County, Illinois; at an elevation of 778 feet; 1,780 feet north and 2,640 feet west of the southeast corner of sec. 13, T. 45 N., R. 10 E.; USGS Antioch topographic quadrangle; lat. 42 degrees 22 minutes 34 seconds N. and long. 88 degrees 00 minutes 55 seconds W., NAD 27:

Ap—0 to 9 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to weak medium granular; friable; common very fine roots; neutral; clear smooth boundary.

E—9 to 14 inches; dark gray (2.5Y 4/1) silt loam; weak fine and medium subangular blocky structure parting to moderate fine and medium granular; friable; common very fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—14 to 23 inches; brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine and medium distinct olive brown (2.5Y 4/4) and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bt2—23 to 30 inches; light olive brown (2.5Y 5/4) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; few distinct olive brown (2.5Y 4/3) clay films on faces of peds; common fine black (2.5Y 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine and medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

2BC—30 to 38 inches; light olive brown (2.5Y 5/3), stratified sandy loam and silt loam; weak medium subangular blocky structure; very friable; common fine black (2.5Y 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 10 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C1—38 to 41 inches; light olive brown (2.5Y 5/4) loamy coarse sand; single grain; loose; 13 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2C2—41 to 60 inches; brown (10YR 5/3), stratified silt loam and sandy loam; massive; firm; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; 2 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Thickness of the solum: 24 to 45 inches

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

E horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

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

2BC horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam, loam, sandy loam, or fine sandy loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—stratified silt loam to sand
Content of gravel—less than 15 percent

Waupecan Series

Drainage class: Well drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains and stream terraces

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Slope range: 0 to 4 percent

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

Typical Pedon for MLRA 95B

Waupecan silt loam, 0 to 2 percent slopes, in Kane County, Illinois; at an elevation of 880 feet; 225 feet south and 1,455 feet west of the northeast corner of sec. 21, T. 42 N., R. 6 E.; USGS Hampshire topographic quadrangle; lat. 42 degrees 06 minutes 34 seconds N. and long. 88 degrees 32 minutes 08 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; common very fine roots; neutral; abrupt smooth boundary.
A—8 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.
BA—13 to 19 inches; brown (10YR 4/3) silt loam; weak very fine subangular blocky structure; firm; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings in pores; slightly acid; clear smooth boundary.
Bt1—19 to 28 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—28 to 38 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; abrupt smooth boundary.
2Bt3—38 to 44 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium and coarse subangular blocky structure; firm; few very fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds; 1 percent dolomitic pebbles; moderately acid; clear smooth boundary.
2Bt4—44 to 49 inches; brown (7.5YR 4/4) sandy clay loam; weak coarse subangular blocky structure; friable; few very fine roots; many distinct dark brown (7.5YR 3/4) clay films on faces of peds; 2 percent dolomitic pebbles; slightly acid; clear smooth boundary.
2Bt5—49 to 55 inches; brown (7.5YR 4/4) sandy loam; weak coarse subangular blocky structure; friable; many distinct dark brown (7.5YR 3/3) clay films on faces of peds; 8 percent dolomitic pebbles; neutral; abrupt smooth boundary.
3C—55 to 70 inches; brown (10YR 5/3) gravelly sand; single grain; loose; 32 percent dolomitic pebbles and cobblestones; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of loess or silty material: 24 to 48 inches
Depth to sandy and gravelly deposits: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Thickness of the solum: 40 to 65 inches

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

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

2B horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—loam, clay loam, sandy clay loam, sandy loam, loamy sand, or the gravelly analogs of these textures
Content of gravel—less than 35 percent

3C horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—15 to 70 percent

Will Series

Drainage class: Poorly drained
Permeability: Moderate in the upper part; very rapid in the lower part
Landform: Outwash plains, stream terraces, and kames
Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 2 percent

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

Typical Pedon for MLRA 95B

Will loam, 0 to 2 percent slopes, in Winnebago County, Illinois; at an elevation of 720 feet; 85 feet north and 2,020 feet west of the southeast corner of sec. 13, T. 43 N., R. 2 E.; USGS Cherry Valley topographic quadrangle; lat. 42 degrees 11 minutes 47 seconds N. and 88 degrees 56 minutes 45 seconds W., NAD 27:

Ap—0 to 8 inches; black (N 2.5/0) loam, very dark gray (10YR 3/1) dry; moderate very fine granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.

A—8 to 14 inches; black (N 2.5/0) loam, very dark gray (10YR 3/1) dry; moderate very fine and fine subangular blocky structure; friable; many fine roots; neutral; clear smooth boundary.

Btg1—14 to 19 inches; dark grayish brown (2.5Y 4/2) loam; moderate fine subangular blocky structure; friable; common fine roots; common distinct black (10YR 2/1) organo-clay films on faces of peds; common black (N 2.5/0) wormcasts; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Btg2—19 to 25 inches; grayish brown (2.5Y 5/2) sandy clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common black (N 2.5/0) wormcasts; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 10 percent gravel; neutral; abrupt smooth boundary.

BCg—25 to 28 inches; 65 percent dark grayish brown (2.5Y 4/2) and 35 percent very dark brown (10YR 2/2) sandy loam; weak medium subangular blocky structure; very friable; few fine roots; 12 percent gravel; slightly effervescent; slightly alkaline; abrupt smooth boundary.

2Cg1—28 to 32 inches; light olive brown (2.5Y 5/3) gravelly sand; single grain; loose; few fine prominent dark reddish gray 5YR 4/2) iron depletions in the matrix; 20 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2Cg2—32 to 36 inches; dark grayish brown (2.5Y 4/2) gravelly sandy loam with three 1/4-inch-thick strata of black (10YR 2/1) sandy loam; massive; friable; 25 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2Cg3—36 to 60 inches; 60 percent light olive brown (2.5Y 5/3) and 40 percent light brownish gray (2.5Y 6/2) very gravelly sand; single grain; loose; 45 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to sandy and gravelly deposits: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Thickness of the solum: 24 to 40 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—loam, clay loam, silty clay loam, or silt loam

Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—clay loam, loam, sandy clay loam, or silty clay loam
Content of gravel—less than 15 percent

2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—30 to 70 percent

Wingate Series

Drainage class: Moderately well drained
Permeability: Moderate in the upper part; moderately slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 2 to 10 percent

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

Typical Pedon for MLRA 108

Wingate silt loam, 2 to 5 percent slopes, in Edgar County, Illinois; at an elevation of 650 feet; 985 feet north and 1,455 feet east of the southwest corner of sec. 25, T. 15 N., R. 12 W.; USGS Paris North topographic quadrangle; lat. 39 degrees 43 minutes 23 seconds N. and long. 87 degrees 42 minutes 07 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate medium subangular blocky structure parting to moderate fine granular; friable; many very fine roots; neutral; abrupt smooth boundary.

E—9 to 12 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium platy structure; friable; common very fine roots; neutral; abrupt smooth boundary.

Bt1—12 to 22 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—22 to 27 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium angular blocky structure; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt3—27 to 36 inches; yellowish brown (10YR 5/6) clay loam; moderate coarse subangular blocky structure; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few distinct black (10YR 2/1) iron and manganese oxide coatings on faces of peds; common fine and medium irregular black (10YR 2/1) weakly cemented iron and manganese oxide nodules throughout; few fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; about 2 percent fine gravel; moderately acid; clear smooth boundary.

2Bt4—36 to 52 inches; yellowish brown (10YR 5/4) clay loam; weak coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine rounded black (10YR 2/1) weakly cemented iron and manganese oxide nodules throughout; about 5 percent fine gravel; neutral; gradual smooth boundary.

2C—52 to 60 inches; yellowish brown (10YR 5/4) loam; massive; firm; few fine rounded black (10YR 2/1) weakly cemented iron and manganese oxide nodules throughout; about 5 percent fine gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: 29 to 65 inches
Thickness of the solum: 30 to 65 inches

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

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3
Texture—silt loam

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

2Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—2 to 6
Texture—clay loam or loam
Content of gravel—1 to 7 percent

2C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—2 to 6
Texture—loam
Content of gravel—1 to 10 percent

Zurich Series

Drainage class: Moderately well drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 2 to 4 percent

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

Typical Pedon for MLRA 110

Zurich silt loam, 2 to 4 percent slopes, in Lake County, Illinois; at an elevation of 640 feet; 300 feet north and 2,260 feet east of the southwest corner of sec. 23, T. 43 N., R. 11 E.; USGS Wheeling topographic quadrangle; lat. 42 degrees 10 minutes 58 seconds N. and long. 87 degrees 55 minutes 01 second W., NAD 27:

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

E—5 to 9 inches; 60 percent dark grayish brown (10YR 4/2) and 40 percent brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak fine subangular blocky; 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.

BE—9 to 16 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable; few very fine and fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt1—16 to 23 inches; brown (7.5YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; many distinct brown (7.5YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—23 to 28 inches; brown (7.5YR 4/4) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2Bt3—28 to 31 inches; brown (7.5YR 4/3) loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct brown (7.5YR 4/2) clay films on faces of peds; common medium distinct grayish brown (10YR 5/2) and light brownish gray (10YR 6/2) iron depletions in the matrix; very slightly effervescent; slightly alkaline; clear smooth boundary.

2BC—31 to 38 inches; yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; friable; few very fine roots; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium distinct yellowish brown (10YR 5/6) and brown (7.5YR 4/4) masses of iron accumulation in the matrix; many medium coarse distinct light brownish gray (10YR 6/2) iron depletions in the matrix; slightly effervescent; moderately alkaline; gradual smooth boundary.

2C—38 to 64 inches; 70 percent yellowish brown (10YR 5/4 and 5/6) and 30 percent light brownish gray (10YR 6/2), stratified silt loam and very fine sandy loam; massive; friable; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine and medium white (10YR 8/1) carbonate concretions throughout; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of loess or silty material: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Thickness of the solum: 24 to 45 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

Bt or BE horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt or 2BC horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam, loam, sandy loam, or fine sandy loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—stratified silt loam to very fine sand
Content of gravel—less than 15 percent

Formation of the Soils

Soil forms through processes that act on deposited geologic material. The factors of soil formation are the physical and mineralogical composition of the parent material; the climate in which the soil formed; the plant and animal life on and in the soil; the relief; and the length of time the processes of soil formation have acted on the parent material (Jenny, 1941).

Climate and plant and animal life are the dominant active factors of soil formation. They act directly on the parent material, either in place or after it has been moved by water, wind, or glaciers, and slowly change it into a natural body that has genetically related horizons. Relief modifies soil formation and can inhibit soil formation on the steeper, eroded slopes and in wet depressional or nearly level areas by controlling the moisture status of soils. Finally, time is needed for changing the parent material into a soil that has differentiated horizons.

The factors of soil formation are so closely interrelated and conditioned by each other that few generalizations can be made regarding the effects of any one factor unless the effects of the other factors are understood.

Parent Material

Parent material is the unconsolidated geologic formations from which soils form. The soils of Kane County were derived from parent materials that were directly or indirectly impacted by glaciation of the Wisconsinan age. The parent materials in Kane County include till; loess, or silty material; outwash; organic deposits; and alluvium. Some of these materials occur over dolomitic limestone.

Till is material laid down directly by glaciers with a minimum of water action. It consists of particles of different sizes mixed together. The small pebbles in till generally have distinct edges and corners, indicating that they have not been subject to intense washing by water. The glaciers deposited an extensive morainic system in Kane County. The major moraines, from west to east, include the Elburn Complex and the Marengo, Barlina, St. Charles, and Minooka moraines. Two glacial formations cover the county. The Tiskilwa Formation, which is loam and clay loam till, is primarily in the northwestern part of the county. The Lemont Formation is sandy loam till in the far northeast corner of the county; loam and clay loam till in the southwestern part; and silty clay loam till in the southeastern part (Hansel and Johnson, 1996).

Sometime after the glaciers retreated, conditions became drier and the winds increased. A layer of silty material, or loess, was deposited over the area directly by the winds. The primary sources of the loess were the flood plains along major rivers. Some of the silty material in the county may be of local origin since it contains more sand than is typical for loess. In Kane County, the thickness of the loess generally ranges from several inches to 4 or 5 feet; the loess is thickest in the southwestern part of the county. Flanagan, Kaneville, and Waupecan soils have 3 to 5 feet of loess overlying a secondary parent material. Casco, Ozaukee, and Kidami soils, however, have little or no loess.

Outwash was deposited by running meltwater from glaciers. The particle size of the material that was deposited depended on the speed of the stream or river. As the water velocity slowed, the larger particles were initially deposited. Over a further distance, there was a continued reduction in water velocity and smaller particles were deposited. Outwash deposits in Kane County range from loamy sediments to a mixture of coarse sand and gravel. Brenton and Selma soils formed entirely or partly in loamy outwash. Other meltwater deposits of sand and gravel occur in the form of kames and eskers. These conical and elongated mounds and narrow winding ridges were formed when meltwater moved very rapidly on top of and through the glaciers. Johnson Mound is an example of a kame. The Kaneville esker was the longest in the county, but because of sand and gravel extraction little of the original landform remains.

Organic deposits consist of decomposed plant remnants. After the glaciers receded, water was left standing in depressional areas. As a result, these areas were very wet during the period of soil formation, and the decaying plant material accumulated more quickly than it decomposed. Most of these plant remains are decomposed to a point that they are unrecognizable. These organic deposits are called sapric material. Houghton and Lena soils formed in these deposits.

Alluvium consists of material and sediments recently deposited by streams and rivers on flood plains. The texture of alluvium varies, depending on the velocity of the water source. Millington soils formed in loamy alluvium.

Lacustrine material was deposited from still or ponded glacial meltwater. After the coarser fragments were deposited as outwash by moving water, the finer particles, such as very fine sand, silt, and clay, settled in still water. Milford soils formed in lacustrine deposits.

Small areas of soils that formed in till over dolomitic bedrock are along the Fox River. Milton soils are underlain by bedrock.

Climate

Kane County has a temperate, humid continental climate. The general climate has had an important overall influence on the characteristics of the soils. It is essentially uniform throughout the county, however, and has not caused any major differences among the soils.

Climate has very important effects on weathering, vegetation, and erosion. The weathering of minerals in the soil increases as temperature and rainfall increase. As water moves downward, clay is moved from the surface soil to the subsoil, where it accumulates. The water also dissolves soluble salts and leaches them downward. Climate also influences the kind and extent of plant and animal life. The climate in Kane County has generally favored prairie grasses (fig. 9) and hardwood forests. Heavy rains can harm exposed areas of soil that are farmed or in the process of being developed. Spring rains and wind can cause extensive erosion if crop residue, trees, or other vegetative cover is removed from the surface. More soil will be lost through erosion each year than is formed by natural processes.

Living Organisms

Soils are affected by the vegetation under which they formed. The main contribution of the vegetation and biological processes is the addition of organic matter and nitrogen to the soil. The amount of organic material in the soil depends on the kind of native plants that grew on the soil. Grasses have many fine fibrous roots that add large amounts of organic matter

Figure 9.—Native prairie vegetation in an area of Drummer silty clay loam, 0 to 2 percent slopes, at Fermi National Accelerator Laboratory.

to the soil when they die and decay. Soils that formed under prairie vegetation, therefore, have a thick, black or dark brown surface layer. Catlin, Drummer, and Flanagan soils formed under prairie vegetation. In contrast, the soils that supported native vegetation of deciduous trees have a thin, light-colored surface layer because less organic matter is added to the soil. Mayville and Fox soils formed under forest vegetation.

Bacteria, fungi, and other micro-organisms help to break down the organic material and thus provide nutrients for plants and other soil organisms. The stability of soil aggregates, structure units made up of sand, silt, and clay, is affected by microbial activity because cellular excretions from these organisms help to bind soil particles together. Stable aggregates help to maintain soil porosity and promote favorable relationships among soil, water, and air. Moreover, earthworms, crayfish, insects, and burrowing animals tend to incorporate organic material into the soil and to keep soils open and porous.

Human activities are also important factors in Kane County. Urban and industrial expansion over the past several decades has resulted in land being drained, cleared, and excavated and filled. These practices have had a pronounced effect on past soil formation and on present and future soil development.

Topography

Major topographic features in Kane County reflect the influence of glacial deposition. These topographic features include broad, hilly ridges (end moraines); somewhat flat or gently rolling areas (ground moraines); large knobs of sand and gravel (kames); broad plains of sand and gravel (outwash plains); and the major Fox River Valley, which was the main drainageway for glacial meltwater and later accumulated sand and gravel deposits (Gilkeson and Westerman, 1976).

Relief, which includes elevation, topography, and water table levels, largely determines the natural drainage of soils. In Kane County, the slopes range from 0 to 30 percent. Natural soil drainage ranges from well drained on the backslopes and summits to very poorly drained in depressions.

Relief affects the depth to the seasonal high water table or natural drainage of the soil by influencing infiltration and runoff rates. The poorly drained Drummer and Elpaso soils are in low-lying, nearly level areas and have a water table close to the surface for part of the year. The soil pores contain water, which restricts the circulation of air in the soil. Under these conditions, iron and manganese compounds are chemically reduced. Consequently, the subsoil is dull gray and mottled. In the more sloping, well drained Dresden and Fox soils, the water table is lower and some of the rainfall runs off the surface. The soil pores contain less water and more air than those in the lower lying soils. The iron and manganese compounds are well oxidized. As a result, the subsoil has brown colors.

Local relief also influences the severity of erosion. Even though some erosion occurs on almost all sloping soils, the hazard of erosion generally becomes more severe as the slope increases. The runoff and the removal of soil material on these slopes result in the formation of soils that have a relatively thin solum.

Time

The length of time needed for the formation of a soil depends on the other factors of soil formation. Soils form more rapidly and are more acid if the parent material has a low content of lime. Thus, more rapidly permeable soils form more readily than soils that are more slowly permeable because lime and other soluble minerals are leached more quickly. Forest soils form more quickly than prairie soils because grasses are more efficient in recycling calcium and other bases from the subsoil to the surface layer. Soils in humid climates that support good growth of vegetation form more rapidly than those in dry climates.

The length of time that the parent materials have been in place determines, to great extent, the degree of profile development. Most of the soils in Kane County began formation with the retreat of the last glacier about 12,500 years ago. On the flood plains, however, material is deposited during each flood. This continual deposition slows development. Otter soils are examples of soils on flood plains.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

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

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

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.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

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.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

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.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

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. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

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.

Closed depression. A low area completely surrounded by higher ground and having no natural outlet.

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.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

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.

Corrosion. 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.

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.

Drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

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 soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

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.

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. Synonym: scarp.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

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

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

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

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

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. 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.

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 as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded 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.

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; a deposit of rock and mineral debris dragged along, in, on, or beneath a glacier and emplaced by processes including basal lodgment and release from the downwasting stagnant ice by ablation.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Head slope. 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-chroma zones. Zones having chroma of 3 or more. Typical colors in areas of iron concentrations.

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.

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.

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.

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. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron accumulations. High-chroma zones having a high content of iron and manganese oxide because of chemical oxidation and accumulation but having a clay content similar to that of the adjacent matrix. A type of redoximorphic feature.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Leached soil. A soil from which most of the soluble constituents have been removed from the entire profile or have been removed from one part of the profile and have accumulated in another part.

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

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

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

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

Low-chroma zones. Zones having chroma of 2 or less. Typical colors in areas of iron depletions.

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.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

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. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

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

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

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. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

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.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. 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. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water 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:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 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

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

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

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

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.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

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

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.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The 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. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth’s surface; the loose earth material above the solid rock.

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

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

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

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts 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.

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.

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.

Seasonal high water table. A zone of saturation at the highest average depth during the wettest season. It is at least 6 inches thick and persists in the soil for more than a few weeks.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. 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.

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 position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

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. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

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.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

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

Soil quality. The fitness of a specific kind of soil to function within its surroundings, support plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation.

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.

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.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of 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.

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.

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 of the series for which the soils are named.

Terminal moraine. A belt of thick drift that generally marks the termination of important glacial advances. It commonly is a massive, arcuate ridge or complex of ridges underlain by till and other types of drift.

Terrace. 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 (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Unsorted, nonstratified drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Till plain. An extensive area of nearly level to undulating soils underlain by till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms 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.

Understory. Any plants in a forest community that grow to a height of less than 5 feet.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Aurora College, Illinois)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	^{o}F	^{o}F	^{o}F	^{o}F	^{o}F	Units	In	In	In		In
January----	29.9	11.7	20.8	56	-19	0	1.62	0.74	2.38	4	9.9
February---	35.5	16.8	26.2	62	-13	0	1.52	.69	2.25	4	7.0
March------	47.2	27.3	37.2	78	4	22	2.55	1.17	3.74	5	3.4
April------	59.8	37.5	48.6	84	18	92	3.91	2.42	5.25	7	.7
May--------	72.1	47.9	60.0	91	30	321	3.91	2.32	5.33	7	.0
June-------	81.2	57.3	69.2	96	41	580	4.29	2.58	5.83	7	.0
July-------	84.6	62.2	73.4	98	47	728	4.40	2.26	6.26	5	.0
August-----	82.5	60.4	71.5	96	47	661	4.46	2.02	6.55	6	.0
September--	75.4	51.8	63.6	93	33	410	3.30	1.74	4.73	5	.0
October----	63.5	40.1	51.8	85	22	134	2.68	1.40	3.80	5	.1
November---	47.8	29.5	38.7	73	8	21	3.23	1.58	4.67	5	1.4
December---	34.1	17.6	25.9	60	-11	2	2.44	1.28	3.46	5	8.3
Yearly:											
Average---	59.5	38.3	48.9	---	---	---	---	---	---	---	---
Extreme---	103	-26	---	99	-20	---	---	---	---	---	---
Total-----	---	---	---	---	---	2,972	38.31	30.77	43.10	65	30.8

* 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 Aurora College, 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. 17	Apr. 24	May 16
2 years in 10 later than--	Apr. 12	Apr. 20	May 11
5 years in 10 later than--	Apr. 3	Apr. 13	Apr. 30
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 15	Oct. 2	Sept. 27
2 years in 10 earlier than--	Oct. 21	Oct. 8	Oct. 1
5 years in 10 earlier than--	Nov. 1	Oct. 20	Oct. 8

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Aurora College, 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	189	169	143
8 years in 10	196	176	149
5 years in 10	209	190	160
2 years in 10	223	203	172
1 year in 10	230	210	178

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
23A	Blount silt loam, 0 to 2 percent slopes	11	*
59A	Lisbon silt loam, 0 to 2 percent slopes	2,590	0.8
59B	Lisbon silt loam, 2 to 4 percent slopes	750	0.2
60C2	La Rose loam, 5 to 10 percent slopes, eroded	575	0.2
60D2	La Rose loam, 10 to 18 percent slopes, eroded	396	0.1
62A	Herbert silt loam, 0 to 2 percent slopes	3,069	0.9
67A	Harpster silty clay loam, 0 to 2 percent slopes	3,098	0.9
69A	Milford silty clay loam, 0 to 2 percent slopes	4,683	1.4
103A	Houghton muck, 0 to 2 percent slopes	5,285	1.6
104A	Virgil silt loam, 0 to 2 percent slopes	2,358	0.7
125A	Selma loam, 0 to 2 percent slopes	1,291	0.4
134C2	Camden silt loam, 5 to 10 percent slopes, eroded	1,536	0.5
146A	Elliott silt loam, 0 to 2 percent slopes	2,386	0.7
146B	Elliott silt loam, 2 to 4 percent slopes	1,244	0.4
148B	Proctor silt loam, 2 to 5 percent slopes	24	*
149A	Brenton silt loam, 0 to 2 percent slopes	6,507	1.9
152A	Drummer silty clay loam, 0 to 2 percent slopes	54,208	16.2
154A	Flanagan silt loam, 0 to 2 percent slopes	4,206	1.3
171A	Catlin silt loam, 0 to 2 percent slopes	1,572	0.5
171B	Catlin silt loam, 2 to 5 percent slopes	1,467	0.4
193A	Mayville silt loam, 0 to 2 percent slopes	192	*
193B	Mayville silt loam, 2 to 5 percent slopes	7,770	2.3
193C2	Mayville silt loam, 5 to 10 percent slopes, eroded	3,278	1.0
198A	Elburn silt loam, 0 to 2 percent slopes	5,667	1.7
206A	Thorp silt loam, 0 to 2 percent slopes	1,062	0.3
210A	Lena muck, 0 to 2 percent slopes	1,951	0.6
219A	Millbrook silt loam, 0 to 2 percent slopes	3,791	1.1
221B	Parr silt loam, 2 to 5 percent slopes	473	0.1
221B2	Parr silt loam, 2 to 5 percent slopes, eroded	37	*
221C2	Parr silt loam, 5 to 10 percent slopes, eroded	258	*
223B	Varna silt loam, 2 to 4 percent slopes	5,324	1.6
223C2	Varna silt loam, 4 to 6 percent slopes, eroded	1,504	0.4
232A	Ashkum silty clay loam, 0 to 2 percent slopes	4,327	1.3
233A	Birkbeck silt loam, 0 to 2 percent slopes	522	0.2
233B	Birkbeck silt loam, 2 to 5 percent slopes	1,163	0.3
233C2	Birkbeck silt loam, 5 to 10 percent slopes, eroded	276	*
236A	Sabina silt loam, 0 to 2 percent slopes	789	0.2
242A	Kendall silt loam, 0 to 2 percent slopes	156	*
290A	Warsaw loam, 0 to 2 percent slopes	890	0.3
290B	Warsaw loam, 2 to 4 percent slopes	1,022	0.3
297B	Ringwood silt loam, 2 to 4 percent slopes	4	*
298A	Beecher silt loam, 0 to 2 percent slopes	3,317	1.0
298B	Beecher silt loam, 2 to 4 percent slopes	1,356	0.4
318A	Lorenzo loam, 0 to 2 percent slopes	268	*
318B	Lorenzo loam, 2 to 4 percent slopes	819	0.2
318C2	Lorenzo loam, 4 to 6 percent slopes, eroded	502	0.1
318D2	Lorenzo loam, 6 to 12 percent slopes, eroded	266	*
323C2	Casco loam, 4 to 6 percent slopes, eroded	1,122	0.3
323D2	Casco loam, 6 to 12 percent slopes, eroded	1,353	0.4
325A	Dresden silt loam, 0 to 2 percent slopes	1,434	0.4
325B	Dresden silt loam, 2 to 4 percent slopes	7,987	2.4
325C2	Dresden silt loam, 4 to 6 percent slopes, eroded	2,197	0.7
327A	Fox silt loam, 0 to 2 percent slopes	759	0.2
327B	Fox silt loam, 2 to 4 percent slopes	3,115	0.9
327C2	Fox silt loam, 4 to 6 percent slopes, eroded	2,468	0.7
327D2	Fox loam, 6 to 12 percent slopes, eroded	1,478	0.4
329A	Will loam, 0 to 2 percent slopes	1,965	0.6
330A	Peotone silty clay loam, 0 to 2 percent slopes	2,222	0.7
343A	Kane silt loam, 0 to 2 percent slopes	1,703	0.5
344C2	Harvard silt loam, 5 to 10 percent slopes, eroded	1,508	0.4
348B	Wingate silt loam, 2 to 5 percent slopes	4,141	1.2
348C2	Wingate silt loam, 5 to 10 percent slopes, eroded	1,072	0.3
356A	Elpaso silty clay loam, 0 to 2 percent slopes	11,764	3.5

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
361B	Kidder loam, 2 to 4 percent slopes	459	0.1
361C2	Kidder loam, 4 to 6 percent slopes, eroded	305	*
361D2	Kidder loam, 6 to 12 percent slopes, eroded	108	*
361E2	Kidder loam, 12 to 20 percent slopes, eroded	190	*
369A	Waupecan silt loam, 0 to 2 percent slopes	3,609	1.1
369B	Waupecan silt loam, 2 to 4 percent slopes	1,667	0.5
442A	Mundelein silt loam, 0 to 2 percent slopes	2,336	0.7
488A	Hooppole loam, 0 to 2 percent slopes	1,769	0.5
512A	Danabrook silt loam, 0 to 2 percent slopes	1,230	0.4
512B	Danabrook silt loam, 2 to 5 percent slopes	11,686	3.5
512C2	Danabrook silt loam, 5 to 10 percent slopes, eroded	1,353	0.4
523A	Dunham silty clay loam, 0 to 2 percent slopes	1,339	0.4
526A	Grundelein silt loam, 0 to 2 percent slopes	321	*
527B	Kidami silt loam, 2 to 4 percent slopes	6,081	1.8
527C2	Kidami loam, 4 to 6 percent slopes, eroded	8,926	2.7
527D2	Kidami loam, 6 to 12 percent slopes, eroded	4,559	1.4
527D3	Kidami clay loam, 6 to 12 percent slopes, severely eroded	306	*
529A	Selmass loam, 0 to 2 percent slopes	324	*
530B	Ozaukee silt loam, 2 to 4 percent slopes	5,126	1.5
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded	2,415	0.7
530D2	Ozaukee silt loam, 6 to 12 percent slopes, eroded	2,061	0.6
530E	Ozaukee silt loam, 12 to 20 percent slopes	1,276	0.4
531B	Markham silt loam, 2 to 4 percent slopes	4,397	1.3
531C2	Markham silt loam, 4 to 6 percent slopes, eroded	2,042	0.6
541B	Graymont silt loam, 2 to 5 percent slopes	123	*
570B	Martinsville silt loam, 2 to 4 percent slopes	2,051	0.6
570C2	Martinsville silt loam, 4 to 6 percent slopes, eroded	418	0.1
614A	Chenoa silty clay loam, 0 to 2 percent slopes	98	*
618E	Senachwine silt loam, 12 to 20 percent slopes	3,845	1.1
618F	Senachwine silt loam, 20 to 30 percent slopes	518	0.2
626A	Kish loam, 0 to 2 percent slopes	80	*
656B	Octagon silt loam, 2 to 4 percent slopes	6,906	2.1
656C2	Octagon silt loam, 4 to 6 percent slopes, eroded	6,221	1.9
656D2	Octagon silt loam, 6 to 12 percent slopes, eroded	2,006	0.6
662A	Barony silt loam, 0 to 2 percent slopes	2,026	0.6
662B	Barony silt loam, 2 to 5 percent slopes	6,517	1.9
663A	Clare silt loam, 0 to 2 percent slopes	2,365	0.7
663B	Clare silt loam, 2 to 5 percent slopes	3,142	0.9
667A	Kaneville silt loam, 0 to 2 percent slopes	1,789	0.5
667B	Kaneville silt loam, 2 to 5 percent slopes	1,637	0.5
668A	Somonauk silt loam, 0 to 2 percent slopes	870	0.3
668B	Somonauk silt loam, 2 to 5 percent slopes	4,063	1.2
679A	Blackberry silt loam, 0 to 2 percent slopes	1,848	0.6
679B	Blackberry silt loam, 2 to 5 percent slopes	836	0.2
680A	Campton silt loam, 0 to 2 percent slopes	311	*
680B	Campton silt loam, 2 to 5 percent slopes	772	0.2
696B	Zurich silt loam, 2 to 4 percent slopes	1,098	0.3
697A	Wauconda silt loam, 0 to 2 percent slopes	1,272	0.4
739B	Milton silt loam, 2 to 6 percent slopes	231	*
739D	Milton silt loam, 6 to 12 percent slopes	359	0.1
791A	Rush silt loam, 0 to 2 percent slopes	465	0.1
791B	Rush silt loam, 2 to 4 percent slopes	1,096	0.3
791C2	Rush silt loam, 4 to 6 percent slopes, eroded	314	*
792A	Bowes silt loam, 0 to 2 percent slopes	2,558	0.8
792B	Bowes silt loam, 2 to 4 percent slopes	2,294	0.7
792C2	Bowes silt loam, 4 to 6 percent slopes, eroded	268	*
802B	Orthents, loamy, undulating	4,152	1.2
802D	Orthents, loamy, rolling	231	*
805B	Orthents, clayey, undulating	303	*
830	Landfills	71	*
864	Pits, quarry	458	0.1
865	Pits, gravel	2,297	0.7

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
903A	Muskego and Houghton mucks, 0 to 2 percent slopes	26	*
969E2	Casco-Rodman complex, 12 to 20 percent slopes, eroded	1,350	0.4
969F	Casco-Rodman complex, 20 to 30 percent slopes	1,594	0.5
1103A	Houghton muck, undrained, 0 to 2 percent slopes	1,156	0.3
1107A	Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded	2	*
1210A	Lena muck, undrained, 0 to 2 percent slopes	52	*
1903A	Muskego and Houghton mucks, undrained, 0 to 2 percent slopes	1	*
3076A	Otter silt loam, 0 to 2 percent slopes, frequently flooded	4,187	1.2
3082A	Millington silt loam, 0 to 2 percent slopes, frequently flooded	1,541	0.5
8076A	Otter silt loam, 0 to 2 percent slopes, occasionally flooded	289	*
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded	1,320	0.4
W	Water	3,810	1.1
	Total	335,650	100.0

* Less than 0.1 percent.

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland

(See text for a description of the limitations and hazards listed in this table. Absence of an entry indicates that the soil is not suited to use as cropland or pastureland.)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
23A:		
Blount	Crusting, restricted permeability, wetness	Frost heave, wetness
59A:		
Lisbon	Wetness	Frost heave, wetness
59B:		
Lisbon	Water erosion, wetness	Frost heave, water erosion, wetness
60C2:		
La Rose	Crusting, water erosion	Frost heave, water erosion
60D2:		
La Rose	Crusting, water erosion	Equipment limitation, frost heave, water erosion
62A:		
Herbert	Wetness	Frost heave, wetness
67A:		
Harpster	Excess lime, ponding, poor tilth	Frost heave, ponding
69A:		
Milford	Ponding, poor tilth	Frost heave, ponding
103A:		
Houghton	Ponding, subsidence, wind erosion	Frost heave, low pH, ponding, wind erosion
104A:		
Virgil	Wetness	Frost heave, low pH, wetness
125A:		
Selma	Ponding	Frost heave, ponding
134C2:		
Camden	Crusting, water erosion	Frost heave, low pH, water erosion
146A:		
Elliott	Wetness	Frost heave, wetness

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
146B:		
Elliott	Restricted permeability, water erosion, wetness	Frost heave, water erosion, wetness
148B:		
Proctor	Water erosion	Frost heave, low pH, water erosion
149A:		
Brenton	Wetness	Frost heave, wetness
152A:		
Drummer	Ponding, poor tilth	Frost heave, ponding
154A:		
Flanagan	Wetness	Frost heave, low pH, wetness
171A:		
Catlin	None	Frost heave, low pH
171B:		
Catlin	Water erosion	Frost heave, low pH, water erosion
193A:		
Mayville	Crusting	Frost heave, low pH
193B:		
Mayville	Crusting, water erosion	Frost heave, low pH, water erosion
193C2:		
Mayville	Crusting, water erosion	Frost heave, low pH, water erosion
198A:		
Elburn	Wetness	Frost heave, wetness
206A:		
Thorp	Ponding, restricted permeability	Frost heave, low pH, ponding
210A:		
Lena	Excess lime, ponding, subsidence, wind erosion	Frost heave, ponding, wind erosion

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
219A:		
Millbrook	Wetness	Frost heave, low pH, wetness
221B:		
Parr	Water erosion	Frost heave, water erosion
221B2:		
Parr	Crusting, water erosion	Frost heave, water erosion
221C2:		
Parr	Crusting, water erosion	Frost heave, water erosion
223B:		
Varna	Water erosion	Frost heave, water erosion
223C2:		
Varna	Crusting, water erosion	Frost heave, water erosion
232A:		
Ashkum	Ponding, poor tilth	Frost heave, ponding
233A:		
Birkbeck	Crusting	Frost heave, low pH
233B:		
Birkbeck	Crusting, water erosion	Frost heave, low pH, water erosion
233C2:		
Birkbeck	Crusting, water erosion	Frost heave, low pH, water erosion
236A:		
Sabina	Crusting, wetness	Frost heave, low pH, wetness
242A:		
Kendall	Crusting, wetness	Frost heave, low pH, wetness
290A:		
Warsaw	Excessive permeability	Frost heave, low pH
290B:		
Warsaw	Excessive permeability, water erosion	Frost heave, low pH, water erosion

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
297B:		
Ringwood	Water erosion	Frost heave, water erosion
298A:		
Beecher	Restricted permeability, wetness	Frost heave, low pH, wetness
298B:		
Beecher	Restricted permeability, water erosion, wetness	Frost heave, low pH, water erosion, wetness
318A:		
Lorenzo	Excessive permeability, low available water capacity	Frost heave, low available water capacity
318B:		
Lorenzo	Excessive permeability, low available water capacity, water erosion	Frost heave, low available water capacity, water erosion
318C2:		
Lorenzo	Crusting, excessive permeability, low available water capacity, water erosion	Frost heave, low available water capacity, water erosion
318D2:		
Lorenzo	Crusting, excessive permeability, low available water capacity, water erosion	Equipment limitation, frost heave, low available water capacity, water erosion
323C2:		
Casco	Crusting, excessive permeability, low available water capacity, water erosion	Frost heave, low available water capacity, water erosion
323D2:		
Casco	Crusting, excessive permeability, low available water capacity, water erosion	Equipment limitation, frost heave, low available water capacity, water erosion
325A:		
Dresden	Excessive permeability	Frost heave
325B:		
Dresden	Excessive permeability, water erosion	Frost heave, water erosion
325C2:		
Dresden	Crusting, excessive permeability, water erosion	Frost heave, water erosion
327A:		
Fox	Crusting, excessive permeability	Frost heave, low pH

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
327B:		
Fox	Crusting, excessive permeability, water erosion	Frost heave, low pH, water erosion
327C2:		
Fox	Crusting, excessive permeability, water erosion	Frost heave, low pH, water erosion
327D2:		
Fox	Crusting, excessive permeability, water erosion	Equipment limitation, frost heave, low pH, water erosion
329A:		
Will	Excessive permeability, ponding	Frost heave, ponding
330A:		
Peotone	Ponding, poor tilth	Frost heave, ponding
343A:		
Kane	Excessive permeability, wetness	Frost heave, wetness
344C2:		
Harvard	Crusting, water erosion	Frost heave, low pH, water erosion
348B:		
Wingate	Water erosion	Frost heave, low pH, water erosion
348C2:		
Wingate	Crusting, water erosion	Frost heave, low pH, water erosion
356A:		
Elpaso	Ponding, poor tilth	Frost heave, ponding
361B:		
Kidder	Crusting, water erosion	Frost heave, water erosion
361C2:		
Kidder	Crusting, water erosion	Frost heave, water erosion
361D2:		
Kidder	Crusting, water erosion	Equipment limitation, frost heave, water erosion
361E2:		
Kidder	Crusting, water erosion	Equipment limitation, frost heave, water erosion

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
369A:		
Waupecan	Excessive permeability	Frost heave
369B:		
Waupecan	Excessive permeability, water erosion	Frost heave, water erosion
442A:		
Mundelein	Wetness	Frost heave, wetness
488A:		
Hooppole	Excess lime, excessive permeability, ponding	Frost heave, ponding
512A:		
Danabrook	None	Frost heave, low pH
512B:		
Danabrook	Water erosion	Frost heave, low pH, water erosion
512C2:		
Danabrook	Water erosion	Frost heave, low pH, water erosion
523A:		
Dunham	Excessive permeability, ponding, poor tilth	Frost heave, ponding
526A:		
Grundelein	Excessive permeability, wetness	Frost heave, wetness
527B:		
Kidami	Crusting, water erosion	Frost heave, low pH, water erosion
527C2:		
Kidami	Crusting, water erosion	Frost heave, low pH, water erosion
527D2:		
Kidami	Crusting, water erosion	Equipment limitation, frost heave, low pH, water erosion
527D3:		
Kidami	Crusting, poor tilth, water erosion	Equipment limitation, frost heave, low fertility, low pH, water erosion

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
529A:		
Selmass	Excessive permeability, ponding	Frost heave, ponding
530B:		
Ozaukee	Crusting, restricted permeability, water erosion	Frost heave, water erosion
530C2:		
Ozaukee	Crusting, restricted permeability, water erosion	Frost heave, water erosion
530D2:		
Ozaukee	Crusting, restricted permeability, water erosion	Equipment limitation, frost heave, water erosion
530E:		
Ozaukee	Crusting, restricted permeability, water erosion	Equipment limitation, frost heave, water erosion
531B:		
Markham	Restricted permeability, water erosion	Frost heave, low pH, water erosion
531C2:		
Markham	Crusting, restricted permeability, water erosion	Frost heave, low pH, water erosion
541B:		
Graymont	Restricted permeability, water erosion	Frost heave, water erosion
570B:		
Martinsville	Crusting, water erosion	Frost heave, low pH, water erosion
570C2:		
Martinsville	Crusting, water erosion	Frost heave, low pH, water erosion
614A:		
Chenoa	Poor tilth, wetness	Frost heave, wetness
618E:		
Senachwine	Crusting, water erosion	Equipment limitation, frost heave, low pH, water erosion
618F:		
Senachwine	---	Equipment limitation, frost heave, low pH, water erosion

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
626A:		
Kish	Excess lime, ponding	Frost heave, ponding
656B:		
Octagon	Water erosion	Frost heave, water erosion
656C2:		
Octagon	Crusting, water erosion	Frost heave, water erosion
656D2:		
Octagon	Crusting, water erosion	Equipment limitation, frost heave, water erosion
662A:		
Barony	None	Frost heave, low pH
662B:		
Barony	Water erosion	Frost heave, low pH, water erosion
663A:		
Clare	None	Frost heave, low pH
663B:		
Clare	Water erosion	Frost heave, low pH, water erosion
667A:		
Kaneville	None	Frost heave
667B:		
Kaneville	Water erosion	Frost heave, water erosion
668A:		
Somonauk	Crusting	Frost heave, low pH
668B:		
Somonauk	Crusting, water erosion	Frost heave, low pH, water erosion
679A:		
Blackberry	None	Frost heave, low pH
679B:		
Blackberry	Water erosion	Frost heave, low pH, water erosion
680A:		
Campton	Crusting	Frost heave, low pH

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
680B:		
Campton	Crusting, water erosion	Frost heave, low pH, water erosion
696B:		
Zurich	Crusting, water erosion	Frost heave, low pH, water erosion
697A:		
Wauconda	Wetness	Frost heave, wetness
739B:		
Milton	Crusting, depth to bedrock, water erosion	Depth to bedrock, frost heave, low pH, water erosion
739D:		
Milton	Crusting, depth to bedrock, low available water capacity, water erosion	Depth to bedrock, equipment limitation, frost heave, low available water capacity, low pH, water erosion
791A:		
Rush	Crusting, excessive permeability	Frost heave, low pH
791B:		
Rush	Crusting, excessive permeability, water erosion	Frost heave, low pH, water erosion
791C2:		
Rush	Crusting, excessive permeability, water erosion	Frost heave, low pH, water erosion
792A:		
Bowes	Excessive permeability	Frost heave, low pH
792B:		
Bowes	Excessive permeability, water erosion	Frost heave, low pH, water erosion
792C2:		
Bowes	Crusting, excessive permeability, water erosion	Frost heave, low pH, water erosion
802B:		
Orthents, loamy	Crusting, water erosion	Frost heave, water erosion

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
802D:		
Orthents, loamy	Crusting, water erosion	Equipment limitation, frost heave, water erosion
805B:		
Orthents, clayey	Crusting, low available water capacity, poor tilth, restricted permeability, water erosion	Frost heave, low available water capacity, water erosion
830:		
Landfills.		
864:		
Pits, quarry.		
865:		
Pits, gravel.		
903A:		
Muskego	Ponding, subsidence, wind erosion	Frost heave, ponding, wind erosion
Houghton	Ponding, subsidence, wind erosion	Frost heave, low pH, ponding, wind erosion
969E2:		
Casco	---	Equipment limitation, frost heave, low available water capacity, water erosion
Rodman	---	Equipment limitation, low available water capacity, surface rock fragments, water erosion
969F:		
Casco-Rodman.		
1103A:		
Houghton.		
1107A:		
Sawmill.		
1210A:		
Lena.		
1903A:		
Muskego and Houghton.		
3076A:		
Otter	Flooding, ponding	Flooding, frost heave, ponding

Table 5.--Main Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
3082A:		
Millington	Excess lime, flooding, ponding	Flooding, frost heave, ponding
8076A:		
Otter	Flooding, ponding	Flooding, frost heave, ponding
8082A:		
Millington	Excess lime, flooding, ponding	Flooding, frost heave, ponding

Table 6.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They 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	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
23A------------------ Blount	2w	106	35	48	64	4.3	7.2
59A------------------ Lisbon	1	155	51	63	92	5.9	9.8
59B------------------ Lisbon	2e	154	50	62	91	5.8	9.7
60C2----------------- La Rose	3e	116	39	49	70	4.5	7.5
60D2----------------- La Rose	4e	111	37	47	67	4.3	7.2
62A------------------ Herbert	2w	140	44	56	81	5.4	9.0
67A------------------ Harpster	2w	136	44	52	74	5.0	8.3
69A------------------ Milford	2w	131	48	56	81	5.2	8.7
103A----------------- Houghton	3w	130	35	---	---	---	7.3
104A----------------- Virgil	1	148	45	60	84	5.6	9.3
125A----------------- Selma	2w	136	44	53	76	5.0	8.3
134C2---------------- Camden	3e	118	37	52	68	4.7	7.8
146A----------------- Elliott	2w	128	45	55	79	5.1	8.5
146B----------------- Elliott	2e	127	45	54	78	5.1	8.5
148B----------------- Proctor	2e	143	44	58	87	5.4	9.1
149A----------------- Brenton	1	160	47	62	91	---	---
152A----------------- Drummer	2w	154	51	61	83	5.5	9.2
154A----------------- Flanagan	1	162	52	67	92	6.1	10.2
171A----------------- Catlin	1	150	46	61	87	5.8	9.7

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
171B----------------- Catlin	2e	149	46	60	86	5.7	9.6
193A----------------- Mayville	1	130	43	56	80	5.2	8.7
193B----------------- Mayville	2e	129	43	55	79	5.1	8.6
193C2---------------- Mayville	3e	122	40	53	75	4.9	8.2
198A----------------- Elburn	1	161	50	63	94	6.1	10.2
206A----------------- Thorp	2w	126	42	51	69	4.6	7.7
210A----------------- Lena	3w	125	41	---	---	---	6.7
219A----------------- Millbrook	1	144	43	59	81	5.4	9.0
221B----------------- Parr	2e	128	44	56	77	5.2	8.7
221B2---------------- Parr	2e	124	42	55	75	5.1	8.5
221C2---------------- Parr	3e	121	41	54	73	5.0	8.3
223B----------------- Varna	2e	122	41	52	74	4.8	7.9
223C2---------------- Varna	3e	117	39	50	71	4.6	7.6
232A----------------- Ashkum	2w	130	47	54	79	5.0	8.3
233A----------------- Birkbeck	1	123	41	55	70	5.0	8.3
233B----------------- Birkbeck	2e	122	41	54	69	5.0	8.2
233C2---------------- Birkbeck	3e	116	39	52	66	4.7	7.8
236A----------------- Sabina	2w	133	42	56	75	5.2	8.7
242A----------------- Kendall	2w	135	41	55	75	5.2	8.7
290A----------------- Warsaw	2s	115	40	53	74	4.6	7.7

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
290B----------------- Warsaw	2e	114	40	52	73	4.6	7.6
297B----------------- Ringwood	2e	127	44	58	79	5.1	8.6
298A----------------- Beecher	2w	116	39	51	72	4.5	7.5
298B----------------- Beecher	2e	115	39	50	71	4.4	7.4
318A----------------- Lorenzo	3s	92	30	44	61	3.6	6.0
318B----------------- Lorenzo	3s	91	30	44	60	3.6	5.9
318C2---------------- Lorenzo	3e	86	28	41	57	3.3	5.6
318D2---------------- Lorenzo	3e	83	27	40	55	3.2	5.4
323C2---------------- Casco	3e	88	31	38	73	---	---
323D2---------------- Casco	4e	80	27	37	65	---	---
325A----------------- Dresden	2s	110	36	49	69	4.5	7.5
325B----------------- Dresden	2e	109	36	49	68	4.5	7.4
325C2---------------- Dresden	2e	104	34	47	66	4.3	7.1
327A----------------- Fox	2s	106	33	46	64	4.3	7.2
327B----------------- Fox	2e	105	33	46	63	4.3	7.1
327C2---------------- Fox	2e	100	33	40	65	---	---
327D2---------------- Fox	3e	95	31	38	60	4.0	6.7
329A----------------- Will	2w	105	38	45	66	4.7	7.8
330A----------------- Peotone	2w	123	42	43	58	4.2	7.0
343A----------------- Kane	2s	122	43	55	76	4.8	8.0

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
344C2---------------- Harvard	3e	124	39	51	73	4.9	8.1
348B----------------- Wingate	2e	132	42	55	78	5.0	8.4
348C2---------------- Wingate	3e	125	39	53	74	4.8	8.0
356A----------------- Elpaso	2w	146	49	58	82	5.5	9.2
361B----------------- Kidder	2e	100	35	45	66	4.1	6.8
361C2---------------- Kidder	2e	96	33	43	64	3.9	6.5
361D2---------------- Kidder	3e	94	33	42	62	3.8	6.4
361E2---------------- Kidder	4e	83	29	37	55	3.5	5.9
369A----------------- Waupecan	1	149	50	62	81	5.3	8.8
369B----------------- Waupecan	2e	148	49	61	80	---	---
442A----------------- Mundelein	1	141	44	57	87	5.5	9.2
488A----------------- Hooppole	2w	132	44	53	77	5.3	8.8
512A----------------- Danabrook	1	141	46	60	85	5.6	9.3
512B----------------- Danabrook	2e	140	46	59	84	5.5	9.2
512C2---------------- Danabrook	3e	133	43	56	80	5.3	8.7
523A----------------- Dunham	2w	144	46	59	81	5.3	8.9
526A----------------- Grundelein	1	150	46	60	89	5.7	9.5
527B----------------- Kidami	2e	120	40	50	67	4.8	7.9
527C2---------------- Kidami	2e	106	36	46	65	---	---
527D2---------------- Kidami	3e	103	35	45	63	---	---

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
527D3---------------- Kidami	4e	104	34	44	58	4.1	6.9
529A----------------- Selmass	2w	130	42	50	72	4.8	8.0
530B----------------- Ozaukee	2e	105	32	47	75	4.3	7.1
530C2---------------- Ozaukee	2e	101	30	45	72	4.1	6.8
530D2---------------- Ozaukee	3e	99	30	44	71	4.0	6.7
530E----------------- Ozaukee	4e	94	28	42	68	3.8	6.4
531B----------------- Markham	2e	111	37	49	68	4.4	7.2
531C2---------------- Markham	3e	101	33	44	62	4.0	6.6
541B----------------- Graymont	2e	135	41	56	79	5.3	8.9
570B----------------- Martinsville	2e	120	42	50	65	---	---
570C2---------------- Martinsville	2e	115	35	48	63	4.6	7.6
614A----------------- Chenoa	2w	132	44	56	81	5.3	8.8
618E----------------- Senachwine	4e	99	34	43	61	3.9	6.6
618F----------------- Senachwine	6e	---	---	---	---	3.3	5.6
626A----------------- Kish	2w	132	44	53	77	5.3	---
656B----------------- Octagon	2e	124	41	52	74	5.0	8.2
656C2---------------- Octagon	2e	119	39	50	71	4.8	7.9
656D2---------------- Octagon	3e	116	38	49	70	4.6	7.7
662A----------------- Barony	1	133	42	55	79	5.3	8.8
662B----------------- Barony	2e	132	42	54	78	5.2	8.7

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
663A----------------- Clare	1	145	45	60	88	5.6	9.3
663B----------------- Clare	2e	143	44	58	87	5.4	9.1
667A----------------- Kaneville	1	139	44	56	82	5.5	9.2
667B----------------- Kaneville	2e	138	44	55	81	5.4	9.1
668A----------------- Somonauk	1	126	40	56	72	5.1	8.5
668B----------------- Somonauk	2e	125	40	55	71	5.0	8.4
679A----------------- Blackberry	1	152	45	60	90	5.8	9.7
679B----------------- Blackberry	2e	150	45	59	89	5.7	9.6
680A----------------- Campton	1	127	40	56	73	5.1	8.5
680B----------------- Campton	2e	137	43	54	80	5.3	---
696B----------------- Zurich	2e	116	37	49	68	4.7	7.7
697A----------------- Wauconda	1	129	41	54	80	5.2	8.7
739B----------------- Milton	2e	81	28	40	55	3.5	5.8
739D----------------- Milton	3e	79	27	38	54	3.4	5.6
791A----------------- Rush	1	132	42	57	77	5.1	9.0
791B----------------- Rush	2e	131	42	56	76	5.0	8.9
791C2---------------- Rush	2e	125	40	54	73	4.8	8.6
792A----------------- Bowes	1	141	46	60	79	5.3	9.3
792B----------------- Bowes	2e	140	46	59	78	5.2	9.2
792C2---------------- Bowes	2e	134	44	57	75	5.0	8.9

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
802B----------------- Orthents, loamy	2e	85	27	30	50	3.7	6.2
802D----------------- Orthents, loamy	3e	80	25	28	48	3.4	5.7
805B----------------- Orthents, clayey	3e	77	24	26	46	3.3	5.6
830. Landfills							
864. Pits, quarry							
865. Pits, gravel							
903A-----------------		127	41	---	---	---	7.2
Muskego-------------	4w						
Houghton------------	3w						
969E2----------------		---	---	---	---	2.5	4.0
Rodman--------------	6s						
Casco---------------	6e						
969F-----------------		---	---	---	---	---	3.8
Casco---------------	7e						
Rodman--------------	7s						
1103A---------------- Houghton	5w	---	---	---	---	---	---
1107A---------------- Sawmill	5w	---	---	---	---	---	---
1210A---------------- Lena	5w	---	---	---	---	---	---
1903A----------------		---	---	---	---	---	---
Muskego-------------	6w						
Houghton------------	5w						
3076A---------------- Otter	3w	129	41	44	62	4.2	7.0
3082A---------------- Millington	2w	120	37	47	61	4.1	6.9
8076A---------------- Otter	2w	143	46	49	69	4.7	7.8
8082A---------------- Millington	2w	133	41	52	68	4.6	7.7

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

Table 7.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map symbol	Soil name
23A	Blount silt loam, 0 to 2 percent slopes (where drained)
59A	Lisbon silt loam, 0 to 2 percent slopes
59B	Lisbon silt loam, 2 to 4 percent slopes
60C2	La rose loam, 5 to 10 percent slopes, eroded
62A	Herbert silt loam, 0 to 2 percent slopes (where drained)
67A	Harpster silty clay loam, 0 to 2 percent slopes (where drained)
69A	Milford silty clay loam, 0 to 2 percent slopes (where drained)
104A	Virgil silt loam, 0 to 2 percent slopes (where drained)
125A	Selma loam, 0 to 2 percent slopes (where drained)
146A	Elliott silt loam, 0 to 2 percent slopes
146B	Elliott silt loam, 2 to 4 percent slopes
148B	Proctor silt loam, 2 to 5 percent slopes
149A	Brenton silt loam, 0 to 2 percent slopes
152A	Drummer silty clay loam, 0 to 2 percent slopes (where drained)
154A	Flanagan silt loam, 0 to 2 percent slopes
171A	Catlin silt loam, 0 to 2 percent slopes
171B	Catlin silt loam, 2 to 5 percent slopes
193A	Mayville silt loam, 0 to 2 percent slopes
193B	Mayville silt loam, 2 to 5 percent slopes
198A	Elburn silt loam, 0 to 2 percent slopes
206A	Thorp silt loam, 0 to 2 percent slopes (where drained)
219A	Millbrook silt loam, 0 to 2 percent slopes (where drained)
221B	Parr silt loam, 2 to 5 percent slopes
221B2	Parr silt loam, 2 to 5 percent slopes, eroded
221C2	Parr silt loam, 5 to 10 percent slopes, eroded
223B	Varna silt loam, 2 to 4 percent slopes
223C2	Varna silt loam, 4 to 6 percent slopes, eroded
232A	Ashkum silty clay loam, 0 to 2 percent slopes (where drained)
233A	Birkbeck silt loam, 0 to 2 percent slopes
233B	Birkbeck silt loam, 2 to 5 percent slopes
236A	Sabina silt loam, 0 to 2 percent slopes (where drained)
242A	Kendall silt loam, 0 to 2 percent slopes (where drained)
290A	Warsaw loam, 0 to 2 percent slopes
290B	Warsaw loam, 2 to 4 percent slopes
297B	Ringwood silt loam, 2 to 4 percent slopes
298A	Beecher silt loam, 0 to 2 percent slopes (where drained)
298B	Beecher silt loam, 2 to 4 percent slopes
325A	Dresden silt loam, 0 to 2 percent slopes
325B	Dresden silt loam, 2 to 4 percent slopes
325C2	Dresden silt loam, 4 to 6 percent slopes, eroded
327A	Fox silt loam, 0 to 2 percent slopes
327B	Fox silt loam, 2 to 4 percent slopes
327C2	Fox silt loam, 4 to 6 percent slopes, eroded
329A	Will loam, 0 to 2 percent slopes (where drained)
330A	Peotone silty clay loam, 0 to 2 percent slopes (where drained)
343A	Kane silt loam, 0 to 2 percent slopes
348B	Wingate silt loam, 2 to 5 percent slopes
356A	Elpaso silty clay loam, 0 to 2 percent slopes (where drained)
361B	Kidder loam, 2 to 4 percent slopes
361C2	Kidder loam, 4 to 6 percent slopes, eroded
369A	Waupecan silt loam, 0 to 2 percent slopes
369B	Waupecan silt loam, 2 to 4 percent slopes
442A	Mundelein silt loam, 0 to 2 percent slopes
488A	Hooppole loam, 0 to 2 percent slopes (where drained)
512A	Danabrook silt loam, 0 to 2 percent slopes
512B	Danabrook silt loam, 2 to 5 percent slopes
523A	Dunham silty clay loam, 0 to 2 percent slopes (where drained)
526A	Grundelein silt loam, 0 to 2 percent slopes
527B	Kidami silt loam, 2 to 4 percent slopes
527C2	Kidami loam, 4 to 6 percent slopes, eroded

Table 7.--Prime Farmland--Continued

Map symbol	Soil name
529A	Selmass loam, 0 to 2 percent slopes (where drained)
530B	Ozaukee silt loam, 2 to 4 percent slopes
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded
531B	Markham silt loam, 2 to 4 percent slopes
531C2	Markham silt loam, 4 to 6 percent slopes, eroded
541B	Graymont silt loam, 2 to 5 percent slopes
570B	Martinsville silt loam, 2 to 4 percent slopes
570C2	Martinsville silt loam, 4 to 6 percent slopes, eroded
614A	Chenoa silty clay loam, 0 to 2 percent slopes
626A	Kish loam, 0 to 2 percent slopes (where drained)
656B	Octagon silt loam, 2 to 4 percent slopes
656C2	Octagon silt loam, 4 to 6 percent slopes, eroded
662A	Barony silt loam, 0 to 2 percent slopes
662B	Barony silt loam, 2 to 5 percent slopes
663A	Clare silt loam, 0 to 2 percent slopes
663B	Clare silt loam, 2 to 5 percent slopes
667A	Kaneville silt loam, 0 to 2 percent slopes
667B	Kaneville silt loam, 2 to 5 percent slopes
668A	Somonauk silt loam, 0 to 2 percent slopes
668B	Somonauk silt loam, 2 to 5 percent slopes
679A	Blackberry silt loam, 0 to 2 percent slopes
679B	Blackberry silt loam, 2 to 5 percent slopes
680A	Campton silt loam, 0 to 2 percent slopes
680B	Campton silt loam, 2 to 5 percent slopes
696B	Zurich silt loam, 2 to 4 percent slopes
697A	Wauconda silt loam, 0 to 2 percent slopes (where drained)
739B	Milton silt loam, 2 to 6 percent slopes
791A	Rush silt loam, 0 to 2 percent slopes
791B	Rush silt loam, 2 to 4 percent slopes
792A	Bowes silt loam, 0 to 2 percent slopes
792B	Bowes silt loam, 2 to 4 percent slopes
792C2	Bowes silt loam, 4 to 6 percent slopes, eroded
3076A	Otter silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3082A	Millington silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
8076A	Otter silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)

Table 8.--Forestland Productivity

(Only the soils suitable for commercial production of trees are listed.)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
23A:				
Blount	Northern red oak	57	43	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Sugar maple	54	29	
	White ash	57	43	
	White oak	57	43	
62A:				
Herbert	White oak	80	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Black walnut	---	---	
	Northern red oak	---	---	
	Shagbark hickory	---	---	
103A:				
Houghton	Silver maple	82	29	Common persimmon, eastern cottonwood, green ash, pin oak, swamp white oak, sweetgum
	Arborvitae	37	57	
	Green ash	---	---	
	Quaking aspen	60	57	
	Red maple	56	29	
	White ash	56	43	
104A:				
Virgil	Silver maple	70	29	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	American elm	---	---	
	Shagbark hickory	---	---	
134C2:				
Camden	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	85	72	
193A:				
Mayville	Northern red oak	78	57	Black walnut, cherrybark oak, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	78	57	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
193B:				
Mayville	Northern red oak	78	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	78	57	
193C2:				
Mayville	Northern red oak	78	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	78	57	
219A:				
Millbrook	Northern red oak	80	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Black walnut	---	---	
	Shagbark hickory	---	---	
	White oak	80	57	
233B:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Green ash	---	---	
	Northern red oak	---	---	
233C2:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Green ash	---	---	
	Northern red oak	---	---	
236A:				
Sabina	White oak	80	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Black walnut	---	---	
	Northern red oak	80	57	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
242A:				
Kendall	White oak	80	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Black walnut	---	---	
	Northern red oak	80	57	
	Tuliptree	90	86	
298A:				
Beecher	Northern red oak	65	4	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Black cherry	---	---	
	Bur oak	---	---	
	Northern pin oak	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
298B:				
Beecher	Northern red oak	65	4	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Black cherry	---	---	
	Bur oak	---	---	
	Northern pin oak	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
323C2:				
Casco	Northern red oak	55	43	Black oak, common hackberry, eastern white pine, green ash
	Black oak	---	---	
	Shagbark hickory	---	---	
323D2:				
Casco	Northern red oak	55	43	Black oak, common hackberry, eastern white pine, green ash
	Black oak	---	---	
	Shagbark hickory	---	---	
325A:				
Dresden	Northern red oak	70	57	Black oak, common hackberry, eastern white pine, green ash
	American basswood	---	---	
	Black cherry	---	---	
	Black oak	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
325B:				
Dresden	Northern red oak	70	57	Black oak, common hackberry, eastern white pine, green ash
	American basswood	---	---	
	Black cherry	---	---	
	Black oak	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
325C2:				
Dresden	Northern red oak	70	57	Black oak, common hackberry, eastern white pine, green ash
	American basswood	---	---	
	Black cherry	---	---	
	Black oak	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
327A:				
Fox	Northern red oak	65	57	Black oak, common hackberry, eastern white pine, green ash
	Black cherry	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
327B:				
Fox	Northern red oak	65	57	Black oak, common hackberry, eastern white pine, green ash
	Black cherry	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
327C2:				
Fox	Northern red oak	65	57	Black oak, common hackberry, eastern white pine, green ash
	Black cherry	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
327D2:				
Fox	Northern red oak	65	57	Black oak, common hackberry, eastern white pine, green ash
	Black cherry	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
344C2:				
Harvard	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	85	72	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
348B:				
Wingate	Northern red oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	80	57	
348C2:				
Wingate	Northern red oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	80	57	
361B:				
Kidder	Northern red oak	63	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	---	---	
361C2:				
Kidder	Northern red oak	63	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	---	---	
361D2:				
Kidder	Northern red oak	63	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	---	---	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
361E2:				
Kidder	Northern red oak	63	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	---	---	
527B:				
Kidami	Northern red oak	69	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American beech	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
527C2:				
Kidami	Northern red oak	69	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American beech	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
527D2:				
Kidami	Northern red oak	69	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American beech	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
527D3:				
Kidami	Northern red oak	69	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American beech	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
530B:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	American basswood	---	---	
	Sugar maple	---	---	
	White ash	---	---	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
530C2:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	American basswood	---	---	
	Sugar maple	---	---	
	White ash	---	---	
530D2:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	American basswood	---	---	
	Sugar maple	---	---	
	White ash	---	---	
530E:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	American basswood	---	---	
	Sugar maple	---	---	
	White ash	---	---	
531B:				
Markham	Northern red oak	65	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Black cherry	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
531C2:				
Markham	Northern red oak	65	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Black cherry	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
570B:				
Martinsville	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	Northern red oak	80	57	
570C2:				
Martinsville	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	Northern red oak	80	57	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
618E:				
Senachwine	Northern red oak	69	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American beech	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
618F:				
Senachwine	Northern red oak	69	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American beech	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
656B:				
Octagon	Northern red oak	69	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American beech	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
656C2:				
Octagon	Northern red oak	69	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American beech	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
656D2:				
Octagon	Northern red oak	69	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American beech	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
662A:				
Barony	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	85	72	
662B:				
Barony	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	85	72	
667A:				
Kaneville	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	85	72	
667B:				
Kaneville	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	85	72	
668A:				
Somonauk	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	85	72	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
			cu ft/ac	
668B:				
Somonauk	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	85	72	
680A:				
Campton	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	85	72	
680B:				
Campton	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	85	72	
696B:				
Zurich	Sugar maple	66	43	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	American basswood	---	---	
	Northern red oak	---	---	
	White ash	---	---	
	White oak	---	---	
697A:				
Wauconda	Northern red oak	80	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Black walnut	---	---	
	Shagbark hickory	---	---	
	White oak	80	57	
739B:				
Milton	Northern red oak	80	57	Black oak, common hackberry, eastern white pine, green ash
	Black cherry	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
739D:				
Milton	Northern red oak	80	57	Black oak, common hackberry, eastern white pine, green ash
	Black cherry	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
791A:				
Rush	Northern red oak	90	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	90	72	
791B:				
Rush	Northern red oak	90	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	90	72	
791C2:				
Rush	Northern red oak	90	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	90	72	
792A:				
Bowes	Northern red oak	90	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	90	72	
792B:				
Bowes	Northern red oak	90	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	90	72	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
792C2:				
Bowes	Northern red oak	90	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	90	72	
903A:				
Muskego	Silver maple	82	29	Common persimmon, eastern cottonwood, green ash, pin oak, swamp white oak, sweetgum
	Willow	---	---	
Houghton	Silver maple	82	29	Common persimmon, eastern cottonwood, green ash, pin oak, swamp white oak, sweetgum
	Arborvitae	37	57	
	Green ash	---	---	
	Quaking aspen	60	57	
	Red maple	56	29	
	White ash	56	43	
969E2:				
Casco	Northern red oak	55	43	Black oak, common hackberry, eastern white pine, green ash
	Black oak	---	---	
	Shagbark hickory	---	---	
Rodman	Northern red oak	45	29	Bur oak, chinkapin oak, eastern redcedar, green ash, thornless honeylocust
	Shagbark hickory	---	---	
	White oak	---	---	
969F:				
Casco	Northern red oak	55	43	Black oak, common hackberry, eastern white pine, green ash
	Black oak	---	---	
	Shagbark hickory	---	---	
Rodman	Northern red oak	45	29	Bur oak, chinkapin oak, eastern redcedar, green ash, thornless honeylocust
	Shagbark hickory	---	---	
	White oak	---	---	
1103A:				
Houghton	Silver maple	82	29	Common persimmon, eastern cottonwood, green ash, pin oak, swamp white oak, sweetgum
	Arborvitae	37	57	
	Green ash	---	---	
	Quaking aspen	60	57	
	Red maple	56	29	
	White ash	56	43	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
1903A:				
Muskego	Silver maple	82	29	Common persimmon, eastern cottonwood, green ash, pin oak, swamp white oak, sweetgum
	Willow	---	---	
Houghton	Silver maple	82	29	Common persimmon, eastern cottonwood, green ash, pin oak, swamp white oak, sweetgum
	Arborvitae	37	57	
	Green ash	---	---	
	Quaking aspen	60	57	
	Red maple	56	29	
	White ash	56	43	
3076A:				
Otter	Silver maple	94	43	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum
	White ash	---	---	
3082A:				
Millington	Silver maple	94	43	Bur oak, common hackberry, eastern cottonwood, eastern redcedar, green ash
	Cottonwood	---	---	
8076A:				
Otter	Silver maple	94	43	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum
	White ash	---	---	
8082A:				
Millington	Silver maple	94	43	Bur oak, common hackberry, eastern cottonwood, eastern redcedar, green ash
	Cottonwood	---	---	

Table 9.--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
23A:					
Blount	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
59A:					
Lisbon	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
59B:					
Lisbon	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 9.--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
60C2:					
La Rose	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
60D2:					
La Rose	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
62A:					
Herbert	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
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, green ash	---

Table 9.--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
69A: Milford	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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
103A: Houghton	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Green ash, pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood
104A: Virgil	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
125A: Selma	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Eastern redcedar, hackberry, northern white-cedar, shadbush, tamarack, witchhazel	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree	Eastern cottonwood, imperial Carolina poplar, pin oak

Table 9.--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
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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
146A:					
Elliott	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
146B:					
Elliott	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar

Table 9.--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
148B:					
Proctor	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
149A:					
Brenton	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
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, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 9.--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
154A: Flanagan	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
171A: Catlin	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
171B: Catlin	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
193A: Mayville	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
193B:					
Mayville	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
193C2:					
Mayville	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 9.--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
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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
210A: Lena	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Green ash, pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood
219A: Millbrook	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 9.--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
221B:					
Parr	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
221B2:					
Parr	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
221C2:					
Parr	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
223B:					
Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar

Table 9.--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
223C2:					
Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
232A:					
Ashkum	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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
233A:					
Birkbeck	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
233B:					
Birkbeck	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
233C2:					
Birkbeck	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
236A:					
Sabina	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
242A:					
Kendall	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 9.--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
290A:					
Warsaw	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, green ash	Carolina poplar	---
290B:					
Warsaw	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, green ash	Carolina poplar	---
297B:					
Ringwood	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
298A:					
Beecher	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar

Table 9.--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
298B: Beecher	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
318A: Lorenzo	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, green ash	Carolina poplar	---
318B: Lorenzo	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, green ash	Carolina poplar	---
318C2: Lorenzo	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, green ash	Carolina poplar	---

Table 9.--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
318D2:					
Lorenzo	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, green ash	Carolina poplar	---
323C2:					
Casco	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, green ash	Carolina poplar	---
323D2:					
Casco	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, green ash	Carolina poplar	---
325A:					
Dresden	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, green ash	Carolina poplar	---

Table 9.--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
325B:					
Dresden	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, green ash	Carolina poplar	---
325C2:					
Dresden	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, green ash	Carolina poplar	---
327A:					
Fox	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, green ash	Carolina poplar	---
327B:					
Fox	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, green ash	Carolina poplar	---

Table 9.--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
327C2:					
Fox	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, green ash	Carolina poplar	---
327D2:					
Fox	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, green ash	Carolina poplar	---
329A:					
Will	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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 9.--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
330A: Peotone	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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
343A: Kane	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
344C2: Harvard	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
348B:					
Wingate	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
348C2:					
Wingate	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
356A:					
Elpaso	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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
361B:					
Kidder	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
361C2:					
Kidder	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
361D2:					
Kidder	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
361E2:					
Kidder	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
369A:					
Waupecan	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
369B:					
Waupecan	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
442A:					
Mundelein	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
488A:					
Hooppole	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, green ash	---
512A:					
Danabrook	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
512B:					
Danabrook	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
512C2:					
Danabrook	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
523A:					
Dunham	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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 9.--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
526A:					
Grundelein	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
527B:					
Kidami	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
527C2:					
Kidami	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
527D2:					
Kidami	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
527D3:					
Kidami	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
529A:					
Selmass	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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
530B:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar

Table 9.--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
530C2:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
530D2:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
530E:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar

Table 9.--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
531B:					
Markham	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
531C2:					
Markham	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
541B:					
Graymont	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
570B: Martinsville	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
570C2: Martinsville	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
614A: Chenoa	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
618E: Senachwine	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
618F:					
Senachwine	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
626A:					
Kish	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, green ash	---
656B:					
Octagon	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
656C2:					
Octagon	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
656D2: Octagon	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
662A: Barony	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
662B: Barony	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
663A: Clare	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
663B:					
Clare	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
667A:					
Kaneville	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
667B:					
Kaneville	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
668A:					
Somonauk	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
668B: Somonauk	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
679A: Blackberry	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
679B: Blackberry	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
680A: Campton	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
680B:					
Campton	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
696B:					
Zurich	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
697A:					
Wauconda	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, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
739B:					
Milton	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, green ash	Carolina poplar	---

Table 9.--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
739D:					
Milton	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, green ash	Carolina poplar	---
791A:					
Rush	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
791B:					
Rush	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
791C2:					
Rush	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
792A: Bowes	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
792B: Bowes	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
792C2: Bowes	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
802B: Orthents, loamy	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 9.--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
802D:					
Orthents, loamy	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, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
805B:					
Orthents, clayey	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
830:					
Landfills.					
864:					
Pits, quarry.					
865:					
Pits, gravel.					
903A:					
Muskego	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Green ash, pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood

Table 9.--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
903A:					
Houghton	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Green ash, pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood
969E2:					
Casco	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, green ash	Carolina poplar	---
Rodman	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Black locust, bur oak, chinkapin oak, green ash, thornless honeylocust	---	---
969F:					
Casco	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, green ash	Carolina poplar	---

Table 9.--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
969F:					
Rodman	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Black locust, bur oak, chinkapin oak, green ash, thornless honeylocust	---	---
1103A:					
Houghton	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Green ash, pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood
1107A:					
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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
1210A:					
Lena	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Green ash, pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood

Table 9.--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
1903A:					
Muskego	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Green ash, pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood
Houghton	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Green ash, pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood
3076A:					
Otter	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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3082A:					
Millington	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, green ash	---

Table 9.--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
8076A:					
Otter	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, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8082A:					
Millington	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, green ash	---

Table 10.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. 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	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
23A:					
Blount	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
59A:					
Lisbon	Severe: wetness	Moderate: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
59B:					
Lisbon	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
60C2:					
La Rose	Moderate: percs slowly	Moderate: percs slowly	Severe: slope	Slight	Slight
60D2:					
La Rose	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Slight	Moderate: slope
62A:					
Herbert	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
67A:					
Harpster	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
69A:					
Milford	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
103A:					
Houghton	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
104A:					
Virgil	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
125A:					
Selma	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
134C2:					
Camden	Slight	Slight	Severe: slope	Slight	Slight
146A:					
Elliott	Severe: wetness	Moderate: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
146B:					
Elliott	Severe: wetness	Moderate: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness

Table 10.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
148B:					
Proctor	Slight	Slight	Moderate: slope	Slight	Slight
149A:					
Brenton	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
152A:					
Drummer	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
154A:					
Flanagan	Severe: wetness	Moderate: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
171A:					
Catlin	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight
171B:					
Catlin	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
193A:					
Mayville	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Slight	Slight
193B:					
Mayville	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
193C2:					
Mayville	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Severe: slope	Slight	Slight
198A:					
Elburn	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
206A:					
Thorp	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
210A:					
Lena	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
219A:					
Millbrook	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
221B:					
Parr	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight

Table 10.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
221B2:					
Parr	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
221C2:					
Parr	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Severe: slope	Slight	Slight
223B:					
Varna	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
223C2:					
Varna	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
232A:					
Ashkum	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
233A:					
Birkbeck	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight
233B:					
Birkbeck	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
233C2:					
Birkbeck	Moderate: wetness	Moderate: wetness	Severe: slope	Slight	Slight
236A:					
Sabina	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
242A:					
Kendall	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
290A:					
Warsaw	Slight	Slight	Moderate: small stones	Slight	Slight
290B:					
Warsaw	Slight	Slight	Moderate: slope small stones	Slight	Slight
297B:					
Ringwood	Slight	Slight	Moderate: slope	Slight	Slight
298A:					
Beecher	Severe: wetness	Moderate: percs slowly wetness	Severe: wetness	Moderate: wetness	Severe: wetness

Table 10.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
298B:					
Beecher	Severe: wetness	Moderate: percs slowly wetness	Severe: wetness	Moderate: wetness	Severe: wetness
318A:					
Lorenzo	Slight	Slight	Slight	Slight	Moderate: droughty
318B:					
Lorenzo	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
318C2:					
Lorenzo	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
318D2:					
Lorenzo	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope droughty
323C2:					
Casco	Slight	Slight	Moderate: slope small stones	Slight	Moderate: large stones droughty
323D2:					
Casco	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: large stones slope droughty
325A:					
Dresden	Slight	Slight	Slight	Slight	Slight
325B:					
Dresden	Slight	Slight	Moderate: slope	Slight	Slight
325C2:					
Dresden	Slight	Slight	Severe: slope	Slight	Slight
327A:					
Fox	Slight	Slight	Slight	Slight	Slight
327B:					
Fox	Slight	Slight	Moderate: slope	Slight	Slight
327C2:					
Fox	Slight	Slight	Moderate: slope	Slight	Slight
327D2:					
Fox	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
329A:					
Will	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding

Table 10.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
330A:					
Peotone	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
343A:					
Kane	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
344C2:					
Harvard	Slight	Slight	Severe: slope	Slight	Slight
348B:					
Wingate	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
348C2:					
Wingate	Moderate: wetness	Moderate: wetness	Severe: slope	Slight	Slight
356A:					
Elpaso	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
361B:					
Kidder	Slight	Slight	Moderate: slope small stones	Slight	Slight
361C2:					
Kidder	Slight	Slight	Moderate: slope small stones	Slight	Slight
361D2:					
Kidder	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
361E2:					
Kidder	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
369A:					
Waupecan	Slight	Slight	Slight	Slight	Slight
369B:					
Waupecan	Slight	Slight	Moderate: slope	Slight	Slight
442A:					
Mundelein	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
488A:					
Hooppole	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
512A:					
Danabrook	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight

Table 10.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
512B:					
Danabrook	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
512C2:					
Danabrook	Moderate: wetness	Moderate: wetness	Severe: slope	Slight	Slight
523A:					
Dunham	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
526A:					
Grundelein	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
527B:					
Kidami	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
527C2:					
Kidami	Moderate: wetness	Moderate: wetness	Moderate: percs slowly slope wetness	Slight	Slight
527D2:					
Kidami	Moderate: percs slowly slope wetness	Moderate: percs slowly slope wetness	Severe: slope	Slight	Moderate: slope
527D3:					
Kidami	Moderate: percs slowly slope wetness	Moderate: percs slowly slope wetness	Severe: slope	Slight	Moderate: slope
529A:					
Selmass	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
530B:					
Ozaukee	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
530C2:					
Ozaukee	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
530D2:					
Ozaukee	Moderate: percs slowly slope wetness	Moderate: percs slowly slope wetness	Severe: slope	Slight	Moderate: slope
530E:					
Ozaukee	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope

Table 10.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
531B:					
Markham	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
531C2:					
Markham	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
541B:					
Graymont	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
570B:					
Martinsville	Slight	Slight	Moderate: slope	Slight	Slight
570C2:					
Martinsville	Slight	Slight	Moderate: slope	Slight	Slight
614A:					
Chenoa	Severe: wetness	Moderate: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
618E:					
Senachwine	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
618F:					
Senachwine	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
626A:					
Kish	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
656B:					
Octagon	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
656C2:					
Octagon	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Slight	Slight
656D2:					
Octagon	Moderate: slope percs slowly wetness	Moderate: slope percs slowly wetness	Severe: slope	Slight	Moderate: slope
662A:					
Barony	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight

Table 10.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
662B:					
Barony	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
663A:					
Clare	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight
663B:					
Clare	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
667A:					
Kaneville	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight
667B:					
Kaneville	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
668A:					
Somonauk	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight
668B:					
Somonauk	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
679A:					
Blackberry	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight
679B:					
Blackberry	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
680A:					
Campton	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight
680B:					
Campton	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
696B:					
Zurich	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Slight	Slight
697A:					
Wauconda	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Severe: wetness
739B:					
Milton	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope depth to rock	Slight	Moderate: depth to rock

Table 10.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
739D:					
Milton	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Slight	Moderate: depth to rock slope
791A:					
Rush	Slight	Slight	Slight	Slight	Slight
791B:					
Rush	Slight	Slight	Moderate: slope	Slight	Slight
791C2:					
Rush	Slight	Slight	Moderate: slope	Slight	Slight
792A:					
Bowes	Slight	Slight	Slight	Slight	Slight
792B:					
Bowes	Slight	Slight	Moderate: slope	Slight	Slight
792C2:					
Bowes	Slight	Slight	Moderate: slope	Slight	Slight
802B:					
Orthents, loamy	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly slope	Slight	Slight
802D:					
Orthents, loamy	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Slight	Moderate: slope
805B:					
Orthents, clayey	Severe: percs slowly too clayey	Severe: percs slowly too clayey	Severe: too clayey	Severe: too clayey	Severe: too clayey
830:					
Landfills.					
864:					
Pits, quarry.					
865:					
Pits, gravel.					
903A:					
Muskego	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Houghton	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
969E2:					
Casco	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope

Table 10.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
969E2:					
Rodman	Severe: slope	Severe: slope	Severe: slope small stones	Moderate: slope	Severe: slope droughty
969F:					
Casco	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
Rodman	Severe: slope	Severe: slope	Severe: slope small stones	Moderate: slope	Severe: slope droughty
1103A:					
Houghton	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
1107A:					
Sawmill	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding
1210A:					
Lena	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
1903A:					
Muskego	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Houghton	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
3076A:					
Otter	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding
3082A:					
Millington	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding
8076A:					
Otter	Severe: flooding ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
8082A:					
Millington	Severe: flooding ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding

Table 11.--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 herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
23A:										
Blount	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
59A:										
Lisbon	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
59B:										
Lisbon	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
60C2:										
La Rose	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
60D2:										
La Rose	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
62A:										
Herbert	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
67A:										
Harpster	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
69A:										
Milford	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
103A:										
Houghton	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
104A:										
Virgil	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
125A:										
Selma	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
134C2:										
Camden	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
146A:										
Elliott	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
146B:										
Elliott	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
148B:										
Proctor	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
149A:										
Brenton	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
152A:										
Drummer	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
154A:										
Flanagan	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair

Table 11.--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
171A:										
Catlin	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
171B:										
Catlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
193A:										
Mayville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
193B:										
Mayville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
193C2:										
Mayville	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
198A:										
Elburn	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
206A:										
Thorp	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
210A:										
Lena	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
219A:										
Millbrook	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
221B:										
Parr	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
221B2:										
Parr	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
221C2:										
Parr	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
223B:										
Varna	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
223C2:										
Varna	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
232A:										
Ashkum	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
233A:										
Birkbeck	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
233B:										
Birkbeck	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
233C2:										
Birkbeck	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 11.--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
236A: Sabina	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
242A: Kendall	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
290A: Warsaw	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
290B: Warsaw	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
297B: Ringwood	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
298A: Beecher	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
298B: Beecher	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
318A: Lorenzo	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Good	Very poor
318B: Lorenzo	Fair	Fair	Good	Fair	Fair	Poor	Very poor	Fair	Fair	Very poor
318C2: Lorenzo	Fair	Fair	Good	Fair	Fair	Poor	Very poor	Fair	Fair	Very poor
318D2: Lorenzo	Fair	Fair	Good	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
323C2: Casco	Fair	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
323D2: Casco	Fair	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
325A: Dresden	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
325B: Dresden	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
325C2: Dresden	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
327A: Fox	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 11.--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
327B:										
Fox	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
327C2:										
Fox	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
327D2:										
Fox	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
329A:										
Will	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
330A:										
Peotone	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
343A:										
Kane	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
344C2:										
Harvard	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
348B:										
Wingate	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
348C2:										
Wingate	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
356A:										
Elpaso	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
361B:										
Kidder	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
361C2:										
Kidder	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
361D2:										
Kidder	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
361E2:										
Kidder	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
369A:										
Waupecan	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
369B:										
Waupecan	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
442A:										
Mundelein	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair

Table 11.--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
488A:										
Hooppole	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
512A:										
Danabrook	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
512B:										
Danabrook	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
512C2:										
Danabrook	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
523A:										
Dunham	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
526A:										
Grundelein	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
527B:										
Kidami	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
527C2:										
Kidami	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
527D2:										
Kidami	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
527D3:										
Kidami	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
529A:										
Selmass	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
530B:										
Ozaukee	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
530C2:										
Ozaukee	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
530D2:										
Ozaukee	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
530E:										
Ozaukee	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
531B:										
Markham	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
531C2:										
Markham	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
541B:										
Graymont	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 11.--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
570B:										
Martinsville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
570C2:										
Martinsville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
614A:										
Chenoa	Good	Good	Good	Good	Good	Fair	Fair	Good	Poor	Fair
618E:										
Senachwine	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
618F:										
Senachwine	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
626A:										
Kish	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
656B:										
Octagon	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
656C2:										
Octagon	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
656D2:										
Octagon	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
662A:										
Barony	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
662B:										
Barony	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
663A:										
Clare	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
663B:										
Clare	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
667A:										
Kaneville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
667B:										
Kaneville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
668A:										
Somonauk	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
668B:										
Somonauk	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
679A:										
Blackberry	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor

Table 11.--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
679B:										
Blackberry	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
680A:										
Campton	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
680B:										
Campton	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
696B:										
Zurich	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
697A:										
Wauconda	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
739B:										
Milton	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
739D:										
Milton	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
791A:										
Rush	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
791B:										
Rush	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
791C2:										
Rush	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
792A:										
Bowes	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
792B:										
Bowes	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
792C2:										
Bowes	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
802B:										
Orthents, loamy	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
802D:										
Orthents, loamy	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
805B:										
Orthents, clayey	Fair	Fair	Fair	Fair	Fair	Poor	Very poor	Fair	Fair	Very poor
830:										
Landfills.										

Table 11.--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
864:										
Pits, quarry.										
865:										
Pits, gravel.										
903A:										
Muskego	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Houghton	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
969E2:										
Casco	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
Rodman	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
969F:										
Casco	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rodman	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
1103A:										
Houghton	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
1107A:										
Sawmill	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
1210A:										
Lena	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
1903A:										
Muskego	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Houghton	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
3076A:										
Otter	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
3082A:										
Millington	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
8076A:										
Otter	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
8082A:										
Millington	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good

Table 12.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. 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	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
23A:						
Blount	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
59A:						
Lisbon	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength	Moderate: wetness
59B:						
Lisbon	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength	Moderate: wetness
60C2:						
La Rose	Moderate: dense layer	Slight	Slight	Moderate: slope	Moderate: frost action low strength	Slight
60D2:						
La Rose	Moderate: slope dense layer	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action low strength slope	Moderate: slope
62A:						
Herbert	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
67A:						
Harpster	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
69A:						
Milford	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
103A:						
Houghton	Severe: excess humus ponding	Severe: subsides ponding low strength	Severe: subsides ponding low strength	Severe: subsides ponding low strength	Severe: frost action subsides ponding	Severe: excess humus ponding
104A:						
Virgil	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
125A:						
Selma	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
134C2:						
Camden	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: frost action low strength	Slight
146A:						
Elliott	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength	Moderate: wetness
146B:						
Elliott	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength	Moderate: wetness
148B:						
Proctor	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: frost action low strength	Slight
149A:						
Brenton	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength	Moderate: wetness
152A:						
Drummer	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
154A:						
Flanagan	Severe: wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell	Moderate: wetness
171A:						
Catlin	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
171B:						
Catlin	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
193A:						
Mayville	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
193B:						
Mayville	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
193C2:						
Mayville	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: frost action low strength	Slight

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
198A:						
Elburn	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength	Moderate: wetness
206A:						
Thorp	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
210A:						
Lena	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
219A:						
Millbrook	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
221B:						
Parr	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: low strength	Slight
221B2:						
Parr	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: low strength	Slight
221C2:						
Parr	Severe: wetness	Moderate: wetness shrink-swell	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: low strength	Slight
223B:						
Varna	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: low strength	Slight
223C2:						
Varna	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: low strength	Slight
232A:						
Ashkum	Severe: ponding	Severe: shrink-swell ponding	Severe: ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: ponding
233A:						
Birkbeck	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
233B:						
Birkbeck	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
233C2:						
Birkbeck	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: frost action low strength	Slight
236A:						
Sabina	Severe: wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
242A:						
Kendall	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
290A:						
Warsaw	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: frost action shrink-swell	Slight
290B:						
Warsaw	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: frost action shrink-swell	Slight
297B:						
Ringwood	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: frost action low strength shrink-swell	Slight
298A:						
Beecher	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
298B:						
Beecher	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
318A:						
Lorenzo	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Moderate: droughty
318B:						
Lorenzo	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Moderate: droughty
318C2:						
Lorenzo	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
318D2:						
Lorenzo	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope droughty
323C2:						
Casco	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: large stones droughty
323D2:						
Casco	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: large stones slope droughty
325A:						
Dresden	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Severe: low strength	Slight
325B:						
Dresden	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Severe: low strength	Slight
325C2:						
Dresden	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell slope	Severe: low strength	Slight
327A:						
Fox	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: frost action shrink-swell low strength	Slight
327B:						
Fox	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: frost action shrink-swell low strength	Slight
327C2:						
Fox	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell slope	Moderate: frost action shrink-swell low strength	Slight
327D2:						
Fox	Severe: cutbanks cave	Moderate: shrink-swell slope	Moderate: slope	Severe: slope	Moderate: frost action shrink-swell slope	Moderate: slope
329A:						
Will	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: low strength ponding	Severe: ponding
330A:						
Peotone	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: ponding

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
343A:						
Kane	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action	Moderate: wetness
344C2:						
Harvard	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: frost action low strength	Slight
348B:						
Wingate	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
348C2:						
Wingate	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: frost action low strength	Slight
356A:						
Elpaso	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
361B:						
Kidder	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: frost action shrink-swell low strength	Slight
361C2:						
Kidder	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell slope	Moderate: frost action shrink-swell low strength	Slight
361D2:						
Kidder	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action shrink-swell slope	Moderate: slope
361E2:						
Kidder	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
369A:						
Waupecan	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: frost action low strength	Slight
369B:						
Waupecan	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: frost action low strength	Slight
442A:						
Mundelein	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength	Moderate: wetness

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
488A:						
Hooppole	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
512A:						
Danabrook	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
512B:						
Danabrook	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
512C2:						
Danabrook	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: frost action low strength	Slight
523A:						
Dunham	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
526A:						
Grundelein	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength	Moderate: wetness
527B:						
Kidami	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: low strength	Slight
527C2:						
Kidami	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: low strength	Slight
527D2:						
Kidami	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: wetness	Severe: slope	Severe: low strength	Moderate: slope
527D3:						
Kidami	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: wetness	Severe: slope	Moderate: frost action slope	Moderate: slope
529A:						
Selmass	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
530B:						
Ozaukee	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: low strength	Slight
530C2:						
Ozaukee	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: low strength	Slight
530D2:						
Ozaukee	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: wetness	Severe: slope	Severe: low strength	Moderate: slope
530E:						
Ozaukee	Severe: slope wetness	Severe: slope	Severe: slope wetness	Severe: slope	Severe: low strength slope	Severe: slope
531B:						
Markham	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: low strength	Slight
531C2:						
Markham	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: low strength	Slight
541B:						
Graymont	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
570B:						
Martinsville	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: frost action shrink-swell low strength	Slight
570C2:						
Martinsville	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Moderate: frost action shrink-swell low strength	Slight
614A:						
Chenoa	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength	Moderate: wetness
618E:						
Senachwine	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope
618F:						
Senachwine	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
626A:						
Kish	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
656B:						
Octagon	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: low strength	Slight
656C2:						
Octagon	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: low strength	Slight
656D2:						
Octagon	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: wetness	Severe: slope	Severe: low strength	Moderate: slope
662A:						
Barony	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
662B:						
Barony	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
663A:						
Clare	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
663B:						
Clare	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
667A:						
Kaneville	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
667B:						
Kaneville	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
668A:						
Somonauk	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
668B:						
Somonauk	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
679A:						
Blackberry	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
679B:						
Blackberry	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
680A:						
Campton	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
680B:						
Campton	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
696B:						
Zurich	Severe: wetness cutbanks cave	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Slight
697A:						
Wauconda	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
739B:						
Milton	Severe: depth to rock	Moderate: shrink-swell depth to rock	Severe: depth to rock	Moderate: depth to rock	Severe: low strength	Moderate: depth to rock
739D:						
Milton	Severe: depth to rock	Moderate: shrink-swell slope depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Moderate: depth to rock slope
791A:						
Rush	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: frost action low strength	Slight
791B:						
Rush	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: frost action low strength	Slight
791C2:						
Rush	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: frost action low strength	Slight
792A:						
Bowes	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: frost action low strength	Slight

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
792B:						
Bowes	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: frost action low strength	Slight
792C2:						
Bowes	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: frost action low strength	Slight
802B:						
Orthents, loamy	Moderate: wetness	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell	Severe: low strength	Slight
802D:						
Orthents, loamy	Moderate: slope wetness	Moderate: shrink-swell slope	Moderate: shrink-swell slope wetness	Severe: slope	Severe: low strength	Moderate: slope
805B:						
Orthents, clayey	Severe: wetness	Severe: shrink-swell	Severe: shrink-swell wetness	Severe: shrink-swell	Severe: low strength	Severe: too clayey
830:						
Landfills.						
864:						
Pits, quarry.						
865:						
Pits, gravel.						
903A:						
Muskego	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Houghton	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
969E2:						
Casco	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rodman	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty
969F:						
Casco	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rodman	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty

Table 12.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1103A:						
Houghton	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
1107A:						
Sawmill	Severe: ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding low strength ponding	Severe: flooding ponding
1210A:						
Lena	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
1903A:						
Muskego	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Houghton	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
3076A:						
Otter	Severe: ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding low strength ponding	Severe: flooding ponding
3082A:						
Millington	Severe: ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding low strength ponding	Severe: flooding ponding
8076A:						
Otter	Severe: ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding low strength ponding	Severe: ponding
8082A:						
Millington	Severe: ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding low strength ponding	Severe: ponding

Table 13.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. 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	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
23A:					
Blount	Severe: percs slowly wetness	Slight	Severe: wetness	Severe: wetness	Poor: wetness
59A:					
Lisbon	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
59B:					
Lisbon	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
60C2:					
La Rose	Severe: percs slowly	Severe: slope	Slight	Slight	Good
60D2:					
La Rose	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
62A:					
Herbert	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
67A:					
Harpster	Severe: ponding	Severe: seepage ponding	Severe: seepage ponding	Severe: ponding	Poor: hard to pack ponding
69A:					
Milford	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
103A:					
Houghton	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
104A:					
Virgil	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: wetness	Poor: wetness
125A:					
Selma	Severe: ponding	Severe: seepage ponding	Severe: seepage ponding	Severe: ponding	Poor: ponding
134C2:					
Camden	Moderate: percs slowly	Severe: seepage slope	Severe: seepage	Slight	Fair: too clayey

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
146A:					
Elliott	Severe: percs slowly wetness	Slight	Severe: wetness	Severe: wetness	Poor: too clayey wetness
146B:					
Elliott	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Severe: wetness	Poor: wetness
148B:					
Proctor	Moderate: percs slowly	Severe: seepage	Severe: seepage	Slight	Fair: too clayey
149A:					
Brenton	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: wetness	Poor: wetness
152A:					
Drummer	Severe: ponding	Severe: seepage ponding	Severe: seepage ponding	Severe: ponding	Poor: ponding
154A:					
Flanagan	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: hard to pack wetness
171A:					
Catlin	Severe: percs slowly wetness	Severe: wetness	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
171B:					
Catlin	Severe: percs slowly wetness	Severe: wetness	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
193A:					
Mayville	Severe: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness	Fair: wetness
193B:					
Mayville	Severe: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness	Fair: wetness
193C2:					
Mayville	Severe: percs slowly wetness	Severe: slope wetness	Moderate: wetness	Moderate: wetness	Fair: wetness
198A:					
Elburn	Severe: wetness	Severe: wetness	Severe: seepage wetness	Severe: wetness	Poor: wetness
206A:					
Thorp	Severe: percs slowly ponding	Severe: seepage ponding	Severe: seepage ponding	Severe: ponding	Poor: ponding

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
210A:					
Lena	Severe: subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
219A:					
Millbrook	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: wetness	Poor: wetness
221B:					
Parr	Severe: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness	Fair: wetness
221B2:					
Parr	Severe: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness	Fair: wetness
221C2:					
Parr	Severe: percs slowly wetness	Severe: slope wetness	Moderate: wetness	Moderate: wetness	Fair: wetness
223B:					
Varna	Severe: percs slowly wetness	Moderate: slope	Moderate: too clayey wetness	Moderate: wetness	Poor: hard to pack too clayey
223C2:					
Varna	Severe: percs slowly wetness	Moderate: slope	Moderate: too clayey wetness	Moderate: wetness	Poor: hard to pack too clayey
232A:					
Ashkum	Severe: percs slowly ponding	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding
233A:					
Birkbeck	Severe: percs slowly wetness	Severe: wetness	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
233B:					
Birkbeck	Severe: percs slowly wetness	Severe: wetness	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
233C2:					
Birkbeck	Severe: percs slowly wetness	Severe: slope wetness	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
236A:					
Sabina	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: hard to pack wetness

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
242A:					
Kendall	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: wetness	Poor: wetness
290A:					
Warsaw	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy thin layer
290B:					
Warsaw	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
297B:					
Ringwood	Moderate: percs slowly	Severe: seepage	Severe: seepage	Severe: seepage	Fair: small stones
298A:					
Beecher	Severe: percs slowly wetness	Slight	Severe: wetness	Severe: wetness	Poor: too clayey wetness
298B:					
Beecher	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Severe: wetness	Poor: too clayey wetness
318A:					
Lorenzo	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
318B:					
Lorenzo	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
318C2:					
Lorenzo	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
318D2:					
Lorenzo	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
323C2:					
Casco	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
323D2:					
Casco	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
325A:					
Dresden	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy thin layer
325B:					
Dresden	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
325C2:					
Dresden	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
327A:					
Fox	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
327B:					
Fox	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
327C2:					
Fox	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
327D2:					
Fox	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
329A:					
Will	Severe: ponding poor filter	Severe: seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage small stones too sandy
330A:					
Peotone	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
343A:					
Kane	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy thin layer
344C2:					
Harvard	Moderate: percs slowly	Severe: seepage slope	Severe: seepage	Slight	Fair: too clayey
348B:					
Wingate	Severe: percs slowly wetness	Severe: wetness	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
348C2:					
Wingate	Severe: percs slowly wetness	Severe: slope wetness	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
356A:					
Elpaso	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding
361B:					
Kidder	Moderate: percs slowly	Severe: seepage	Severe: seepage	Severe: seepage	Fair: small stones
361C2:					
Kidder	Moderate: percs slowly	Severe: seepage	Severe: seepage	Severe: seepage	Fair: small stones
361D2:					
Kidder	Moderate: percs slowly slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: small stones slope
361E2:					
Kidder	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
369A:					
Waupecan	Severe: poor filter	Severe: seepage	Severe: seepage	Severe: seepage	Fair: thin layer too clayey
369B:					
Waupecan	Severe: poor filter	Severe: seepage	Severe: seepage	Severe: seepage	Fair: thin layer too clayey
442A:					
Mundelein	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: wetness	Poor: wetness
488A:					
Hooppole	Severe: ponding poor filter	Severe: seepage ponding	Severe: seepage ponding	Severe: ponding	Poor: ponding

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
512A:					
Danabrook	Severe: percs slowly wetness	Severe: wetness	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
512B:					
Danabrook	Severe: percs slowly wetness	Severe: wetness	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
512C2:					
Danabrook	Severe: percs slowly wetness	Severe: slope wetness	Moderate: wetness	Moderate: wetness	Fair: too clayey wetness
523A:					
Dunham	Severe: ponding poor filter	Severe: seepage ponding	Severe: seepage ponding	Severe: ponding	Poor: ponding
526A:					
Grundelein	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Poor: wetness
527B:					
Kidami	Severe: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness	Fair: too clayey wetness
527C2:					
Kidami	Severe: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness	Fair: wetness
527D2:					
Kidami	Severe: percs slowly wetness	Severe: slope wetness	Moderate: slope wetness	Moderate: slope wetness	Fair: slope wetness
527D3:					
Kidami	Severe: percs slowly wetness	Severe: slope wetness	Moderate: slope wetness	Moderate: slope wetness	Fair: slope wetness
529A:					
Selmass	Severe: ponding poor filter	Severe: seepage ponding	Severe: seepage ponding	Severe: ponding	Poor: ponding
530B:					
Ozaukee	Severe: percs slowly wetness	Moderate: slope	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
530C2:					
Ozaukee	Severe: percs slowly wetness	Moderate: slope	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
530D2:					
Ozaukee	Severe: percs slowly wetness	Severe: slope	Moderate: slope too clayey wetness	Moderate: slope wetness	Fair: slope too clayey wetness
530E:					
Ozaukee	Severe: percs slowly slope wetness	Severe: slope	Severe: slope	Severe: slope	Poor: slope
531B:					
Markham	Severe: percs slowly wetness	Moderate: slope	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
531C2:					
Markham	Severe: percs slowly wetness	Moderate: slope	Moderate: too clayey wetness	Moderate: wetness	Fair: too clayey wetness
541B:					
Graymont	Severe: percs slowly wetness	Moderate: seepage slope	Moderate: wetness too clayey	Moderate: wetness	Poor: hard to pack
570B:					
Martinsville	Moderate: percs slowly	Severe: seepage	Severe: seepage	Slight	Fair: too clayey
570C2:					
Martinsville	Moderate: percs slowly	Severe: seepage	Severe: seepage	Slight	Fair: too clayey
614A:					
Chenoa	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: hard to pack wetness
618E:					
Senachwine	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
618F:					
Senachwine	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
626A:					
Kish	Severe: ponding	Severe: ponding	Severe: seepage ponding	Severe: ponding	Poor: ponding
656B:					
Octagon	Severe: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness	Fair: wetness
656C2:					
Octagon	Severe: percs slowly wetness	Severe: wetness	Moderate: wetness	Moderate: wetness	Fair: wetness

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
656D2:					
Octagon	Severe: percs slowly, wetness	Severe: slope, wetness	Moderate: slope, wetness	Moderate: slope, wetness	Fair: slope, wetness
662A:					
Barony	Severe: wetness	Severe: seepage, wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
662B:					
Barony	Severe: wetness	Severe: seepage, wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
663A:					
Clare	Severe: wetness	Severe: wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
663B:					
Clare	Severe: wetness	Severe: seepage, wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
667A:					
Kaneville	Severe: wetness	Severe: seepage, wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
667B:					
Kaneville	Severe: wetness	Severe: seepage, wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
668A:					
Somonauk	Severe: wetness	Severe: wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
668B:					
Somonauk	Severe: wetness	Severe: seepage, wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
679A:					
Blackberry	Severe: wetness	Severe: wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
679B:					
Blackberry	Severe: wetness	Severe: wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness
680A:					
Campton	Severe: wetness	Severe: wetness	Severe: seepage, wetness	Severe: wetness	Fair: too clayey, wetness

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
680B:					
Campton	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: wetness	Fair: too clayey wetness
696B:					
Zurich	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: wetness
697A:					
Wauconda	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Poor: wetness
739B:					
Milton	Severe: depth to rock percs slowly	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock too clayey
739D:					
Milton	Severe: depth to rock percs slowly	Severe: depth to rock slope	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock too clayey
791A:					
Rush	Severe: poor filter	Severe: seepage	Severe: seepage	Slight	Fair: thin layer too clayey
791B:					
Rush	Severe: poor filter	Severe: seepage	Severe: seepage	Slight	Fair: thin layer too clayey
791C2:					
Rush	Severe: poor filter	Severe: seepage	Severe: seepage	Slight	Fair: thin layer too clayey
792A:					
Bowes	Severe: poor filter	Severe: seepage	Severe: seepage	Slight	Fair: thin layer too clayey
792B:					
Bowes	Severe: poor filter	Severe: seepage	Severe: seepage	Slight	Fair: thin layer too clayey
792C2:					
Bowes	Severe: poor filter	Severe: seepage	Severe: seepage	Slight	Fair: thin layer too clayey
802B:					
Orthents, loamy	Severe: percs slowly wetness	Moderate: slope wetness	Moderate: too clayey wetness	Slight	Fair: too clayey

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
802D:					
Orthents, loamy	Severe: percs slowly, wetness	Severe: slope	Moderate: slope, too clayey, wetness	Moderate: slope	Fair: slope, too clayey
805B:					
Orthents, clayey	Severe: percs slowly, wetness	Moderate: slope	Severe: too clayey	Moderate: wetness	Poor: hard to pack, too clayey
830:					
Landfills.					
864:					
Pits, quarry.					
865:					
Pits, gravel.					
903A:					
Muskego	Severe: percs slowly, subsides, ponding	Severe: excess humus, seepage, ponding	Severe: excess humus, ponding	Severe: seepage, ponding	Poor: hard to pack, ponding
Houghton	Severe: percs slowly, subsides, ponding	Severe: excess humus, seepage, ponding	Severe: excess humus, seepage, ponding	Severe: seepage, ponding	Poor: excess humus, ponding
969E2:					
Casco	Severe: slope, poor filter	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, small stones, too sandy
Rodman	Severe: slope, poor filter	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, small stones, too sandy
969F:					
Casco	Severe: slope, poor filter	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, small stones, too sandy
Rodman	Severe: slope, poor filter	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, small stones, too sandy
1103A:					
Houghton	Severe: percs slowly, subsides, ponding	Severe: excess humus, seepage, ponding	Severe: excess humus, seepage, ponding	Severe: seepage, ponding	Poor: excess humus, ponding
1107A:					
Sawmill	Severe: flooding, ponding	Severe: flooding, ponding	Severe: flooding, ponding	Severe: flooding, ponding	Poor: ponding

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1210A:					
Lena	Severe: subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
1903A:					
Muskego	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus ponding	Severe: seepage ponding	Poor: hard to pack ponding
Houghton	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
3076A:					
Otter	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Poor: ponding
3082A:					
Millington	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Poor: ponding
8076A:					
Otter	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Poor: ponding
8082A:					
Millington	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Poor: ponding

Table 14.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. 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	Roadfill	Sand	Gravel	Topsoil
23A:				
Blount	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
59A:				
Lisbon	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey
59B:				
Lisbon	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
60C2:				
La Rose	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
60D2:				
La Rose	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
62A:				
Herbert	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
67A:				
Harpster	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
69A:				
Milford	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
103A:				
Houghton	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
104A:				
Virgil	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
125A:				
Selma	Poor: wetness	Probable	Improbable: too sandy	Poor: wetness
134C2:				
Camden	Moderate: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
146A:				
Elliott	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
146B:				
Elliott	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
148B:				
Proctor	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
149A:				
Brenton	Fair: shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
152A:				
Drummer	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
154A:				
Flanagan	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
171A:				
Catlin	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
171B:				
Catlin	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
193A:				
Mayville	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey
193B:				
Mayville	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey
193C2:				
Mayville	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey
198A:				
Elburn	Poor: low strength	Probable	Improbable: too sandy	Fair: too clayey
206A:				
Thorp	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
210A:				
Lena	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
219A:				
Millbrook	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
221B:				
Parr	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey
221B2:				
Parr	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey
221C2:				
Parr	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey
223B:				
Varna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
223C2:				
Varna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
232A:				
Ashkum	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
233A:				
Birkbeck	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
233B:				
Birkbeck	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
233C2:				
Birkbeck	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
236A:				
Sabina	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
242A:				
Kendall	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
290A:				
Warsaw	Good	Probable	Probable	Poor: area reclaim small stones
290B:				
Warsaw	Good	Probable	Probable	Poor: area reclaim small stones
297B:				
Ringwood	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
298A:				
Beecher	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
298B:				
Beecher	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
318A:				
Lorenzo	Good	Probable	Probable	Poor: area reclaim small stones
318B:				
Lorenzo	Good	Probable	Probable	Poor: area reclaim small stones
318C2:				
Lorenzo	Good	Probable	Probable	Poor: area reclaim small stones
318D2:				
Lorenzo	Good	Probable	Probable	Poor: area reclaim small stones
323C2:				
Casco	Good	Probable	Probable	Poor: area reclaim small stones too sandy
323D2:				
Casco	Good	Probable	Probable	Poor: area reclaim small stones too sandy
325A:				
Dresden	Good	Probable	Probable	Poor: area reclaim small stones

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
325B:				
Dresden	Good	Probable	Probable	Poor: area reclaim small stones
325C2:				
Dresden	Good	Probable	Probable	Poor: area reclaim small stones
327A:				
Fox	Good	Probable	Probable	Poor: area reclaim small stones
327B:				
Fox	Good	Probable	Probable	Poor: area reclaim small stones
327C2:				
Fox	Good	Probable	Probable	Poor: area reclaim small stones
327D2:				
Fox	Good	Probable	Probable	Poor: area reclaim small stones
329A:				
Will	Poor: wetness	Probable	Probable	Poor: area reclaim small stones wetness
330A:				
Peotone	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
343A:				
Kane	Fair: wetness	Probable	Probable	Poor: area reclaim small stones
344C2:				
Harvard	Moderate: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
348B:				
Wingate	Fair: low strength wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
348C2:				
Wingate	Fair: low strength wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
356A:				
Elpaso	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
361B:				
Kidder	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
361C2:				
Kidder	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
361D2:				
Kidder	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
361E2:				
Kidder	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
369A:				
Waupecan	Poor: low strength	Probable	Probable	Poor: area reclaim
369B:				
Waupecan	Poor: low strength	Probable	Probable	Poor: area reclaim
442A:				
Mundelein	Fair: low strength wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
488A:				
Hooppole	Poor: low strength wetness	Probable	Improbable: too sandy	Poor: wetness
512A:				
Danabrook	Fair: low strength wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
512B:				
Danabrook	Fair: low strength wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
512C2:				
Danabrook	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
523A:				
Dunham	Poor: wetness	Probable	Probable	Poor: area reclaim wetness
526A:				
Grundelein	Fair: wetness	Probable	Probable	Poor: area reclaim

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
527B:				
Kidami	Fair: low strength wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
527C2:				
Kidami	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
527D2:				
Kidami	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
527D3:				
Kidami	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones area reclaim
529A:				
Selmass	Poor: wetness	Probable	Improbable: too sandy	Poor: wetness
530B:				
Ozaukee	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
530C2:				
Ozaukee	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
530D2:				
Ozaukee	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
530E:				
Ozaukee	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey
531B:				
Markham	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
531C2:				
Markham	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
541B:				
Graymont	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
570B:				
Martinsville	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
570C2:				
Martinsville	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
614A:				
Chenoa	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
618E:				
Senachwine	Fair: slope shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: slope
618F:				
Senachwine	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
626A:				
Kish	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
656B:				
Octagon	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey
656C2:				
Octagon	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones too clayey
656D2:				
Octagon	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: slope area reclaim too clayey
662A:				
Barony	Fair: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
662B:				
Barony	Fair: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
663A:				
Clare	Fair: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
663B:				
Clare	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
667A:				
Kaneville	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
667B:				
Kaneville	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
668A:				
Somonauk	Fair: shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
668B:				
Somonauk	Fair: shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
679A:				
Blackberry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
679B:				
Blackberry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
680A:				
Campton	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
680B:				
Campton	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
696B:				
Zurich	Fair: low strength wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
697A:				
Wauconda	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
739B:				
Milton	Poor: depth to rock thin layer low strength	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock thin layer too clayey
739D:				
Milton	Poor: depth to rock thin layer low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock thin layer slope
791A:				
Rush	Poor: low strength	Probable	Probable	Poor: area reclaim small stones
791B:				
Rush	Poor: low strength	Probable	Probable	Poor: area reclaim small stones
791C2:				
Rush	Poor: low strength	Probable	Probable	Poor: area reclaim small stones

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
792A:				
Bowes	Poor: low strength	Probable	Probable	Poor: area reclaim
792B:				
Bowes	Poor: low strength	Probable	Probable	Poor: area reclaim small stones
792C2:				
Bowes	Poor: low strength	Probable	Probable	Poor: area reclaim small stones
802B:				
Orthents, loamy	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
802D:				
Orthents, loamy	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
805B:				
Orthents, clayey	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
830:				
Landfills.				
864:				
Pits, quarry.				
865:				
Pits, gravel.				
903A:				
Muskego	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Houghton	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
969E2:				
Casco	Fair: slope	Probable	Probable	Poor: area reclaim small stones too sandy
Rodman	Fair: slope	Probable	Probable	Poor: area reclaim small stones too sandy
969F:				
Casco	Fair: slope	Probable	Probable	Poor: area reclaim small stones too sandy

Table 14.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
969F:				
Rodman	Fair: slope	Probable	Probable	Poor: area reclaim, small stones, too sandy
1103A:				
Houghton	Poor: low strength, wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus, wetness
1107A:				
Sawmill	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
1210A:				
Lena	Poor: low strength, wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus, wetness
1903A:				
Muskego	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus, wetness
Houghton	Poor: low strength, wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus, wetness
3076A:				
Otter	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
3082A:				
Millington	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
8076A:				
Otter	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
8082A:				
Millington	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness

Table 15.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. 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	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
23A:							
Blount	Slight	Severe: wetness	Severe: no water	Frost action percs slowly	Percs slowly wetness	Erodes easily percs slowly wetness	Erodes easily rooting depth wetness
59A:							
Lisbon	Moderate: seepage	Moderate: piping wetness	Severe: no water	Frost action	Wetness	Erodes easily wetness	Erodes easily rooting depth wetness
59B:							
Lisbon	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
60C2:							
La Rose	Moderate: seepage slope	Moderate: piping	Severe: no water	Deep to water	Slope	Erodes easily	Erodes easily rooting depth
60D2:							
La Rose	Severe: slope	Moderate: piping	Severe: no water	Deep to water	Slope	Erodes easily slope	Erodes easily rooting depth slope
62A:							
Herbert	Moderate: seepage	Severe: wetness	Severe: no water	Frost action	Erodes easily wetness	Erodes easily wetness	Erodes easily rooting depth wetness
67A:							
Harpster	Severe: seepage	Severe: ponding	Moderate: slow refill	Frost action ponding	Ponding	Erodes easily ponding	Erodes easily wetness
69A:							
Milford	Slight	Severe: ponding	Severe: slow refill	Frost action ponding	Ponding	Erodes easily ponding	Erodes easily wetness
103A:							
Houghton	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
104A:							
Virgil	Severe: seepage	Severe: wetness	Severe: cutbanks cave	Frost action	Erodes easily wetness	Erodes easily wetness	Erodes easily wetness
125A:							
Selma	Severe: seepage	Severe: ponding	Severe: cutbanks cave	Frost action ponding	Ponding	Ponding	Wetness
134C2:							
Camden	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily slope	Erodes easily	Erodes easily
146A:							
Elliott	Slight	Moderate: hard to pack piping wetness	Severe: no water	Favorable	Percs slowly wetness	Erodes easily percs slowly wetness	Erodes easily rooting depth wetness
146B:							
Elliott	Moderate: slope	Moderate: piping wetness	Severe: no water	Percs slowly	Percs slowly wetness	Erodes easily percs slowly wetness	Erodes easily rooting depth wetness
148B:							
Proctor	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope	Erodes easily	Erodes easily
149A:							
Brenton	Severe: seepage	Severe: wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
152A:							
Drummer	Severe: seepage	Severe: ponding	Severe: cutbanks cave	Frost action ponding	Ponding	Erodes easily ponding	Erodes easily wetness
154A:							
Flanagan	Slight	Moderate: hard to pack wetness	Severe: no water	Favorable	Wetness	Erodes easily wetness	Erodes easily rooting depth wetness
171A:							
Catlin	Moderate: seepage	Moderate: piping wetness	Severe: no water	Frost action	Favorable	Erodes easily wetness	Erodes easily rooting depth

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
171B: Catlin	Moderate: seepage slope	Moderate: wetness	Severe: no water	Frost action slope	Slope	Erodes easily wetness	Erodes easily rooting depth
193A: Mayville	Moderate: seepage	Severe: piping	Severe: no water	Frost action	Erodes easily	Erodes easily wetness	Erodes easily rooting depth
193B: Mayville	Moderate: seepage slope	Severe: piping	Severe: no water	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily rooting depth
193C2: Mayville	Moderate: seepage slope	Severe: piping	Severe: no water	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily rooting depth
198A: Elburn	Moderate: seepage	Severe: wetness	Moderate: slow refill	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
206A: Thorp	Severe: seepage	Severe: ponding	Severe: slow refill cutbanks cave	Frost action percs slowly ponding	Percs slowly ponding	Erodes easily percs slowly ponding	Erodes easily percs slowly wetness
210A: Lena	Severe: seepage	Severe: excess humus ponding	Slight	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
219A: Millbrook	Severe: seepage	Severe: wetness	Severe: cutbanks cave	Frost action	Erodes easily wetness	Erodes easily wetness	Erodes easily wetness
221B: Parr	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Favorable	Favorable	Erodes easily wetness	Erodes easily rooting depth
221B2: Parr	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Favorable	Favorable	Erodes easily wetness	Erodes easily rooting depth

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
221C2:							
Parr	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Slope	Slope	Erodes easily wetness	Erodes easily rooting depth
223B:							
Varna	Moderate: slope	Moderate: hard to pack wetness	Severe: no water	Favorable	Percs slowly wetness	Erodes easily percs slowly wetness	Erodes easily rooting depth
223C2:							
Varna	Moderate: slope	Moderate: hard to pack wetness	Severe: no water	Percs slowly slope	Percs slowly slope wetness	Erodes easily percs slowly wetness	Erodes easily percs slowly rooting depth
232A:							
Ashkum	Slight	Severe: ponding	Severe: slow refill	Frost action ponding	Ponding	Erodes easily ponding	Erodes easily wetness
233A:							
Birkbeck	Moderate: seepage	Moderate: piping wetness	Severe: no water	Frost action	Erodes easily	Erodes easily wetness	Erodes easily rooting depth
233B:							
Birkbeck	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily rooting depth
233C2:							
Birkbeck	Moderate: seepage slope	Severe: piping wetness	Severe: no water	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily rooting depth
236A:							
Sabina	Slight	Severe: wetness	Severe: no water	Frost action	Erodes easily wetness	Erodes easily wetness	Erodes easily rooting depth wetness
242A:							
Kendall	Severe: seepage	Severe: wetness	Severe: cutbanks cave	Frost action	Erodes easily wetness	Erodes easily wetness	Erodes easily wetness
290A:							
Warsaw	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Favorable	Too sandy	Favorable

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
290B:							
Warsaw	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Favorable	Too sandy	Favorable
297B:							
Ringwood	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Favorable	Favorable	Rooting depth
298A:							
Beecher	Slight	Severe: wetness	Severe: no water	Frost action percs slowly	Percs slowly wetness	Erodes easily percs slowly wetness	Erodes easily rooting depth wetness
298B:							
Beecher	Moderate: slope	Severe: wetness	Severe: no water	Frost action percs slowly	Percs slowly wetness	Erodes easily percs slowly wetness	Erodes easily rooting depth wetness
318A:							
Lorenzo	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Droughty	Too sandy	Rooting depth droughty
318B:							
Lorenzo	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Droughty	Too sandy	Rooting depth droughty
318C2:							
Lorenzo	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Slope droughty	Too sandy	Rooting depth droughty
318D2:							
Lorenzo	Severe: seepage slope	Severe: seepage piping	Severe: no water	Deep to water	Slope droughty	Slope too sandy	Rooting depth droughty slope
323C2:							
Casco	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Slope droughty	Large stones too sandy	Large stones droughty

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
323D2:							
Casco	Severe: seepage slope	Severe: seepage piping	Severe: no water	Deep to water	Slope droughty	Large stones slope too sandy	Large stones droughty slope
325A:							
Dresden	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Favorable	Too sandy	Favorable
325B:							
Dresden	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Favorable	Too sandy	Favorable
325C2:							
Dresden	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Slope	Too sandy	Favorable
327A:							
Fox	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Favorable	Too sandy	Favorable
327B:							
Fox	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Favorable	Too sandy	Favorable
327C2:							
Fox	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Slope	Too sandy	Favorable
327D2:							
Fox	Severe: seepage slope	Severe: seepage piping	Severe: no water	Deep to water	Slope	Slope too sandy	Slope
329A:							
Will	Severe: seepage	Severe: seepage ponding	Severe: cutbanks cave	Frost action ponding cutbanks cave	Ponding	Too sandy ponding	Rooting depth wetness

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
330A:							
Peotone	Slight	Severe: ponding	Severe: slow refill	Frost action ponding	Ponding	Erodes easily ponding	Erodes easily wetness
343A:							
Kane	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Frost action cutbanks cave	Wetness	Too sandy wetness	Rooting depth wetness
344C2:							
Harvard	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily slope	Erodes easily	Erodes easily
348B:							
Wingate	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily rooting depth
348C2:							
Wingate	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily rooting depth
356A:							
Elpaso	Moderate: seepage	Severe: ponding	Severe: slow refill	Frost action ponding	Ponding	Erodes easily ponding	Erodes easily wetness
361B:							
Kidder	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Favorable	Favorable	Favorable
361C2:							
Kidder	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope	Favorable	Favorable
361D2:							
Kidder	Severe: seepage slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope	Slope
361E2:							
Kidder	Severe: seepage slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope	Slope

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
369A:							
Waupecan	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Favorable	Erodes easily	Erodes easily rooting depth
369B:							
Waupecan	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Favorable	Erodes easily	Erodes easily rooting depth
442A:							
Mundelein	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
488A:							
Hooppole	Severe: seepage	Severe: ponding	Severe: cutbanks cave	Frost action ponding	Ponding	Ponding	Wetness
512A:							
Danabrook	Moderate: seepage	Moderate: piping wetness	Severe: no water	Frost action	Favorable	Erodes easily wetness	Erodes easily rooting depth
512B:							
Danabrook	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Frost action slope	Slope	Erodes easily wetness	Erodes easily rooting depth
512C2:							
Danabrook	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Frost action slope	Slope	Erodes easily wetness	Erodes easily rooting depth
523A:							
Dunham	Severe: seepage	Severe: ponding	Severe: cutbanks cave	Frost action ponding	Ponding	Erodes easily ponding	Erodes easily rooting depth wetness
526A:							
Grundelein	Severe: seepage	Severe: wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily rooting depth wetness
527B:							
Kidami	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Favorable	Favorable	Erodes easily wetness	Erodes easily rooting depth

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
527C2: Kidami	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Slope	Slope	Erodes easily wetness	Erodes easily rooting depth
527D2: Kidami	Severe: slope	Severe: piping	Severe: no water	Slope	Slope	Erodes easily slope wetness	Erodes easily rooting depth slope
527D3: Kidami	Severe: slope	Severe: piping	Severe: no water	Slope	Slope	Erodes easily slope wetness	Erodes easily rooting depth slope
529A: Selmass	Severe: seepage	Severe: ponding	Severe: cutbanks cave	Frost action ponding	Ponding	Ponding	Wetness
530B: Ozaukee	Moderate: slope	Moderate: hard to pack wetness	Severe: no water	Percs slowly	Percs slowly wetness	Erodes easily percs slowly wetness	Erodes easily percs slowly rooting depth
530C2: Ozaukee	Moderate: slope	Moderate: wetness	Severe: no water	Percs slowly slope	Percs slowly slope wetness	Erodes easily percs slowly wetness	Erodes easily percs slowly rooting depth
530D2: Ozaukee	Severe: slope	Moderate: wetness	Severe: no water	Percs slowly slope	Percs slowly slope wetness	Erodes easily slope wetness	Erodes easily rooting depth slope
530E: Ozaukee	Severe: slope	Moderate: hard to pack wetness	Severe: no water	Percs slowly slope	Percs slowly slope wetness	Erodes easily slope wetness	Erodes easily rooting depth slope
531B: Markham	Moderate: slope	Moderate: wetness	Severe: no water	Percs slowly	Percs slowly wetness	Erodes easily percs slowly wetness	Erodes easily percs slowly rooting depth

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
531C2:							
Markham	Moderate: slope	Moderate: wetness	Severe: no water	Percs slowly slope	Percs slowly slope wetness	Erodes easily percs slowly wetness	Erodes easily percs slowly rooting depth
541B:							
Graymont	Moderate: seepage slope	Moderate: hard to pack piping wetness	Severe: no water	Frost action percs slowly slope	Percs slowly slope wetness	Erodes easily percs slowly wetness	Erodes easily percs slowly rooting depth
570B:							
Martinsville	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Favorable	Erodes easily	Erodes easily
570C2:							
Martinsville	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Slope	Favorable	Favorable
614A:							
Chenoa	Moderate: seepage	Severe: wetness	Severe: no water	Percs slowly	Percs slowly wetness	Erodes easily percs slowly wetness	Erodes easily wetness rooting depth
618E:							
Senachwine	Severe: slope	Moderate: piping	Severe: no water	Deep to water	Slope	Erodes easily slope	Erodes easily rooting depth slope
618F:							
Senachwine	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope	Erodes easily slope	Erodes easily rooting depth slope
626A:							
Kish	Severe: seepage	Severe: ponding	Moderate: slow refill	Frost action ponding	Ponding	Ponding	Wetness
656B:							
Octagon	Moderate: seepage slope	Severe: piping	Severe: no water	Favorable	Favorable	Erodes easily wetness	Erodes easily rooting depth
656C2:							
Octagon	Moderate: seepage slope	Severe: piping	Severe: no water	Slope	Slope	Erodes easily wetness	Erodes easily rooting depth

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
656D2:							
Octagon	Severe: slope	Severe: piping	Severe: slow refill	Slope	Slope	Erodes easily slope wetness	Erodes easily rooting depth slope
662A:							
Barony	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Erodes easily	Erodes easily wetness	Erodes easily
662B:							
Barony	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily
663A:							
Clare	Moderate: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Favorable	Erodes easily wetness	Erodes easily
663B:							
Clare	Severe: seepage	Moderate: piping wetness	Severe: cutbanks cave	Frost action slope	Slope	Erodes easily wetness	Erodes easily
667A:							
Kaneville	Severe: seepage	Moderate: piping wetness	Severe: cutbanks cave	Frost action	Erodes easily	Erodes easily wetness	Erodes easily
667B:							
Kaneville	Severe: seepage	Moderate: piping wetness	Severe: cutbanks cave	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily
668A:							
Somonauk	Moderate: seepage	Moderate: piping wetness	Moderate: slow refill deep to water	Frost action	Erodes easily	Erodes easily wetness	Erodes easily
668B:							
Somonauk	Severe: seepage	Moderate: piping wetness	Moderate: slow refill deep to water	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily
679A:							
Blackberry	Moderate: seepage	Moderate: piping wetness	Moderate: slow refill deep to water	Frost action	Favorable	Erodes easily wetness	Erodes easily

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
679B: Blackberry	Moderate: seepage slope	Moderate: piping wetness	Moderate: slow refill deep to water	Frost action slope	Slope	Erodes easily wetness	Erodes easily
680A: Campton	Moderate: seepage	Moderate: piping wetness	Moderate: slow refill deep to water	Frost action	Erodes easily	Erodes easily wetness	Erodes easily
680B: Campton	Severe: seepage	Moderate: piping wetness	Moderate: slow refill deep to water	Frost action slope	Erodes easily slope	Erodes easily wetness	Erodes easily
696B: Zurich	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Erodes easily wetness	Erodes easily wetness	Erodes easily
697A: Wauconda	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Erodes easily wetness	Erodes easily wetness	Erodes easily wetness
739B: Milton	Moderate: seepage slope depth to rock	Severe: thin layer	Severe: no water	Deep to water	Depth to rock slope	Erodes easily depth to rock	Erodes easily depth to rock
739D: Milton	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Depth to rock slope	Erodes easily slope depth to rock	Erodes easily slope depth to rock
791A: Rush	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Erodes easily rooting depth
791B: Rush	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Erodes easily rooting depth
791C2: Rush	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Erodes easily slope	Erodes easily	Erodes easily rooting depth

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
792A:							
Bowes	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Erodes easily rooting depth
792B:							
Bowes	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Erodes easily rooting depth
792C2:							
Bowes	Severe: seepage	Moderate: piping	Severe: no water	Deep to water	Erodes easily slope	Erodes easily	Erodes easily rooting depth
802B:							
Orthents, loamy	Moderate: slope	Moderate: piping	Severe: no water	Deep to water	Erodes easily slope	Erodes easily	Erodes easily rooting depth
802D:							
Orthents, loamy	Severe: slope	Moderate: piping	Severe: no water	Deep to water	Erodes easily slope	Erodes easily slope	Erodes easily rooting depth slope
805B:							
Orthents, clayey	Moderate: slope	Severe: hard to pack	Severe: no water	Percs slowly slope	Slope slow intake wetness	Erodes easily percs slowly wetness	Erodes easily rooting depth droughty
830:							
Landfills.							
864:							
Pits, quarry.							
865:							
Pits, gravel.							
903A:							
Muskego	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Houghton	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Ponding subsides frost action	Soil blowing ponding	Soil blowing ponding	Wetness

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
969E2:							
Casco	Severe: seepage slope	Severe: seepage piping	Severe: no water	Deep to water	Slope droughty	Large stones slope too sandy	Large stones droughty slope
Rodman	Severe: seepage slope	Severe: seepage piping	Severe: no water	Deep to water	Slope droughty	Slope too sandy	Droughty slope
969F:							
Casco	Severe: seepage slope	Severe: seepage piping	Severe: no water	Deep to water	Slope droughty	Large stones slope too sandy	Large stones droughty slope
Rodman	Severe: seepage slope	Severe: seepage piping	Severe: no water	Deep to water	Slope droughty	Slope too sandy	Droughty slope
1103A:							
Houghton	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
1107A:							
Sawmill	Moderate: seepage	Severe: ponding	Moderate: slow refill	Flooding frost action	Flooding ponding	Ponding	Wetness
1210A:							
Lena	Severe: seepage	Severe: excess humus ponding	Slight	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
1903A:							
Muskego	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Houghton	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Ponding subsides frost action	Soil blowing ponding	Soil blowing ponding	Wetness
3076A:							
Otter	Moderate: seepage	Severe: ponding	Moderate: slow refill	Flooding frost action ponding	Flooding ponding	Erodes easily ponding	Erodes easily wetness

Table 15.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
3082A:							
Millington	Moderate: seepage	Severe: ponding	Moderate: slow refill	Flooding frost action ponding	Flooding ponding	Ponding	Wetness
8076A:							
Otter	Moderate: seepage	Severe: ponding	Moderate: slow refill	Flooding frost action ponding	Flooding ponding	Erodes easily ponding	Erodes easily wetness
8082A:							
Millington	Moderate: seepage	Severe: ponding	Moderate: slow refill	Flooding frost action ponding	Flooding ponding	Ponding	Wetness

Table 16.--Engineering Index Properties

(Absence of an entry indicates that the 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	
23A:												
Blount	0-7	Silt loam	CL	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	25-40	8-20
	7-13	Silt loam	CL	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	20-35	8-18
	13-26	Silty clay loam, silty clay, clay loam	CH, CL	A-6, A-7	0-1	0-5	95-100	85-98	70-97	65-95	35-60	15-35
	26-32	Silty clay loam, clay loam, silty clay	CH, CL, ML	A-6, A-7	0-1	0-5	95-100	80-95	65-93	60-90	35-55	10-30
	32-60	Silty clay loam, clay loam	CL	A-6, A-7	0-1	0-10	90-100	80-93	65-92	60-90	30-50	10-25
59A:												
Lisbon	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-40	5-20
	11-36	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	85-98	30-50	15-35
	36-39	Loam, clay loam	CL	A-4, A-6, A-7	0	0-2	95-100	85-100	75-90	60-80	20-45	8-25
	39-70	Loam, sandy loam	CL	A-4, A-6	0	0-3	90-100	80-98	65-85	45-75	20-40	8-20
59B:												
Lisbon	0-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-40	5-20
	15-33	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	85-98	30-50	15-35
	33-42	Loam, clay loam	CL	A-4, A-6, A-7	0	0-2	95-100	85-100	75-90	60-80	20-45	8-25
	42-60	Loam, sandy loam	CL	A-4, A-6	0	0-3	90-100	80-98	65-85	45-75	20-40	8-20
60C2:												
La Rose	0-7	Loam	CL	A-4, A-6	0	0	100	95-100	85-100	60-85	30-40	8-15
	7-21	Clay loam	CL	A-6, A-7	0	0	95-100	90-100	85-100	60-85	30-45	15-25
	21-60	Loam, silt loam	CL	A-6	0	0-5	95-100	85-100	75-95	50-80	25-40	10-20
60D2:												
La Rose	0-7	Loam	CL	A-4, A-6	0	0	100	95-100	85-100	60-85	30-40	8-15
	7-20	Clay loam	CL	A-6, A-7	0	0	95-100	90-100	85-100	60-85	30-45	15-25
	20-60	Loam, silt loam	CL	A-6	0	0-5	95-100	85-100	75-95	50-80	25-40	10-20

Table 16.--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	
62A:												
Herbert---------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-20
	8-12	Silt loam	CL	A-6	0	0	100	100	95-100	85-100	25-35	10-20
	12-26	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	25-45	12-25
	26-36	Clay loam, loam	CL	A-6	0	0	95-100	85-100	75-90	60-80	25-40	10-20
	36-60	Loam, sandy loam	CL	A-4, A-6	0	0	95-100	80-98	65-85	45-75	25-40	8-20
67A:												
Harpster--------	0-18	Silty clay loam	CH, CL	A-7	0	0	100	95-100	95-100	85-100	45-60	20-35
	18-36	Silty clay loam	CH, CL	A-7	0	0	100	95-100	95-100	85-100	40-60	20-35
	36-41	Silty clay loam, silt loam, loam	CH, CL	A-6, A-7	0	0	100	95-100	95-100	65-100	35-55	20-35
	41-60	Stratified sandy loam to clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-7	0	0	100	95-100	90-100	45-95	20-50	5-25
69A:												
Milford---------	0-18	Silty clay loam	CH, CL	A-7	0	0	100	95-100	90-100	75-95	40-55	20-30
	18-50	Silty clay, silty clay loam, clay loam	CH, CL	A-7	0	0	100	95-100	90-100	75-100	40-60	20-40
	50-60	Stratified sandy loam to silty clay loam	CL, SC	A-6, A-7	0	0	95-100	95-100	90-100	45-100	25-50	10-30
103A:												
Houghton--------	0-7	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	7-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
104A:												
Virgil----------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	8-20
	7-13	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-20
	13-49	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-50	15-30
	49-58	Sandy loam, loam, silty clay loam	CL, CL-ML, SC-SM	A-4, A-7, A-6	0	0-3	95-100	90-100	75-100	40-85	25-45	5-25
	58-60	Stratified loamy sand to clay loam	CL, CL-ML, SC, SC-SM	A-2, A-6, A-4	0	0-5	90-100	85-100	70-95	20-80	20-35	5-15

Table 16.--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	
125A:												
Selma-----------	0-23	Loam	CL	A-4, A-6, A-7	0	0	100	90-100	85-100	50-75	30-45	8-20
	23-53	Silt loam, sandy loam, clay loam	ML, SM	A-6, A-7	0	0	100	85-100	80-95	40-75	35-50	10-20
	53-60	Stratified loamy sand to silt loam	SM, SC, ML, CL	A-2-4, A-4	0	0	90-100	80-100	50-85	15-85	20-30	NP-10
134C2:												
Camden----------	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	7-34	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	34-55	Clay loam, silt loam, sandy loam	ML, CL, SM, SC	A-4, A-6	0	0-5	90-100	85-100	60-100	35-85	20-40	3-15
	55-60	Stratified loamy sand to silt loam	SM, SC, ML, CL	A-2-4, A-4	0	0-5	90-100	80-100	50-85	20-85	15-25	3-10
146A:												
Elliott---------	0-6	Silt loam	CL	A-4, A-6	0	0	95-100	95-100	90-100	80-100	30-40	8-18
	6-11	Silty clay loam	CL, ML	A-6, A-7	0	0	95-100	95-100	90-100	80-100	30-50	11-20
	11-41	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7	0	0-5	95-100	85-100	80-100	70-96	30-52	11-26
	41-60	Silty clay loam, clay loam	CL	A-6, A-7	0	0-5	90-100	80-100	75-100	65-95	28-45	11-24
146B:												
Elliott---------	0-9	Silt loam	CL	A-4, A-6	0	0	95-100	95-100	90-100	80-100	30-40	8-18
	9-13	Silty clay loam	CL, ML	A-6, A-7	0	0	95-100	95-100	90-100	80-100	30-50	11-20
	13-35	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7	0	0-5	95-100	85-100	80-100	70-96	30-52	11-26
	35-60	Silty clay loam, clay loam	CL	A-6, A-7	0	0-5	90-100	80-100	75-100	65-95	28-45	11-24

Table 16.--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	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
148B:												
Proctor---------	0-12	Silt loam	CL	A-6	0	0	100	100	95-100	85-100	25-40	10-20
	12-29	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	98-100	95-100	85-100	25-50	10-25
	29-48	Clay loam, sandy loam, silt loam	CL-ML, CL, SC-SM, SC	A-4, A-6, A-7	0	0	95-100	85-100	75-95	30-85	20-45	5-25
	48-60	Stratified loamy sand to loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0	90-100	80-98	65-95	15-85	20-35	5-20
149A:												
Brenton---------	0-13	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	30-40	8-15
	13-35	Silty clay loam, silt loam	CL, ML	A-6, A-7	0	0	100	100	95-100	85-100	35-50	10-25
	35-43	Clay loam, silt loam, sandy loam	CL, SC	A-6, A-7	0	0	100	95-100	90-100	40-85	30-45	10-20
	43-60	Stratified loamy sand to clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0	95-100	80-100	80-100	15-85	20-35	5-20
152A:												
Drummer---------	0-14	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	95-100	85-100	30-50	15-30
	14-41	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	85-100	30-50	15-30
	41-47	Loam, clay loam, sandy loam	CL, SC	A-6, A-7	0	0-5	95-100	90-100	75-95	40-85	30-50	15-30
	47-60	Stratified loamy sand to silty clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0-5	95-100	80-98	75-95	15-85	20-35	7-20

Table 16.--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	
154A:												
Flanagan--------	0-18	Silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	15-30
	18-45	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	90-100	40-60	15-30
	45-49	Silt loam, loam, clay loam	CL	A-6, A-7	0	0	85-100	80-100	70-95	50-85	20-45	10-30
	49-60	Loam, clay loam, silt loam	CL-ML, CL	A-4, A-6, A-7	0	0	85-100	80-100	70-95	50-85	20-45	5-20
171A:												
Catlin----------	0-11	Silt loam	CL-ML, CL	A-4, A-6, A-7	0	0	100	100	95-100	90-100	25-45	5-20
	11-44	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	90-100	90-100	30-50	15-30
	44-49	Clay loam, silty clay loam, loam	CL	A-6, A-7	0	0-3	90-100	85-100	85-100	50-85	25-45	10-20
	49-60	Loam, clay loam, silty clay loam	CL-ML, CL	A-4, A-6, A-7	0	0-3	90-100	85-100	85-100	50-85	25-45	5-20
171B:												
Catlin----------	0-11	Silt loam	CL-ML, CL	A-4, A-6, A-7	0	0	100	100	95-100	90-100	25-45	5-20
	11-45	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	90-100	90-100	30-50	15-30
	45-57	Clay loam, silty clay loam, loam	CL	A-6, A-7	0	0-3	90-100	85-100	85-100	50-85	25-45	10-20
	57-70	Loam, clay loam, silty clay loam	CL-ML, CL	A-4, A-6, A-7	0	0-3	90-100	85-100	85-100	50-85	25-45	5-20

Table 16.--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	
193A:												
Mayville--------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-98	20-30	4-15
	8-12	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-98	25-35	5-15
	12-24	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	85-98	35-55	15-35
	24-31	Clay loam, sandy clay loam, loam	CL, SC	A-6, A-7	0-1	0-2	85-100	80-96	70-95	35-75	35-50	15-30
	31-60	Gravelly sandy loam, loam, gravelly loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	80-98	70-95	60-95	30-70	15-35	4-15
193B:												
Mayville--------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-98	20-30	4-15
	6-8	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-98	25-35	5-15
	8-28	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	85-98	35-55	15-35
	28-32	Clay loam, sandy clay loam, loam	CL, SC	A-6, A-7	0-1	0-2	85-100	80-96	70-95	35-75	35-50	15-30
	32-60	Gravelly sandy loam, loam, gravelly loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	80-98	70-95	60-95	30-70	15-35	4-15
193C2:												
Mayville--------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-98	20-30	4-15
	6-24	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	85-98	35-55	15-35
	24-34	Clay loam, sandy clay loam, loam	CL, SC	A-6, A-7	0-1	0-2	85-100	80-96	70-95	35-75	35-50	15-30
	34-60	Gravelly sandy loam, loam, gravelly loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	80-98	70-95	60-95	30-70	15-35	4-15

Table 16.--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	
198A:												
Elburn----------	0-13	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	13-44	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	90-100	30-50	15-35
	44-65	Loam, sandy loam, silty clay loam	CL-ML, CL, SC-SM, SC	A-2, A-4, A-6	0	0	90-100	80-100	60-90	25-85	20-40	5-20
	65-80	Stratified loamy sand to silt loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0	90-100	80-100	60-90	15-85	20-40	5-20
206A:												
Thorp-----------	0-14	Silt loam	CL	A-4, A-6	0	0	100	95-100	90-100	85-100	20-40	8-20
	14-19	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	90-100	85-100	15-35	7-15
	19-43	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-100	35-50	15-30
	43-50	Silt loam, clay loam, sandy clay loam	CL, SC	A-4, A-6, A-7	0	0	90-100	85-100	75-95	40-90	20-50	8-25
	50-65	Stratified loamy sand to silty clay loam	SM, SC-SM, ML, CL-ML	A-2, A-4, A-6	0	0	85-100	80-95	65-85	20-85	15-25	NP-15
210A:												
Lena------------	0-10	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	10-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
219A:												
Millbrook-------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	3-15
	8-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	12-26	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-25
	26-41	Clay loam, silt loam, sandy loam	CL, SC	A-6, A-7	0	0-3	95-100	85-100	70-95	40-85	25-50	10-25
	41-65	Stratified loamy sand to clay loam	CL, CL-ML, SC, SM	A-2, A-4, A-6	0-1	0-5	90-100	80-100	65-90	15-80	5-30	NP-15

Table 16.--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	
221B:												
Parr------------	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	98-100	95-100	80-100	65-95	20-30	4-15
	11-32	Clay loam, loam, silty clay loam	CL	A-6	0	0	95-100	90-100	75-100	50-90	25-45	10-25
	32-36	Loam	CL	A-4, A-6	0	0	95-100	85-100	75-85	50-70	25-35	8-15
	36-60	Loam	CL, CL-ML	A-4	0	0-3	85-100	80-98	70-85	50-65	5-25	3-10
221B2:												
Parr------------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	98-100	95-100	80-100	65-95	20-30	4-15
	9-28	Clay loam, loam, silty clay loam	CL	A-6	0	0	95-100	90-100	75-100	50-90	25-45	10-25
	28-36	Loam	CL	A-4, A-6	0	0	95-100	85-100	75-85	50-70	25-35	8-15
	36-60	Loam	CL, CL-ML	A-4	0	0-3	85-100	80-98	70-85	50-65	5-25	3-10
221C2:												
Parr------------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	98-100	95-100	80-100	65-95	20-30	4-15
	9-29	Clay loam, loam, silty clay loam	CL	A-6	0	0	95-100	90-100	75-100	50-90	25-45	10-25
	29-33	Loam	CL	A-4, A-6	0	0	95-100	85-100	75-85	50-70	25-35	8-15
	33-60	Loam	CL, CL-ML	A-4	0	0-3	85-100	80-98	70-85	50-65	5-25	3-10
223B:												
Varna-----------	0-12	Silt loam	CL	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	25-40	8-20
	12-48	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7	0-1	0-10	95-100	85-100	80-100	75-95	35-56	15-29
	48-60	Silty clay loam, clay loam	CL	A-6, A-7	0-1	0-10	95-100	85-100	80-100	70-95	30-45	13-26
223C2:												
Varna-----------	0-9	Silt loam	CL	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	25-40	8-20
	9-40	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7	0-1	0-10	95-100	85-100	80-100	75-95	35-56	15-29
	40-60	Silty clay loam, clay loam	CL	A-6, A-7	0-1	0-10	95-100	85-100	80-100	70-95	30-45	13-26

Table 16.--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	
232A:												
Ashkum----------	0-12	Silty clay loam	CH, CL	A-7	0	0	100	95-100	95-100	75-100	40-55	20-30
	12-29	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	90-100	85-100	75-100	45-65	20-35
	29-60	Silty clay loam	CL	A-6, A-7	0-1	0-5	95-100	85-100	80-100	75-95	35-50	15-30
233A:												
Birkbeck--------	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	8-11	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	11-46	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	90-100	30-50	10-25
	46-56	Loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-100	50-85	25-40	5-20
	56-60	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-100	50-85	20-40	5-20
233B:												
Birkbeck--------	0-4	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	4-9	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	9-54	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	90-100	30-50	10-25
	54-60	Loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-100	50-85	25-40	5-20
	60-68	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-100	50-85	20-40	5-20
233C2:												
Birkbeck--------	0-9	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	9-42	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	90-100	30-50	10-25
	42-48	Loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-100	50-85	25-40	5-20
	48-60	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-100	50-85	20-40	5-20

Table 16.--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	
236A:												
Sabina----------	0-6	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-15
	6-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-15
	8-40	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	90-100	40-60	20-40
	40-47	Clay loam, loam, silt loam	CL-ML, CL	A-4, A-6, A-7	0-1	0-5	95-100	90-100	70-100	60-85	20-50	5-30
	47-80	Clay loam, loam, silt loam	CL-ML, CL	A-4, A-6, A-7	0-1	0-5	95-100	85-100	70-100	50-85	20-50	5-30
242A:												
Kendall---------	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	7-11	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	11-51	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-45	10-20
	51-58	Clay loam, silt loam, sandy loam	CL-ML, CL, SC-SM, SC	A-2, A-4, A-6	0	0-5	90-100	80-100	60-90	30-85	15-40	5-20
	58-80	Stratified gravelly loamy sand to clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0-5	90-100	70-100	55-90	15-85	15-25	4-15
290A:												
Warsaw----------	0-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	70-100	50-85	20-30	5-15
	15-31	Sandy clay loam, loam, clay loam	CL, SC, SC-SM	A-2, A-6, A-7	0	0-3	90-100	85-100	60-90	30-80	25-45	10-25
	31-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	1-5	30-85	15-80	7-20	2-15	0-20	NP

Table 16.--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	
290B:												
Warsaw----------	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	70-100	50-85	20-30	5-15
	11-29	Sandy clay loam, loam, clay loam	CL, SC, SC-SM	A-2, A-7, A-6	0	0-3	90-100	85-100	60-90	30-80	25-45	10-25
	29-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	1-5	30-85	15-80	7-20	2-15	0-20	NP
297B:												
Ringwood--------	0-12	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	70-90	28-40	8-20
	12-20	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	75-95	30-50	15-35
	20-36	Sandy clay loam, clay loam, loam	CL, SC	A-6	0	0	95-100	85-100	70-95	45-70	25-40	11-25
	36-60	Sandy loam, gravelly sandy loam, very gravelly sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	80-95	45-85	40-80	30-50	0-20	NP-10
298A:												
Beecher---------	0-9	Silt loam	ML	A-4, A-6, A-7	0	0	95-100	95-100	90-100	85-95	30-45	7-15
	9-37	Silty clay, silty clay loam	CH, CL	A-6, A-7	0	0	95-100	90-100	85-100	80-95	35-55	15-30
	37-60	Silty clay loam, clay loam	CL	A-6, A-7	0-1	0-5	90-100	85-100	80-95	75-90	28-50	10-25
298B:												
Beecher---------	0-7	Silt loam	ML	A-6, A-4, A-7	0	0	95-100	95-100	90-100	85-95	30-45	7-15
	7-36	Silty clay, silty clay loam	CH, CL	A-6, A-7	0	0	95-100	90-100	85-100	80-95	35-55	15-30
	36-60	Silty clay loam, clay loam	CL	A-6, A-7	0-1	0-5	90-100	85-100	80-95	75-90	28-50	10-25

Table 16.--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	
318A:												
Lorenzo---------	0-9	Loam	CL	A-6	0	0-5	95-100	90-100	80-95	60-85	25-40	10-20
	9-24	Loam, clay loam, gravelly sandy clay loam	CL, SC	A-2-6, A-6, A-7	0	5-10	85-100	50-95	35-85	20-70	30-50	10-25
	24-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5
318B:												
Lorenzo---------	0-8	Loam	CL	A-6	0	0-5	95-100	90-100	80-95	60-85	25-40	10-20
	8-18	Loam, clay loam, gravelly sandy clay loam	CL, SC	A-2-6, A-6, A-7	0	5-10	85-100	50-95	35-85	20-70	30-50	10-25
	18-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP-SM, SP	A-1	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5
318C2:												
Lorenzo---------	0-8	Loam	CL	A-6	0	0-5	95-100	90-100	80-95	60-85	25-40	10-20
	8-15	Loam, clay loam, gravelly sandy clay loam	CL, SC	A-2-6, A-6, A-7	0	5-10	85-100	50-95	35-85	20-70	30-50	10-25
	15-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5

Table 16.--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	
318D2:												
Lorenzo---------	0-8	Loam	CL	A-6	0	0-5	95-100	90-100	80-95	60-85	25-40	10-20
	8-18	Loam, clay loam, gravelly sandy clay loam	CL, SC	A-2-6, A-6, A-7	0	5-10	85-100	50-95	35-85	20-70	30-50	10-25
	18-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP-SM, SP	A-1	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5
323C2:												
Casco-----------	0-6	Loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	70-95	50-80	20-30	3-10
	6-18	Gravelly clay loam, sandy clay loam, gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-9	55-100	50-100	40-90	20-80	25-46	11-26
	18-60	Stratified sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-30	25-100	15-85	10-75	2-10	0-14	NP
323D2:												
Casco-----------	0-5	Loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	70-95	50-80	20-30	3-10
	5-16	Gravelly clay loam, sandy clay loam, gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-9	55-100	50-100	40-90	20-80	25-46	11-26
	16-60	Stratified sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-30	25-100	15-85	10-75	2-10	0-14	NP

Table 16.--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	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
325A:												
Dresden	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	70-98	20-40	5-15
	9-29	Silty clay loam, clay loam, loam	CL	A-6, A-7	0	0	100	80-100	70-100	50-95	30-45	10-25
	29-33	Gravelly clay loam, sandy clay loam, very gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	60-100	40-100	35-90	30-70	25-45	10-25
	33-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-5	5-35	45-90	15-70	10-50	1-20	0-14	NP
325B:												
Dresden	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	70-98	20-40	5-15
	7-27	Silty clay loam, clay loam, loam	CL	A-6, A-7	0	0	100	80-100	70-100	50-95	30-45	10-25
	27-32	Gravelly clay loam, sandy clay loam, very gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	60-100	40-100	35-90	30-70	25-45	10-25
	32-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-5	5-35	45-90	15-70	10-50	1-20	0-14	NP

Table 16.--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	
325C2:												
Dresden---------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	70-98	20-40	5-15
	7-26	Silty clay loam, clay loam	CL	A-6, A-7	0	0	100	80-100	70-100	50-95	30-45	10-25
	26-30	Gravelly clay loam, sandy clay loam, gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	60-100	40-100	35-90	30-70	25-45	10-25
	30-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-5	5-35	45-90	15-70	10-50	1-20	0-14	NP
327A:												
Fox-------------	0-10	Silt loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	10-21	Silty clay loam, silt loam	CL	A-6, A-7	0	0-1	95-100	85-100	75-100	70-95	25-50	10-25
	21-33	Clay loam, sandy clay loam, gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	65-100	50-100	35-95	30-80	25-45	10-25
	33-60	Stratified gravelly sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-10	30-100	15-85	10-70	2-10	0-14	NP
327B:												
Fox-------------	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	7-11	Silty clay loam, silt loam	CL	A-6, A-7	0	0-1	95-100	85-100	75-100	70-95	25-50	10-25
	11-32	Clay loam, sandy clay loam, gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	65-100	50-100	35-95	30-80	25-45	10-25
	32-60	Stratified gravelly sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-10	30-100	15-85	10-70	2-10	0-14	NP

Table 16.--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	
327C2:												
Fox-------------	0-9	Silt loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	9-21	Silty clay loam, silt loam	CL	A-6, A-7	0	0-1	95-100	85-100	75-100	70-95	25-50	10-25
	21-34	Clay loam, sandy clay loam, gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	65-100	50-100	35-95	30-80	25-45	10-25
	34-60	Stratified gravelly sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-10	30-100	15-85	10-70	2-10	0-14	NP
327D2:												
Fox-------------	0-8	Loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	85-98	55-90	15-30	3-15
	8-28	Clay loam, sandy clay loam, gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	65-100	50-100	35-95	30-80	25-45	10-25
	28-60	Stratified gravelly sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-10	30-100	15-85	10-70	2-10	0-14	NP
329A:												
Will------------	0-14	Loam	CL	A-4, A-6	0	0	95-100	90-100	85-98	55-90	25-40	8-20
	14-28	Loam, clay loam, silty clay loam	CL	A-6, A-7	0-1	0-5	90-100	80-100	60-98	55-90	30-50	20-35
	28-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-2	1-10	40-85	15-70	10-40	1-15	0-14	NP

Table 16.--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	
330A:												
Peotone	0-13	Silty clay loam	CH, CL	A-7	0	0	100	95-100	95-100	90-100	40-65	15-35
	13-50	Silty clay loam, silty clay	CH, CL	A-7	0	0-3	98-100	95-100	90-100	85-100	40-70	15-40
	50-60	Silty clay loam, silt loam, silty clay	CH, CL	A-6, A-7	0	0-5	95-100	95-100	90-100	75-100	30-60	15-30
343A:												
Kane	0-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	90-100	75-95	25-35	5-15
	12-22	Silty clay loam, clay loam	CL, ML	A-6, A-7	0	0	95-100	85-100	80-100	75-95	35-45	10-20
	22-29	Sandy clay loam, sandy loam	CL, SC	A-4, A-6	0-1	0-5	90-95	80-95	70-90	40-70	20-35	8-15
	29-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-1	0-10	50-90	15-75	10-30	2-15	0-5	NP
344C2:												
Harvard	0-7	Silt loam	CL	A-4, A-6	0	0	100	95-100	90-100	85-100	30-40	8-15
	7-32	Silty clay loam, silt loam	CL, ML	A-6, A-7	0	0	100	95-100	90-100	85-100	35-45	10-20
	32-40	Clay loam, silt loam, sandy loam	CL, ML	A-4, A-6, A-7	0	0-3	95-100	85-100	75-90	40-85	30-45	5-20
	40-60	Stratified sand to clay loam	CL, CL-ML, SC-SM, SM	A-2, A-4, A-6	0	0-5	90-100	80-98	40-90	15-70	20-40	NP-20
348B:												
Wingate	0-9	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	25-35	7-15
	9-12	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	25-35	7-15
	12-27	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	35-45	15-25
	27-52	Clay loam, loam	CL	A-6	0	0-3	90-98	90-98	70-95	45-80	30-40	10-20
	52-60	Loam	CL-ML, CL	A-4, A-6	0	0-3	85-98	85-98	70-95	45-75	25-35	7-15

Table 16.--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	
348C2:												
Wingate---------	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	25-35	7-15
	7-25	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	35-45	15-25
	25-46	Clay loam, loam	CL	A-6	0	0-3	90-98	90-98	70-95	45-80	30-40	10-20
	46-60	Loam	CL-ML, CL	A-4, A-6	0	0-3	85-98	85-98	70-95	45-75	25-35	7-15
356A:												
Elpaso----------	0-21	Silty clay loam	CL, CH	A-7	0	0	100	100	95-100	90-100	40-65	15-35
	21-44	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-45	10-25
	44-69	Silty clay loam, silt loam, loam	CL	A-6	0	0	100	85-100	80-100	75-100	25-40	10-20
	69-80	Silty clay loam, silt loam, loam	CL	A-6	0	0-5	95-100	85-100	75-100	70-98	25-40	10-20
361B:												
Kidder----------	0-9	Loam	CL, CL-ML, ML	A-4	0	0	90-100	85-100	70-100	50-90	20-30	3-10
	9-31	Clay loam, sandy clay loam, loam	CL, SC	A-2, A-4, A-6	0	0-3	90-100	80-100	55-95	25-80	20-40	8-25
	31-60	Sandy loam, gravelly sandy loam, fine sandy loam	SM, GM	A-1, A-2, A-4	0	3-10	55-95	50-90	30-80	20-50	0-14	NP
361C2:												
Kidder----------	0-8	Loam	CL, CL-ML, ML	A-4	0	0	90-100	85-100	70-100	50-90	20-30	3-10
	8-30	Clay loam, sandy clay loam, loam	CL, SC	A-2, A-4, A-6	0	0-3	90-100	80-100	55-95	25-80	20-40	8-25
	30-60	Sandy loam, gravelly sandy loam, fine sandy loam	GM, SM	A-1, A-2, A-4	0	3-10	55-95	50-90	30-80	20-50	0-14	NP

Table 16.--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	
361D2:												
Kidder----------	0-7	Loam	CL, CL-ML, ML	A-4	0	0	90-100	85-100	70-100	50-90	20-30	3-10
	7-23	Clay loam, sandy clay loam, loam	CL, SC	A-2, A-4, A-6	0	0-3	90-100	80-100	55-95	25-80	20-40	8-25
	23-60	Sandy loam, gravelly sandy loam, fine sandy loam	GM, SM	A-1, A-2, A-4	0	3-10	55-95	50-90	30-80	20-50	0-14	NP
361E2:												
Kidder----------	0-8	Loam	CL, CL-ML, ML	A-4	0	0	90-100	85-100	70-100	50-90	20-30	3-10
	8-29	Clay loam, sandy clay loam, loam	CL, SC	A-2, A-4, A-6	0	0-3	90-100	80-100	55-95	25-80	20-40	8-25
	29-60	Sandy loam, gravelly sandy loam, fine sandy loam	GM, SM	A-1, A-2, A-4	0	3-10	55-95	50-90	30-80	20-50	0-14	NP
369A:												
Waupecan--------	0-13	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-95	20-35	8-15
	13-38	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
	38-55	Stratified gravelly loamy sand to loam	CL, ML, SM, SC	A-2, A-4	0	0	90-100	50-100	50-70	25-65	0-20	NP-10
	55-70	Stratified gravelly loamy sand to extremely gravelly coarse sand	GM, GW, SP, SP-SM	A-1	0-5	5-35	40-95	15-80	10-50	1-15	0-14	NP

Table 16.--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	
369B:												
Waupecan--------	0-11	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-95	20-35	8-15
	11-38	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
	38-55	Stratified gravelly loamy sand to loam	CL, ML, SM, SC	A-2, A-4	0	0	90-100	50-100	50-70	25-65	0-20	NP-10
	55-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GM, GW, SP, SP-SM	A-1	0-5	5-35	40-95	15-80	10-50	1-15	0-14	NP
442A:												
Mundelein-------	0-17	Silt loam	CL	A-4, A-6, A-7	0	0	98-100	95-100	95-100	85-100	25-45	5-20
	17-31	Silty clay loam, silt loam	CL	A-6, A-7	0	0	95-100	95-100	95-100	85-100	35-50	15-25
	31-42	Sandy loam, silt loam, clay loam	CL, SC-SM	A-4, A-6, A-7	0	0	95-100	85-100	80-95	60-90	20-45	8-20
	42-60	Stratified fine sand to silt loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0	90-100	80-100	60-90	20-85	0-35	NP-20
488A:												
Hooppole--------	0-17	Loam	CL	A-4, A-6	0	0	100	95-100	80-100	55-85	25-35	7-17
	17-44	Clay loam, loam, silt loam	CL	A-6, A-7	0	0	95-100	90-100	85-95	65-85	30-45	10-20
	44-60	Loamy sand, sand	SM, SP-SM	A-2, A-3	0	0	95-100	80-100	30-75	5-25	0-10	NP
512A:												
Danabrook-------	0-19	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-100	25-40	5-20
	19-34	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	98-100	90-100	85-100	30-45	10-25
	34-53	Clay loam, loam, sandy clay loam	CL	A-6, A-7	0	0-2	95-100	80-98	75-95	50-80	25-45	10-20
	53-60	Loam, sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-98	65-90	40-70	20-40	5-15

Table 16.--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	
512B:												
Danabrook-------	0-13	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-100	25-40	5-20
	13-33	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	98-100	90-100	85-100	30-45	10-25
	33-50	Clay loam, loam, sandy clay loam	CL	A-6, A-7	0	0-2	95-100	80-98	75-95	50-80	25-45	10-20
	50-60	Loam, sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-98	65-90	40-70	20-40	5-15
512C2:												
Danabrook-------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-100	25-40	5-20
	8-27	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	98-100	90-100	85-100	30-45	10-25
	27-40	Clay loam, loam, sandy clay loam	CL	A-6, A-7	0	0-2	95-100	80-98	75-95	50-80	25-45	10-20
	40-65	Loam, sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-98	65-90	40-70	20-40	5-15
523A:												
Dunham----------	0-12	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	30-50	15-30
	12-35	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	98-100	90-100	85-95	35-45	15-25
	35-44	Clay loam, silt loam, gravelly sandy loam	CL, SC	A-2, A-4, A-6	0	0-5	90-100	70-100	55-90	30-80	25-40	8-20
	44-60	Gravelly sandy loam, extremely gravelly coarse sand	GM, GP-GM, SM, SP-SM	A-1	0-3	0-10	35-90	15-80	10-40	2-25	0-14	NP

Table 16.--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	
526A:												
Grundelein------	0-11	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-100	30-40	8-15
	11-33	Silty clay loam, silt loam	ML, CL	A-6, A-7	0	0	100	98-100	90-100	80-100	35-50	10-25
	33-39	Stratified gravelly sandy loam to silty clay loam	CL, SC	A-2-4, A-4, A-6	0	0-5	90-100	70-100	55-90	30-80	25-40	8-20
	39-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	GM, GP-GM, SM, SP-SM	A-1	0-3	0-10	40-90	15-80	10-50	2-25	0-14	NP
527B:												
Kidami----------	0-3	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	80-95	70-90	20-35	5-15
	3-10	Silt loam, loam	CL, CL-ML	A-6, A-4	0	0-1	95-100	90-100	80-95	55-90	20-35	5-15
	10-37	Loam, clay loam, silty clay loam	CL	A-6, A-7-6	0	0-2	95-100	85-98	75-95	55-85	25-45	10-25
	37-45	Loam	CL	A-4, A-6	0	0-2	90-100	80-98	70-90	55-70	25-35	8-15
	45-60	Loam, sandy loam	CL, CL-ML, SC, SM	A-4, A-6	0	0-3	90-100	80-95	65-90	40-65	15-30	3-15
527C2:												
Kidami----------	0-9	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	20-35	5-15
	9-30	Loam, clay loam	CL	A-6, A-7-6	0	0-2	95-100	85-98	75-95	55-75	25-45	10-25
	30-40	Loam	CL	A-4, A-6	0	0-2	90-100	80-98	70-90	55-70	25-35	8-15
	40-60	Loam, sandy loam	CL, CL-ML, SC, SM	A-4, A-6	0	0-3	90-100	80-95	65-90	40-65	15-30	3-15
527D2:												
Kidami----------	0-10	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	20-35	5-15
	10-27	Loam, clay loam	CL	A-6, A-7-6	0	0-2	95-100	85-98	75-95	55-75	25-45	10-25
	27-35	Loam	CL	A-4, A-6	0	0-2	90-100	80-98	70-90	55-70	25-35	8-15
	35-60	Loam, sandy loam	CL, CL-ML, SC, SM	A-4, A-6	0	0-3	90-100	80-95	65-90	40-65	15-30	3-15
527D3:												
Kidami----------	0-5	Clay loam	CL	A-6, A-7-6	0	0-2	95-100	90-100	75-95	60-80	30-45	10-25
	5-22	Loam, clay loam	CL	A-6, A-7-6	0	0-2	95-100	85-98	75-95	55-75	25-45	10-25
	22-27	Loam	CL	A-4, A-6	0	0-2	90-100	80-98	70-90	55-70	25-35	8-15
	27-60	Loam, sandy loam	CL, CL-ML, SC, SM	A-4, A-6	0	0-3	90-100	80-95	65-90	40-65	15-30	3-15

Table 16.--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	
529A:												
Selmass	0-15	Loam	CL	A-4, A-6	0	0	100	98-100	80-100	55-85	25-35	7-17
	15-42	Clay loam, loam	CL, SC	A-6	0	0	100	95-100	80-95	45-85	25-35	10-20
	42-47	Loam, sandy loam, loamy sand	CL, ML, SC, SM	A-2, A-4, A-6	0	0	95-100	85-100	60-90	25-65	15-30	2-15
	47-60	Loamy sand, sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0-3	90-100	80-100	15-60	3-20	0-10	NP
530B:												
Ozaukee	0-4	Silt loam	CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	4-10	Silt loam	CL	A-4, A-6	0	0-2	95-100	95-100	90-100	85-95	20-35	5-15
	10-39	Silty clay loam, clay, silty clay	CL, CH	A-7	0-1	0-5	90-98	85-98	85-95	75-95	45-65	25-40
	39-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530C2:												
Ozaukee	0-6	Silt loam	CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	6-28	Silty clay loam, clay, silty clay	CH, CL	A-7	0-1	0-5	90-98	85-98	85-95	75-95	45-65	25-40
	28-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530D2:												
Ozaukee	0-6	Silt loam	CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	6-28	Silty clay loam, clay, silty clay	CH, CL	A-7	0-1	0-5	90-98	85-98	85-95	75-95	45-65	25-40
	28-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530E:												
Ozaukee	0-4	Silt loam	CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	4-8	Silt loam	CL	A-4, A-6	0	0-2	95-100	95-100	90-100	85-95	20-35	5-15
	8-25	Silty clay loam, clay, silty clay	CH, CL	A-7	0-1	0-5	90-98	85-98	85-95	75-95	45-65	25-40
	25-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25

Table 16.--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	
531B:												
Markham---------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	95-100	90-100	85-95	23-40	6-17
	8-32	Silty clay, silty clay loam	CH, CL	A-7	0-2	0-10	95-100	90-100	85-100	80-95	40-54	15-28
	32-60	Silty clay loam, clay loam	CL	A-6, A-7	0-2	0-10	95-100	85-100	80-95	75-95	30-45	13-26
531C2:												
Markham---------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	95-100	90-100	85-95	23-40	6-17
	8-29	Silty clay, silty clay loam	CH, CL	A-7	0-2	0-10	95-100	90-100	85-100	80-95	40-54	15-28
	29-60	Silty clay loam, clay loam	CL	A-6, A-7	0-2	0-10	95-100	85-100	80-95	75-95	30-45	13-26
541B:												
Graymont--------	0-12	Silt loam	CL-ML, ML	A-4, A-7-6, A-6	0	0	100	100	95-100	90-100	28-47	6-17
	12-33	Silty clay loam, silt loam	MH, ML	A-4, A-7, A-6	0	0	100	100	95-100	90-100	33-58	8-27
	33-38	Silty clay loam, silt loam	CH, CL	A-6, A-4, A-7	0	0-5	90-100	85-99	80-95	80-90	30-53	9-27
	38-60	Silty clay loam, silt loam	CH, CL	A-4, A-6, A-7	0	0-5	90-100	80-98	80-95	80-90	25-53	9-27
570B:												
Martinsville----	0-5	Silt loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-100	65-90	15-25	3-8
	5-12	Silt loam, loam	ML, CL-ML, CL	A-4	0	0	100	85-100	75-100	55-90	15-25	3-8
	12-38	Clay loam, silty clay loam, sandy clay loam	CL	A-4, A-6	0	0	95-100	85-100	70-100	50-90	25-40	7-15
	38-53	Sandy loam, sandy clay loam, silt loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0	95-100	85-100	55-95	40-80	20-30	5-15
	53-60	Stratified sand to silt loam	SM, SC-SM, SC, CL-ML	A-1, A-2-4, A-4	0	0	95-100	85-100	45-95	10-80	15-25	NP-8

Table 16.--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	
570C2:												
Martinsville----	0-9	Silt loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-100	65-90	15-25	3-8
	9-42	Clay loam, silty clay loam, sandy clay loam	CL	A-4, A-6	0	0	95-100	85-100	70-100	50-90	25-40	7-15
	42-59	Sandy loam, sandy clay loam, silt loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0	95-100	85-100	55-95	40-80	20-30	5-15
	59-70	Stratified sand to silt loam	SM, SC-SM, SC, CL-ML	A-1, A-2-4, A-4	0	0	95-100	85-100	45-95	10-80	15-25	NP-8
614A:												
Chenoa----------	0-12	Silty clay loam	CL, ML	A-6, A-4, A-7	0	0	100	100	95-100	90-100	32-48	8-21
	12-32	Silty clay loam, silty clay	MH, ML	A-4, A-6, A-7	0	0	100	100	95-100	90-100	33-58	8-27
	32-36	Silty clay loam, silt loam	CH, CL	A-4, A-7, A-6	0	0-5	90-100	85-99	80-95	80-95	30-53	9-27
	36-60	Silty clay loam, silt loam	CH, CL	A-4, A-7, A-6	0	0-5	90-100	85-98	80-95	80-90	30-53	9-27
618E:												
Senachwine------	0-4	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-95	65-95	20-30	5-15
	4-9	Silt loam, loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-95	60-95	20-30	5-15
	9-31	Clay loam, silty clay loam	CL	A-6, A-7-6	0	0	90-98	85-98	85-95	60-85	35-45	15-20
	31-40	Loam	CL	A-6	0-1	0-3	90-98	85-98	75-95	60-80	30-35	10-15
	40-60	Loam	CL-ML, CL	A-4, A-6	0-1	0-3	90-98	85-98	75-95	55-80	25-35	5-15
618F:												
Senachwine------	0-4	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-95	65-95	20-30	5-15
	4-11	Silt loam, loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-95	60-95	20-30	5-15
	11-23	Clay loam, silty clay loam	CL	A-6, A-7-6	0	0	90-98	85-98	85-95	60-85	35-45	15-20
	23-27	Loam	CL	A-6	0-1	0-3	90-98	85-98	75-95	60-80	30-35	10-15
	27-60	Loam	CL-ML, CL	A-4, A-6	0-1	0-3	90-98	85-98	75-95	55-80	25-35	5-15

Table 16.--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	
626A:												
Kish------------	0-11	Loam	CL	A-4, A-6	0	0	100	95-100	80-100	55-85	25-35	7-17
	11-47	Loam, clay loam, sandy loam	CL, SC	A-6	0	0-1	95-100	90-100	75-95	45-85	24-36	11-19
	47-60	Stratified sandy loam to silt loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-2	90-100	85-98	60-90	30-70	15-35	5-20
656B:												
Octagon---------	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	98-100	95-100	80-100	65-90	20-30	3-10
	7-30	Clay loam, loam, silty clay loam	CL	A-6	0	0	95-100	85-100	70-100	55-90	30-40	10-20
	30-60	Loam	CL, CL-ML	A-4	0	0-3	90-100	80-98	65-95	50-65	5-25	4-10
656C2:												
Octagon---------	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	98-100	95-100	80-100	65-90	20-30	3-10
	7-29	Clay loam, loam, silty clay loam	CL	A-6	0	0	95-100	85-100	70-100	55-90	30-40	10-20
	29-60	Loam	CL, CL-ML	A-4	0	0-3	90-100	80-98	65-95	50-65	5-25	4-10
656D2:												
Octagon---------	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	98-100	95-100	80-100	65-90	20-30	3-10
	7-28	Clay loam, loam, silty clay loam	CL	A-6	0	0	95-100	85-100	70-100	55-90	30-40	10-20
	28-60	Loam	CL, CL-ML	A-4	0	0-3	90-100	80-98	65-95	50-65	5-25	4-10
662A:												
Barony----------	0-9	Silt loam	CL	A-4, A-6	0	0	100	98-100	95-100	85-100	25-35	7-16
	9-13	Silt loam	CL	A-4, A-6	0	0	100	98-100	95-100	85-100	25-35	5-15
	13-26	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	85-100	25-45	11-25
	26-57	Clay loam, silt loam, sandy loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0-3	95-100	80-98	75-90	45-85	20-45	3-25
	57-80	Stratified sand to clay loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0-5	90-100	80-95	40-90	10-80	15-35	NP-20

Table 16.--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	
662B:												
Barony----------	0-8	Silt loam	CL	A-4, A-6	0	0	100	98-100	95-100	85-100	25-35	7-16
	8-34	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	85-100	25-45	11-25
	34-54	Clay loam, silt loam, sandy loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0-3	95-100	80-98	75-90	45-85	20-45	3-25
	54-85	Stratified sand to clay loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0-5	90-100	80-95	40-90	10-80	15-35	NP-20
663A:												
Clare-----------	0-11	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	11-32	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	90-100	25-50	10-25
	32-61	Clay loam, sandy loam, silty clay loam	CL-ML, CL, SC-SM, SC	A-4, A-6, A-7	0	0	90-100	80-100	75-100	45-85	20-45	5-25
	61-80	Stratified loamy sand to gravelly loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0	85-100	70-98	50-95	15-85	20-40	5-20
663B:												
Clare-----------	0-14	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	14-36	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	90-100	25-50	10-25
	36-50	Clay loam, silty clay loam, sandy loam	CL-ML, CL, SC-SM, SC	A-4, A-6, A-7	0	0	90-100	80-100	75-100	45-85	20-45	5-25
	50-66	Stratified loamy sand to gravelly loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0	85-100	70-98	50-95	15-85	20-40	5-20

Table 16.--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	
667A:												
Kaneville-------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	8-42	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	25-45	10-30
	42-56	Silt loam, sandy loam, clay loam	CL-ML, CL, SC-SM, SC	A-2, A-4, A-6	0	0-3	90-100	85-100	60-90	30-85	20-35	5-20
	56-80	Stratified clay loam to loamy sand	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0-5	90-100	80-98	55-90	20-80	10-25	4-15
667B:												
Kaneville-------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	9-44	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	25-45	10-30
	44-52	Silt loam, sandy loam, clay loam	CL-ML, CL, SC-SM, SC	A-2, A-4, A-6	0	0-3	90-100	85-100	60-90	30-85	20-35	5-20
	52-80	Stratified clay loam to loamy sand	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0-5	90-100	80-98	55-90	20-80	10-25	4-15
668A:												
Somonauk--------	0-4	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
	4-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	9-34	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	34-70	Clay loam, loam, silt loam, sandy loam	CL, SC	A-2, A-4, A-6	0	0-3	90-100	85-100	60-95	30-85	20-40	3-15
	70-80	Stratified silt loam to gravelly sand	CL, SM, GM, GC	A-2, A-4	0	0-5	85-100	70-98	50-90	15-80	0-25	NP-10

Table 16.--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	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
668B:												
Somonauk--------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
	9-26	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	26-55	Clay loam, silt loam, sandy loam	CL, SC	A-2, A-4, A-6	0	0-3	90-100	85-100	60-95	30-85	20-40	3-15
	55-60	Stratified silt loam to gravelly sand	CL, SM, GM, GC	A-2, A-4	0	0-5	85-100	70-98	50-90	15-80	0-25	NP-10
679A:												
Blackberry------	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	11-52	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	25-45	10-25
	52-68	Silt loam, gravelly clay loam, sandy loam	CL-ML, CL, SC-SM, SC	A-2, A-4, A-6	0	0-5	90-100	70-100	60-90	30-85	20-40	5-20
	68-80	Stratified loamy sand to gravelly clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4	0	0-5	90-100	65-100	60-90	15-85	15-25	5-10
679B:												
Blackberry------	0-16	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	16-47	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	25-45	10-25
	47-62	Silt loam, gravelly clay loam, sandy loam	CL-ML, CL, SC-SM, SC	A-2, A-4, A-6	0	0-5	90-100	70-100	60-90	30-85	20-40	5-20
	62-70	Stratified loamy sand to gravelly clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4	0	0-5	90-100	65-100	60-90	15-85	15-25	5-10

Table 16.--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	
680A:												
Campton---------	0-6	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	7-15
	6-50	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	50-61	Silt loam, clay loam, sandy loam	CL, SC	A-4, A-6	0	0	90-100	80-100	75-90	35-80	20-35	8-20
	61-73	Stratified loamy sand to gravelly loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0-5	90-100	70-100	60-90	20-75	15-35	5-15
680B:												
Campton---------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	7-15
	8-45	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	45-51	Silt loam, clay loam, sandy loam	CL, SC	A-4, A-6	0	0	90-100	80-100	75-90	35-80	20-35	8-20
	51-80	Stratified loamy sand to gravelly loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0-5	90-100	70-100	60-90	20-75	15-35	5-15
696B:												
Zurich----------	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	85-100	25-40	5-20
	5-9	Silt loam	CL	A-4, A-6	0	0	100	95-100	90-100	85-100	20-35	5-15
	9-28	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-100	30-45	10-25
	28-38	Fine sandy loam, silt loam, loam	CL, SC-SM	A-4, A-6	0	0	95-100	85-100	80-100	40-90	20-40	8-20
	38-60	Stratified very fine sand to silt loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0	90-100	80-100	70-100	20-85	15-30	NP-20

Table 16.--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	
697A:												
Wauconda--------	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	8-20
	9-14	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	14-30	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-100	30-45	15-30
	30-38	Silt loam, loam, sandy loam	CL, SC-SM	A-4, A-6	0	0	95-100	85-100	80-95	40-90	20-35	8-20
	38-60	Stratified sand to silt loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0	95-100	80-100	70-95	20-85	0-30	NP-15
739B:												
Milton----------	0-6	Silt loam	CL, CL-ML	A-4	0	0	100	95-100	85-100	75-95	25-35	5-15
	6-13	Silt loam	CL-ML, CL	A-4	0	0	100	95-100	85-100	75-95	20-30	5-15
	13-27	Silty clay loam, silty clay, clay loam	CL, CH	A-6, A-7	0	0	100	90-100	80-100	70-90	35-55	15-35
	27-31	Clay, silty clay, clay loam	CL, CH	A-7	0	0-5	95-100	80-95	70-90	60-90	25-55	10-30
	31-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
739D:												
Milton----------	0-5	Silt loam	CL-ML, CL	A-4	0	0	100	95-100	85-100	75-95	25-35	5-15
	5-11	Silt loam	CL-ML, CL	A-4	0	0	100	95-100	85-100	75-95	20-30	5-15
	11-21	Silty clay loam, silty clay, clay loam	CL, CH	A-6, A-7	0	0	100	90-100	80-100	70-90	35-55	15-35
	21-24	Clay, silty clay, clay loam	CL, CH	A-7	0	0-5	95-100	80-95	70-90	60-90	25-55	10-30
	24-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 16.--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	
791A:												
Rush------------	0-4	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-30	5-15
	4-11	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-100	20-30	5-15
	11-38	Silty clay loam, silt loam	CL	A-6	0	0	100	100	90-100	85-100	30-40	10-20
	38-45	Clay loam, loam, gravelly sandy loam	CL, SC	A-2-6, A-6	0	1-5	80-100	50-100	40-90	25-75	30-40	10-20
	45-60	Stratified extremely gravelly coarse sand to gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0-1	1-5	30-85	15-75	10-40	2-15	0-14	NP
791B:												
Rush------------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-30	5-15
	7-35	Silty clay loam, silt loam	CL	A-6	0	0	100	100	90-100	85-100	30-40	10-20
	35-46	Clay loam, loam, gravelly sandy loam	CL, SC	A-2-6, A-6	0	1-5	80-100	50-100	40-90	25-75	30-40	10-20
	46-60	Stratified extremely gravelly coarse sand to gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0-1	1-5	30-85	15-75	10-40	2-15	0-14	NP
791C2:												
Rush------------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-30	5-15
	7-37	Silty clay loam, silt loam	CL	A-6	0	0	100	100	90-100	85-100	30-40	10-20
	37-48	Clay loam, loam, gravelly sandy loam	CL, SC	A-2-6, A-6	0	1-5	80-100	50-100	40-90	25-75	30-40	10-20
	48-60	Stratified extremely gravelly coarse sand to gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0-1	1-5	30-85	15-75	10-40	2-15	0-14	NP

Table 16.--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	
792A:												
Bowes-----------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-20
	9-13	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	13-43	Silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	90-100	35-45	15-25
	43-51	Gravelly clay loam, gravelly sandy loam, very gravelly loamy sand	CL, SM, ML, SC	A-2, A-4, A-6	0-2	0-20	45-90	30-80	25-75	15-70	0-30	NP-15
	51-61	Stratified extremely gravelly coarse sand to gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0-2	5-35	30-85	15-80	10-50	2-20	0-20	NP-3
792B:												
Bowes-----------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-20
	7-37	Silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	90-100	35-45	15-25
	37-43	Gravelly clay loam, gravelly sandy loam, very gravelly loamy sand	CL, SM, ML, SC	A-2, A-4, A-6	0-2	0-20	45-90	30-80	25-75	15-70	0-30	NP-15
	43-60	Stratified extremely gravelly coarse sand to gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0-2	5-35	30-85	15-80	10-50	2-20	0-20	NP-3
792C2:												
Bowes-----------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-20
	7-35	Silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	90-100	35-45	15-25
	35-44	Gravelly clay loam, gravelly sandy loam, very gravelly loamy sand	CL, SM, ML, SC	A-4, A-2, A-6	0-2	0-20	45-90	30-80	25-75	15-70	0-30	NP-15
	44-60	Stratified extremely gravelly coarse sand to gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0-2	5-35	30-85	15-80	10-50	2-20	0-20	NP-3

Table 16.--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	
802B:												
Orthents, loamy-	0-8	Loam	CL	A-6	0-1	0-5	95-100	85-100	80-95	60-90	20-40	10-20
	8-60	Loam, silt loam, clay loam	CL	A-6	0-1	0-5	95-100	80-100	75-95	60-90	20-40	10-20
802D:												
Orthents, loamy-	0-6	Loam	CL	A-6	0-1	0-5	95-100	85-100	80-95	60-90	20-40	10-20
	6-60	Loam, silt loam, clay loam	CL	A-6	0-1	0-5	95-100	80-100	75-95	60-90	20-40	10-20
805B:												
Orthents, clayey	0-6	Silty clay	CH	A-7	0	0	98-100	90-100	85-100	80-98	45-60	20-40
	6-60	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	98-100	85-100	80-98	75-95	40-55	25-45
830:												
Landfills.												
864:												
Pits, quarry.												
865:												
Pits, gravel.												
903A:												
Muskego---------	0-5	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	5-36	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	36-80	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	75-96	40-50	2-8
Houghton--------	0-12	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	12-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
969E2:												
Casco-----------	0-5	Loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	70-95	50-80	20-30	3-10
	5-19	Gravelly clay loam, sandy clay loam, gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-9	55-100	50-100	40-90	20-80	25-46	11-26
	19-60	Stratified sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-30	25-100	15-85	10-75	2-10	0-14	NP

Table 16.--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	
969E2:												
Rodman----------	0-6	Gravelly loam	CL, ML, SC, SM	A-4	0	0-2	75-95	65-80	60-75	36-65	0-30	3-9
	6-10	Gravelly loam, sandy loam, loam	CL, SM, ML, SC	A-1, A-2, A-4	0	0-2	70-95	50-80	40-75	20-55	0-30	NP-10
	10-60	Stratified very gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-1	1-5	30-70	15-50	7-20	2-15	0-14	NP
969F:												
Casco-----------	0-4	Loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	70-95	50-80	20-30	3-10
	4-15	Gravelly clay loam, sandy clay loam, gravelly loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-9	55-100	50-100	40-90	20-80	25-46	11-26
	15-60	Stratified sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-30	25-100	15-85	10-75	2-10	0-14	NP
Rodman----------	0-11	Gravelly loam	CL, ML, SC, SM	A-4	0	0-2	75-95	65-80	60-75	36-65	0-30	3-9
	11-14	Gravelly loam, sandy loam, loam	CL, SM, ML, SC	A-1, A-2, A-4	0	0-2	70-95	50-80	40-75	20-55	0-30	NP-10
	14-60	Stratified very gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-1	1-5	30-70	15-50	7-20	2-15	0-14	NP
1103A:												
Houghton--------	0-7	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	7-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP

Table 16.--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	
1107A:												
Sawmill---------	0-17	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	30-50	15-30
	17-29	Silty clay loam	CL	A-6, A-7	0	0	100	98-100	95-100	85-100	30-50	15-30
	29-48	Silty clay loam, clay loam, loam	CL	A-4, A-6, A-7	0	0	100	95-100	85-100	80-95	25-50	8-25
	48-60	Silty clay loam, clay loam, silt loam	CL	A-4, A-6, A-7	0	0	100	85-100	75-100	65-95	20-50	8-30
1210A:												
Lena------------	0-11	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	11-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
1903A:												
Muskego---------	0-5	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	5-36	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	36-80	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	75-96	40-50	2-8
Houghton--------	0-12	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	12-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
3076A:												
Otter-----------	0-27	Silt loam	CL	A-4, A-6, A-7	0	0	100	95-100	90-100	85-100	25-45	7-20
	27-41	Silt loam, loam, silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	80-100	30-45	10-20
	41-65	Silt loam, sandy loam, silty clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-7	0	0	90-100	80-100	55-95	45-85	25-45	5-20
3082A:												
Millington------	0-26	Silt loam	CL, ML	A-4, A-6, A-7	0	0	95-100	90-100	80-100	70-95	30-45	8-17
	26-53	Loam, silty clay loam, clay loam	CL	A-6, A-7	0	0	95-100	80-100	75-100	65-95	28-50	10-22
	53-60	Stratified sandy loam to silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0	90-100	80-100	60-95	40-85	20-45	5-20

Table 16.--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	
8076A:												
Otter-----------	0-26	Silt loam	CL	A-4, A-6, A-7	0	0	100	95-100	90-100	85-100	25-45	7-20
	26-42	Silt loam, loam, silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	80-100	30-45	10-20
	42-60	Silt loam, sandy loam, silty clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-7	0	0	90-100	80-100	55-95	45-85	25-45	5-20
8082A:												
Millington------	0-21	Silt loam	CL, ML	A-4, A-6, A-7	0	0	95-100	90-100	80-100	70-95	30-45	8-17
	21-49	Loam, silty clay loam, clay loam	CL	A-6, A-7	0	0	95-100	80-100	75-100	65-95	28-50	10-22
	49-62	Stratified sandy loam to silty clay loam	CL, CL-ML	A-4, A-7, A-6	0	0	90-100	80-100	60-95	40-85	20-45	5-20

Table 17.--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	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					
23A:														
Blount--------------	0-7	5-20	53-77	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.32	.32	4	6	48
	7-13	5-20	53-80	15-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	13-26	5-25	27-60	35-48	1.40-1.70	0.06-0.6	0.12-0.19	3.0-5.9	0.2-1.0	.37	.37			
	26-32	10-30	25-63	27-45	1.50-1.70	0.06-0.2	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
	32-60	10-30	30-63	27-40	1.70-2.00	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
59A:														
Lisbon--------------	0-11	5-15	58-75	20-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	11-36	5-15	50-70	25-35	1.15-1.35	0.6-2	0.18-0.22	3.0-5.9	0.5-2.0	.37	.37			
	36-39	20-40	26-53	20-34	1.45-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-0.5	.32	.32			
	39-70	25-55	25-50	15-25	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.2-0.5	.37	.37			
59B:														
Lisbon--------------	0-15	5-15	58-75	20-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	15-33	5-15	50-70	25-35	1.15-1.35	0.6-2	0.18-0.22	3.0-5.9	0.5-2.0	.37	.37			
	33-42	20-40	26-53	20-34	1.45-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-0.5	.32	.32			
	42-60	25-55	20-50	15-25	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.2-0.5	.37	.37			
60C2:														
La Rose-------------	0-7	15-40	33-60	18-27	1.10-1.35	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.24	.24	5	6	48
	7-21	15-40	25-58	27-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.0-1.0	.32	.32			
	21-60	20-50	28-65	15-25	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
60D2:														
La Rose-------------	0-7	15-40	33-60	18-27	1.10-1.35	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.24	.24	5	6	48
	7-20	15-40	25-58	27-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.0-1.0	.32	.32			
	20-60	20-50	28-65	15-25	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
62A:														
Herbert-------------	0-8	0-15	58-80	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	8-12	0-15	58-85	15-27	1.20-1.40	0.6-2	0.21-0.23	0.0-2.9	0.5-1.0	.43	.43			
	12-26	0-15	50-75	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	26-36	20-40	25-50	22-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.0-0.5	.32	.32			
	36-60	25-55	25-50	15-25	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
67A:														
Harpster------------	0-18	0-15	50-73	27-35	1.05-1.25	0.6-2	0.21-0.24	3.0-5.9	4.0-6.0	.24	.24	5	4L	86
	18-36	0-15	50-73	27-35	1.20-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-2.0	.37	.37			
	36-41	0-30	35-78	22-35	1.25-1.55	0.6-2	0.17-0.22	3.0-5.9	0.5-1.0	.37	.37			
	41-60	5-55	15-80	15-30	1.40-1.60	0.6-6	0.11-0.22	0.0-2.9	0.0-0.5	.32	.32			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
69A:														
Milford-------------	0-18	5-25	35-60	35-40	1.30-1.50	0.6-2	0.20-0.23	6.0-8.9	4.0-6.0	.20	.20	5	4	86
	18-50	0-25	33-65	35-42	1.40-1.60	0.2-0.6	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	50-60	0-55	15-82	18-30	1.50-1.70	0.2-0.6	0.20-0.22	3.0-5.9	0.0-1.0	.37	.37			
103A:														
Houghton------------	0-7	---	---	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	3	2	134
	7-60	---	---	---	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
104A:														
Virgil--------------	0-7	0-10	63-85	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	7-13	0-10	63-85	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.43	.43			
	13-49	0-10	55-73	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	49-58	15-60	10-70	15-30	1.40-1.70	0.6-2	0.11-0.19	3.0-5.9	0.2-0.5	.32	.32			
	58-60	20-80	0-75	5-30	1.45-1.75	0.6-6	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			
125A:														
Selma---------------	0-23	25-45	28-55	20-27	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.24	.24	5	6	48
	23-53	25-55	15-57	18-30	1.40-1.60	0.6-2	0.15-0.20	3.0-5.9	1.0-3.0	.32	.32			
	53-60	15-80	5-82	3-15	1.60-1.90	0.6-6	0.05-0.13	0.0-2.9	0.5-1.0	.28	.28			
134C2:														
Camden--------------	0-7	0-10	63-86	14-27	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-34	0-10	55-78	22-35	1.40-1.60	0.6-2	0.14-0.24	3.0-5.9	0.1-0.5	.37	.37			
	34-55	15-65	5-67	18-30	1.45-1.65	0.6-2	0.11-0.22	3.0-5.9	0.0-0.5	.32	.32			
	55-60	15-80	0-80	5-25	1.40-1.70	0.6-6	0.08-0.20	0.0-2.9	0.0-0.5	.28	.28			
146A:														
Elliott-------------	0-6	0-15	55-76	24-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.24	.24	4	6	48
	6-11	0-15	50-73	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	3.0-4.0	.20	.20			
	11-41	4-25	25-61	35-50	1.30-1.60	0.2-0.6	0.11-0.20	3.0-5.9	0.0-2.0	.37	.37			
	41-60	5-30	30-68	27-40	1.70-1.90	0.06-0.2	0.07-0.10	3.0-5.9	0.0-0.5	.43	.43			
146B:														
Elliott-------------	0-9	0-15	55-76	24-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.24	.24	4	6	48
	9-13	0-15	50-73	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	3.0-4.0	.20	.20			
	13-35	4-25	25-61	35-50	1.30-1.60	0.2-0.6	0.11-0.20	3.0-5.9	0.0-2.0	.37	.37			
	35-60	5-30	30-68	27-40	1.70-1.90	0.06-0.2	0.07-0.10	3.0-5.9	0.0-0.5	.43	.43			
148B:														
Proctor-------------	0-12	0-15	58-82	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
	12-29	0-15	50-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	29-48	15-70	5-67	18-35	1.30-1.55	0.6-2	0.13-0.19	3.0-5.9	0.2-1.0	.32	.32			
	48-60	15-85	0-80	5-25	1.40-1.70	0.6-6	0.07-0.17	0.0-2.9	0.0-0.5	.28	.28			

Table 17.--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					
149A:														
Brenton-------------	0-13	0-15	58-80	20-27	1.25-1.45	0.6-2	0.22-0.26	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	13-35	0-15	50-75	25-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	35-43	15-60	10-67	18-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	43-60	15-85	0-80	5-30	1.50-1.70	0.6-6	0.11-0.20	0.0-2.9	0.0-0.5	.28	.28			
152A:														
Drummer-------------	0-14	0-15	50-73	27-35	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-7.0	.24	.24	5	7	38
	14-41	0-15	50-80	20-35	1.20-1.45	0.6-2	0.21-0.24	3.0-5.9	0.5-2.0	.37	.37			
	41-47	15-55	12-70	15-33	1.30-1.55	0.6-2	0.17-0.20	3.0-5.9	0.2-0.5	.32	.32			
	47-60	15-80	0-75	10-32	1.40-1.70	0.6-6	0.11-0.19	0.0-2.9	0.0-0.2	.28	.28			
154A:														
Flanagan------------	0-18	0-10	63-80	20-27	1.20-1.40	0.6-2	0.22-0.24	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	18-45	0-10	48-65	35-42	1.25-1.45	0.2-0.6	0.15-0.22	6.0-8.9	0.0-1.0	.37	.37			
	45-49	15-40	25-65	20-35	1.45-1.70	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	49-60	15-40	30-65	20-30	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
171A:														
Catlin--------------	0-11	0-8	65-82	18-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	11-44	0-8	57-76	24-35	1.25-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	44-49	15-40	25-65	20-35	1.40-1.70	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	49-60	15-40	30-65	20-30	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
171B:														
Catlin--------------	0-11	0-8	65-82	18-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	11-45	0-8	57-76	24-35	1.25-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	45-57	15-40	25-65	20-35	1.40-1.70	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	57-70	15-40	30-65	20-30	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
193A:														
Mayville------------	0-8	2-15	60-88	10-25	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-12	2-15	60-88	10-25	1.45-1.60	0.6-2	0.19-0.23	0.0-2.9	0.5-1.0	.49	.49			
	12-24	2-15	50-73	25-35	1.55-1.65	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	24-31	25-65	5-52	20-32	1.55-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	31-60	30-70	5-50	10-25	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
193B:														
Mayville------------	0-6	2-15	60-88	10-25	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	6-8	2-15	60-88	10-25	1.45-1.60	0.6-2	0.19-0.23	0.0-2.9	0.5-1.0	.49	.49			
	8-28	2-15	50-73	25-35	1.55-1.65	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	28-32	25-65	5-52	20-32	1.55-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	32-60	30-70	5-50	10-25	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			

Table 17.--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					
193C2:														
Mayville------------	0-6	2-15	60-88	10-25	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	6-24	2-15	50-73	25-35	1.55-1.65	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	24-34	25-65	5-52	20-32	1.55-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	34-60	30-70	5-50	10-25	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
198A:														
Elburn--------------	0-13	0-10	63-78	22-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	5	6	48
	13-44	0-10	55-75	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	44-65	15-70	0-70	15-30	1.50-1.70	0.6-2	0.12-0.18	3.0-5.9	0.0-0.2	.32	.32			
	65-80	15-80	5-83	2-15	1.50-1.75	0.6-6	0.06-0.10	0.0-2.9	0.0-0.2	.28	.28			
206A:														
Thorp---------------	0-14	0-10	63-80	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	4.0-6.0	.28	.28	5	6	48
	14-19	0-10	65-82	18-25	1.30-1.50	0.2-0.6	0.20-0.22	0.0-2.9	0.2-1.0	.43	.43			
	19-43	0-10	55-78	22-35	1.35-1.55	0.06-0.2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	43-50	10-55	15-72	18-30	1.40-1.60	0.6-2	0.15-0.22	3.0-5.9	0.2-0.5	.32	.32			
	50-65	15-80	0-80	5-30	1.50-1.70	0.6-6	0.05-0.13	0.0-2.9	0.0-0.5	.28	.28			
210A:														
Lena----------------	0-10	---	---	---	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---	3	2	134
	10-60	---	---	---	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---			
219A:														
Millbrook-----------	0-8	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	.37	.37	5	6	48
	8-12	0-15	58-85	15-27	1.40-1.60	0.6-2	0.22-0.24	0.0-2.9	0.5-1.0	.43	.43			
	12-26	0-15	50-75	25-35	1.45-1.65	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	26-41	15-60	8-67	18-32	1.45-1.70	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	41-65	20-85	0-70	10-30	1.50-1.75	0.6-6	0.11-0.19	0.0-2.9	0.0-0.5	.28	.28			
221B:														
Parr----------------	0-11	5-35	50-80	12-25	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-4.0	.24	.24	5	5	56
	11-32	10-50	20-65	22-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	32-36	30-50	25-50	20-25	1.55-1.65	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	36-60	35-50	30-50	10-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
221B2:														
Parr----------------	0-9	5-35	50-80	12-25	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.24	.24	5	5	56
	9-28	10-50	20-65	22-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	28-36	30-50	25-50	20-25	1.55-1.65	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	36-60	35-50	30-50	10-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
221C2:														
Parr----------------	0-9	5-35	50-80	12-25	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.24	.24	5	5	56
	9-29	10-50	20-65	22-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	29-33	30-50	25-50	20-25	1.55-1.65	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	33-60	35-50	30-50	10-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			

Table 17.--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					
223B:														
Varna---------------	0-12	5-20	53-75	20-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.24	.24	4	6	48
	12-48	5-20	30-60	35-50	1.30-1.60	0.2-0.6	0.09-0.19	3.0-5.9	0.5-1.0	.37	.37			
	48-60	5-22	40-68	27-40	1.65-1.90	0.06-0.2	0.05-0.10	3.0-5.9	0.2-0.5	.43	.43			
223C2:														
Varna---------------	0-9	5-20	53-75	20-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.24	.24	4	6	48
	9-40	5-20	30-60	35-50	1.30-1.60	0.2-0.6	0.09-0.19	3.0-5.9	0.5-1.0	.37	.37			
	40-60	5-22	40-68	27-40	1.65-1.90	0.06-0.2	0.05-0.10	3.0-5.9	0.2-0.5	.43	.43			
232A:														
Ashkum--------------	0-12	0-20	40-65	35-40	1.15-1.35	0.2-0.6	0.15-0.20	6.0-8.9	3.0-7.0	.20	.20	5	4	86
	12-29	0-20	35-65	35-45	1.30-1.60	0.2-0.6	0.11-0.20	6.0-8.9	0.5-2.0	.32	.32			
	29-60	5-15	45-65	30-40	1.45-1.75	0.2-0.6	0.09-0.18	3.0-5.9	0.0-0.5	.43	.43			
233A:														
Birkbeck------------	0-8	0-10	63-85	15-27	1.20-1.50	0.6-2	0.22-0.25	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-11	0-10	65-87	13-25	1.35-1.55	0.6-2	0.21-0.24	0.0-2.9	0.1-1.0	.49	.49			
	11-46	0-10	55-75	25-35	1.35-1.55	0.6-2	0.14-0.24	3.0-5.9	0.0-1.0	.37	.37			
	46-56	15-40	25-65	20-35	1.35-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	56-60	15-40	30-68	17-30	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
233B:														
Birkbeck------------	0-4	0-10	63-85	15-27	1.20-1.50	0.6-2	0.22-0.25	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	4-9	0-10	65-87	13-25	1.35-1.55	0.6-2	0.21-0.24	0.0-2.9	0.1-1.0	.49	.49			
	9-54	0-10	55-75	25-35	1.35-1.55	0.6-2	0.14-0.24	3.0-5.9	0.0-1.0	.37	.37			
	54-60	15-40	25-65	20-35	1.35-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	60-68	15-40	30-68	17-30	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
233C2:														
Birkbeck------------	0-9	0-10	63-85	15-27	1.20-1.50	0.6-2	0.22-0.25	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	9-42	0-10	55-75	25-35	1.35-1.55	0.6-2	0.14-0.24	3.0-5.9	0.0-1.0	.37	.37			
	42-48	15-40	25-65	20-35	1.35-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	48-60	15-40	30-68	17-30	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
236A:														
Sabina--------------	0-6	0-10	63-80	20-27	1.25-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	6-8	0-10	65-82	18-25	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.1-1.0	.49	.49			
	8-40	0-10	48-65	35-42	1.35-1.55	0.2-0.6	0.11-0.20	6.0-8.9	0.0-1.0	.37	.37			
	40-47	15-35	30-65	20-35	1.50-1.75	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	47-80	15-40	28-70	15-32	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			

Table 17.--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					
242A:														
Kendall-------------	0-7	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
	7-11	0-10	65-82	18-25	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.1-1.0	.49	.49			
	11-51	0-10	55-73	27-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	51-58	15-65	5-75	10-30	1.55-1.70	0.6-2	0.11-0.22	3.0-5.9	0.0-0.5	.32	.32			
	58-80	15-80	0-80	5-30	1.55-1.70	0.6-6	0.11-0.22	0.0-2.9	0.0-0.5	.28	.28			
290A:														
Warsaw--------------	0-15	15-50	28-60	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	5	56
	15-31	20-70	5-55	17-30	1.35-1.60	0.6-2	0.16-0.19	3.0-5.9	0.5-2.0	.32	.32			
	31-60	85-98	0-13	2-8	1.40-1.65	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
290B:														
Warsaw--------------	0-11	15-50	28-60	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	5	56
	11-29	20-70	5-55	17-30	1.35-1.60	0.6-2	0.16-0.19	3.0-5.9	0.5-2.0	.32	.32			
	29-60	85-98	0-13	2-8	1.40-1.65	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
297B:														
Ringwood------------	0-12	10-30	50-72	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.24	.24	5	5	56
	12-20	5-25	40-73	22-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.32	.32			
	20-36	30-55	15-52	18-30	1.35-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	36-60	50-70	12-45	5-18	1.50-1.75	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
298A:														
Beecher-------------	0-9	5-15	58-75	20-27	1.35-1.55	0.2-0.6	0.21-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	9-37	5-20	30-60	35-50	1.40-1.65	0.06-0.2	0.11-0.19	3.0-5.9	0.0-1.0	.37	.37			
	37-60	10-25	35-65	25-40	1.65-1.85	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
298B:														
Beecher-------------	0-7	5-15	58-75	20-27	1.35-1.55	0.2-0.6	0.21-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	7-36	5-20	30-60	35-50	1.40-1.65	0.06-0.2	0.11-0.19	3.0-5.9	0.0-1.0	.37	.37			
	36-60	10-25	35-65	25-40	1.65-1.85	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
318A:														
Lorenzo-------------	0-9	20-40	33-55	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-4.0	.24	.24	3	6	48
	9-24	30-80	5-50	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	24-60	85-99	0-14	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
318B:														
Lorenzo-------------	0-8	20-40	33-55	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-4.0	.24	.24	3	6	48
	8-18	30-80	5-50	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	18-60	85-99	0-14	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
318C2:														
Lorenzo-------------	0-8	20-40	33-55	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-3.0	.24	.24	3	6	48
	8-15	30-80	5-50	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	15-60	85-99	0-14	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			

Table 17.--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					
318D2:														
Lorenzo-------------	0-8	20-40	33-55	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-3.0	.24	.24	3	6	48
	8-18	30-80	5-50	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	18-60	85-99	0-14	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
323C2:														
Casco---------------	0-6	20-50	28-55	10-22	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	6-18	20-80	5-50	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.0-0.5	.28	.32			
	18-60	90-98	0-10	0-2	1.30-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
323D2:														
Casco---------------	0-5	20-50	28-55	10-22	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	5-16	20-80	5-50	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.0-0.5	.28	.32			
	16-60	90-98	0-10	0-2	1.30-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
325A:														
Dresden-------------	0-9	2-30	50-80	18-27	1.25-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	9-29	5-50	20-70	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	29-33	30-70	5-50	20-30	1.45-1.70	0.6-2	0.08-0.18	3.0-5.9	0.0-0.5	.28	.32			
	33-60	80-99	0-19	1-5	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
325B:														
Dresden-------------	0-7	2-30	50-80	18-27	1.25-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	7-27	5-50	20-70	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	27-32	30-70	5-50	20-30	1.45-1.70	0.6-2	0.08-0.18	3.0-5.9	0.0-0.5	.28	.32			
	32-60	80-99	0-19	1-5	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
325C2:														
Dresden-------------	0-7	2-30	50-80	18-27	1.25-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.28	.28	4	6	48
	7-26	5-50	20-68	27-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	26-30	30-70	5-50	20-30	1.45-1.70	0.6-2	0.08-0.18	3.0-5.9	0.0-0.5	.28	.32			
	30-60	80-99	0-19	1-5	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
327A:														
Fox-----------------	0-10	5-30	50-85	10-22	1.35-1.55	0.6-2	0.17-0.24	0.0-2.9	1.0-3.0	.32	.32	4	5	56
	10-21	5-30	50-77	18-35	1.55-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	21-33	20-75	5-50	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.32			
	33-60	90-98	0-10	0-2	1.30-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
327B:														
Fox-----------------	0-7	5-30	50-85	10-22	1.35-1.55	0.6-2	0.17-0.24	0.0-2.9	1.0-3.0	.32	.32	4	5	56
	7-11	5-30	50-77	18-35	1.55-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	11-32	20-75	5-50	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.32			
	32-60	90-98	0-10	0-2	1.30-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			

Table 17.--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					
327C2:														
Fox------------------	0-9	5-30	50-85	10-22	1.35-1.55	0.6-2	0.17-0.24	0.0-2.9	1.0-2.0	.32	.32	4	5	56
	9-21	5-30	50-77	18-35	1.55-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	21-34	20-75	5-50	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.32			
	34-60	90-98	0-10	0-2	1.30-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
327D2:														
Fox------------------	0-8	15-50	28-60	12-22	1.35-1.55	0.6-2	0.17-0.24	0.0-2.9	1.0-2.0	.32	.32	4	5	56
	8-28	20-75	5-50	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.32			
	28-60	90-98	0-10	0-2	1.30-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
329A:														
Will-----------------	0-14	15-50	25-60	20-27	1.25-1.40	0.6-2	0.15-0.20	0.0-2.9	5.0-6.0	.24	.24	4	6	48
	14-28	15-50	27-62	23-33	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.5-2.0	.32	.32			
	28-60	85-99	0-15	0-10	1.65-1.85	20-100	0.02-0.04	0.0-2.9	0.2-1.0	.02	.05			
330A:														
Peotone--------------	0-13	0-10	50-67	33-40	1.20-1.40	0.2-0.6	0.21-0.23	6.0-8.9	5.0-7.0	.24	.24	5	4	86
	13-50	0-10	45-65	35-45	1.30-1.60	0.2-0.6	0.11-0.20	6.0-8.9	0.5-3.0	.37	.37			
	50-60	0-20	38-75	25-42	1.40-1.65	0.2-0.6	0.18-0.20	6.0-8.9	0.2-0.5	.43	.43			
343A:														
Kane-----------------	0-12	5-30	50-77	18-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	6	48
	12-22	5-30	45-68	27-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.5-1.0	.32	.32			
	22-29	30-60	10-55	15-30	1.40-1.60	0.6-6	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
	29-60	85-98	0-14	1-10	1.65-1.85	20-100	0.02-0.04	0.0-2.9	0.0-0.2	.02	.05			
344C2:														
Harvard--------------	0-7	0-15	58-80	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
	7-32	0-15	50-75	25-35	1.25-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.37	.37			
	32-40	15-60	10-70	15-35	1.30-1.60	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	40-60	30-87	0-65	5-30	1.40-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.5	.28	.28			
348B:														
Wingate--------------	0-9	0-15	58-85	15-27	1.30-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-12	0-15	58-85	15-27	1.20-1.45	0.6-2	0.21-0.23	0.0-2.9	0.5-2.0	.43	.43			
	12-27	0-15	50-76	24-35	1.40-1.55	0.6-2	0.18-0.22	3.0-5.9	0.5-2.0	.37	.37			
	27-52	20-50	20-60	20-30	1.40-1.60	0.6-2	0.12-0.19	3.0-5.9	0.2-0.5	.32	.32			
	52-60	25-50	23-60	15-27	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
348C2:														
Wingate--------------	0-7	0-15	58-85	15-27	1.30-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	7-25	0-15	50-76	24-35	1.40-1.55	0.6-2	0.18-0.22	3.0-5.9	0.5-2.0	.37	.37			
	25-46	20-50	20-60	20-30	1.40-1.60	0.6-2	0.12-0.19	3.0-5.9	0.2-0.5	.32	.32			
	46-60	25-50	23-60	15-27	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			

Table 17.--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					
356A:														
Elpaso	0-21	1-10	55-72	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	5.0-7.0	.24	.24	5	7	38
	21-44	1-10	50-75	24-40	1.20-1.40	0.6-2	0.22-0.24	3.0-5.9	0.2-2.0	.37	.37			
	44-69	2-30	30-83	15-40	1.35-1.60	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.32	.32			
	69-80	2-30	40-83	15-30	1.60-1.85	0.2-0.6	0.05-0.15	3.0-5.9	0.2-0.5	.37	.37			
361B:														
Kidder	0-9	15-50	28-55	10-25	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	9-31	20-75	5-55	20-30	1.50-1.65	0.6-2	0.11-0.19	3.0-5.9	0.2-1.0	.32	.32			
	31-60	50-80	0-44	6-15	1.40-1.60	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
361C2:														
Kidder	0-8	15-50	28-55	10-25	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	8-30	20-75	5-55	20-30	1.50-1.65	0.6-2	0.11-0.19	3.0-5.9	0.2-1.0	.32	.32			
	30-60	50-80	0-44	6-15	1.40-1.60	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
361D2:														
Kidder	0-7	15-50	28-55	10-25	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	7-23	20-75	5-55	20-30	1.50-1.65	0.6-2	0.11-0.19	3.0-5.9	0.2-1.0	.32	.32			
	23-60	50-80	0-44	6-15	1.40-1.60	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
361E2:														
Kidder	0-8	15-50	28-55	10-25	1.35-1.55	0.6-2	0.16-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	8-29	20-75	5-55	20-30	1.50-1.65	0.6-2	0.11-0.19	3.0-5.9	0.2-1.0	.32	.32			
	29-60	50-80	0-44	6-15	1.40-1.60	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
369A:														
Waupecan	0-13	5-15	68-80	15-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	4	6	48
	13-38	5-15	50-70	25-35	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	38-55	35-75	5-50	10-25	1.55-1.75	2-6	0.08-0.18	0.0-2.9	0.2-0.5	.28	.32			
	55-70	85-99	0-15	0-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.2-0.5	.02	.05			
369B:														
Waupecan	0-11	5-15	68-80	15-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	4	6	48
	11-38	5-15	50-70	25-35	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	38-55	35-75	5-50	10-25	1.55-1.75	2-6	0.08-0.18	0.0-2.9	0.2-0.5	.28	.32			
	55-60	85-99	0-15	0-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.2-0.5	.02	.05			
442A:														
Mundelein	0-17	0-15	58-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	17-31	0-15	50-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	31-42	10-45	25-75	15-30	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.2-0.5	.32	.32			
	42-60	15-87	2-80	5-25	1.50-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.2	.28	.28			

Table 17.--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					
488A:														
Hooppole------------	0-17	15-45	28-50	20-27	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	4.0-7.0	.24	.24	4	4L	86
	17-44	15-40	25-60	25-35	1.35-1.50	0.6-2	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
	44-60	75-95	0-23	2-12	1.65-1.80	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
512A:														
Danabrook-----------	0-19	0-15	58-82	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	5	6	48
	19-34	0-15	50-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	34-53	25-50	10-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	53-60	35-60	20-45	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.2-0.5	.37	.37			
512B:														
Danabrook-----------	0-13	0-15	58-82	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	5	6	48
	13-33	0-15	50-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	33-50	25-50	10-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	50-60	35-60	20-45	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.2-0.5	.37	.37			
512C2:														
Danabrook-----------	0-8	0-15	58-82	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	8-27	0-15	50-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	27-40	25-50	10-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	40-65	35-60	20-45	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.2-0.5	.37	.37			
523A:														
Dunham--------------	0-12	5-15	50-68	27-35	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-6.0	.24	.24	4	7	38
	12-35	5-20	50-72	23-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-2.0	.37	.37			
	35-44	20-70	5-70	10-30	1.35-1.60	0.6-2	0.15-0.20	3.0-5.9	0.0-0.5	.28	.32			
	44-60	75-98	0-20	1-10	1.60-1.85	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
526A:														
Grundelein----------	0-11	0-15	58-80	18-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	4	6	48
	11-33	0-20	50-78	22-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	33-39	20-70	5-70	10-30	1.35-1.60	0.6-2	0.15-0.20	3.0-5.9	0.0-0.5	.28	.32			
	39-60	75-98	0-20	1-10	1.60-1.85	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
527B:														
Kidami--------------	0-3	10-30	50-80	10-24	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	3-10	10-45	31-80	10-24	1.35-1.50	0.6-2	0.20-0.23	0.0-2.9	0.5-1.0	.37	.37			
	10-37	15-45	21-65	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	37-45	30-45	28-53	17-27	1.45-1.65	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	45-60	35-60	20-50	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
527C2:														
Kidami--------------	0-9	15-45	31-55	10-24	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	9-30	25-45	21-55	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	30-40	30-45	28-53	17-27	1.45-1.65	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	40-60	35-60	20-50	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			

Table 17.--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					
527D2:														
Kidami	0-10	15-45	31-55	10-24	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	10-27	25-45	21-55	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	27-35	30-45	28-53	17-27	1.45-1.65	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	35-60	35-60	20-50	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
527D3:														
Kidami	0-5	20-40	26-53	27-34	1.35-1.55	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.32	.32	4	6	48
	5-22	25-45	21-55	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	22-27	30-45	28-53	17-27	1.45-1.65	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
	27-60	35-60	20-50	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
529A:														
Selmass	0-15	15-45	28-60	18-27	1.35-1.45	0.6-2	0.20-0.24	0.0-2.9	4.0-5.0	.24	.24	4	6	48
	15-42	15-55	15-55	20-30	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
	42-47	35-75	5-50	10-20	1.45-1.65	0.6-6	0.08-0.19	0.0-2.9	0.0-0.5	.28	.28			
	47-60	80-98	0-19	1-10	1.55-1.70	6-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.05			
530B:														
Ozaukee	0-4	5-15	58-80	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	4-10	5-15	58-80	15-27	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	10-39	5-15	35-60	35-50	1.60-1.70	0.06-0.2	0.08-0.20	3.0-5.9	0.2-0.5	.37	.37			
	39-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
530C2:														
Ozaukee	0-6	5-15	58-80	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	4	6	48
	6-28	5-15	35-60	35-50	1.60-1.70	0.06-0.2	0.08-0.20	3.0-5.9	0.2-0.5	.37	.37			
	28-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
530D2:														
Ozaukee	0-6	5-15	58-80	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	4	6	48
	6-28	5-15	35-60	35-50	1.60-1.70	0.06-0.2	0.08-0.20	3.0-5.9	0.2-0.5	.37	.37			
	28-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
530E:														
Ozaukee	0-4	5-15	58-80	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	4-8	5-15	58-80	15-27	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	8-25	5-15	35-60	35-50	1.60-1.70	0.06-0.2	0.08-0.20	3.0-5.9	0.2-0.5	.37	.37			
	25-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
531B:														
Markham	0-8	5-15	58-73	22-27	1.10-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	8-32	5-20	35-60	35-45	1.40-1.60	0.06-0.6	0.11-0.20	3.0-5.9	0.2-1.0	.37	.37			
	32-60	5-25	37-68	27-38	1.65-1.85	0.06-0.2	0.05-0.10	3.0-5.9	0.2-0.5	.43	.43			

Table 17.--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					
531C2:														
Markham-------------	0-8	5-15	58-73	22-27	1.10-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.28	.28	4	6	48
	8-29	5-20	35-60	35-45	1.40-1.60	0.06-0.6	0.11-0.20	3.0-5.9	0.2-1.0	.37	.37			
	29-60	5-25	37-68	27-38	1.65-1.85	0.06-0.2	0.05-0.10	3.0-5.9	0.2-0.5	.43	.43			
541B:														
Graymont------------	0-12	0-10	63-78	22-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	5	6	48
	12-33	0-10	55-75	25-35	1.25-1.45	0.6-2	0.16-0.20	3.0-5.9	0.0-2.0	.37	.37			
	33-38	10-20	40-68	22-40	1.50-1.75	0.06-0.2	0.14-0.18	3.0-5.9	0.0-0.5	.37	.37			
	38-60	10-20	46-66	24-34	1.50-1.75	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
570B:														
Martinsville--------	0-5	12-35	50-78	10-20	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-12	12-45	37-80	8-18	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.1-1.0	.37	.37			
	12-38	12-50	17-68	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.0-0.5	.32	.32			
	38-53	20-60	15-65	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.0-0.2	.32	.32			
	53-60	20-90	0-80	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.2	.28	.28			
570C2:														
Martinsville--------	0-9	12-35	50-78	10-20	1.35-1.45	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	9-42	12-50	17-68	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.0-0.5	.32	.32			
	42-59	20-60	15-65	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.0-0.2	.32	.32			
	59-70	20-90	0-80	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.2	.28	.28			
614A:														
Chenoa--------------	0-12	0-10	58-73	27-32	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-5.0	.28	.28	5	7	38
	12-32	0-10	45-68	32-45	1.25-1.45	0.6-2	0.16-0.20	3.0-5.9	0.0-2.0	.37	.37			
	32-36	5-20	40-70	25-40	1.50-1.75	0.06-0.2	0.14-0.20	3.0-5.9	0.0-0.5	.37	.37			
	36-60	10-20	40-66	24-40	1.50-1.75	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
618E:														
Senachwine----------	0-4	5-35	43-84	11-22	1.20-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-9	5-40	40-85	10-20	1.30-1.55	0.6-2	0.20-0.22	0.0-2.9	0.1-1.0	.37	.37			
	9-31	15-40	25-58	27-35	1.40-1.70	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	31-40	20-40	33-60	20-27	1.60-1.80	0.2-0.6	0.07-0.17	3.0-5.9	0.0-0.5	.32	.32			
	40-60	20-45	30-65	15-25	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
618F:														
Senachwine----------	0-4	5-35	43-84	11-22	1.20-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-11	5-40	40-85	10-20	1.30-1.55	0.6-2	0.20-0.22	0.0-2.9	0.1-1.0	.37	.37			
	11-23	15-40	25-58	27-35	1.40-1.70	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	23-27	20-40	33-60	20-27	1.60-1.80	0.2-0.6	0.07-0.17	3.0-5.9	0.0-0.5	.32	.32			
	27-60	20-45	30-65	15-25	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			

Table 17.--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					
626A:														
Kish----------------	0-11	15-45	28-60	20-27	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.24	.24	5	4L	86
	11-47	15-60	10-65	18-32	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-2.0	.32	.32			
	47-60	30-70	12-63	7-18	1.45-1.70	0.6-6	0.07-0.19	0.0-2.9	0.0-1.0	.32	.32			
656B:														
Octagon-------------	0-7	10-35	50-75	15-27	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	7-30	10-45	21-65	22-34	1.35-1.50	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	30-60	35-50	30-50	10-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
656C2:														
Octagon-------------	0-7	10-35	50-75	15-27	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.28	.28	5	6	48
	7-29	10-45	21-65	22-34	1.35-1.50	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	29-60	35-50	30-50	10-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
656D2:														
Octagon-------------	0-7	10-35	50-75	15-27	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.28	.28	5	6	48
	7-28	10-45	21-65	22-34	1.35-1.50	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	28-60	35-50	30-50	10-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
662A:														
Barony--------------	0-9	0-15	58-85	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-13	0-15	58-85	15-27	1.20-1.40	0.6-2	0.21-0.23	0.0-2.9	0.5-1.0	.43	.43			
	13-26	0-15	50-75	25-35	1.25-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.37	.37			
	26-57	15-60	10-70	15-32	1.30-1.60	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	57-80	20-90	0-75	5-28	1.40-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.5	.28	.28			
662B:														
Barony--------------	0-8	0-15	58-85	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	8-34	0-15	50-75	25-35	1.25-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.37	.37			
	34-54	15-60	10-70	15-32	1.30-1.60	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	54-85	20-90	0-75	5-28	1.40-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.5	.28	.28			
663A:														
Clare---------------	0-11	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
	11-32	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	32-61	15-45	23-67	18-32	1.30-1.55	0.6-2	0.13-0.19	3.0-5.9	0.2-1.0	.32	.32			
	61-80	15-80	0-80	5-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.24	.28			
663B:														
Clare---------------	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
	14-36	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	36-50	15-45	23-67	18-32	1.30-1.55	0.6-2	0.13-0.19	3.0-5.9	0.2-1.0	.32	.32			
	50-66	15-80	0-80	5-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.24	.28			

Table 17.--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					
667A:														
Kaneville-----------	0-8	0-10	63-85	15-27	1.25-1.45	0.6-2	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	8-42	0-10	56-75	25-34	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	42-56	15-60	8-70	15-32	1.30-1.50	0.6-2	0.11-0.16	3.0-5.9	0.2-0.5	.32	.32			
	56-80	20-80	0-70	10-30	1.40-1.70	0.6-6	0.07-0.11	0.0-2.9	0.0-0.2	.28	.28			
667B:														
Kaneville-----------	0-9	0-10	63-85	15-27	1.25-1.45	0.6-2	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-44	0-10	56-75	25-34	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	44-52	15-60	8-70	15-32	1.30-1.50	0.6-2	0.11-0.16	3.0-5.9	0.2-0.5	.32	.32			
	52-80	20-80	0-70	10-30	1.40-1.70	0.6-6	0.07-0.11	0.0-2.9	0.0-0.2	.28	.28			
668A:														
Somonauk------------	0-4	0-10	63-86	14-27	1.25-1.45	0.6-2	0.21-0.25	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	4-9	0-10	63-86	14-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.5-1.0	.49	.49			
	9-34	0-10	55-78	22-35	1.35-1.55	0.6-2	0.14-0.24	3.0-5.9	0.2-1.0	.37	.37			
	34-70	15-70	5-70	15-32	1.45-1.65	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	70-80	20-90	0-75	5-20	1.55-1.70	0.6-6	0.07-0.17	0.0-2.9	0.0-0.5	.28	.28			
668B:														
Somonauk------------	0-9	0-10	63-86	14-27	1.25-1.45	0.6-2	0.21-0.25	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-26	0-10	55-78	22-35	1.35-1.55	0.6-2	0.14-0.24	3.0-5.9	0.2-1.0	.37	.37			
	26-55	15-70	5-70	15-32	1.45-1.65	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	55-60	20-90	0-75	5-20	1.55-1.70	0.6-6	0.07-0.17	0.0-2.9	0.0-0.5	.28	.28			
679A:														
Blackberry----------	0-11	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
	11-52	0-10	55-75	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	52-68	15-60	5-70	15-35	1.30-1.55	0.6-2	0.11-0.22	3.0-5.9	0.1-0.5	.32	.32			
	68-80	15-80	0-80	5-30	1.40-1.70	0.6-6	0.05-0.19	0.0-2.9	0.0-0.5	.24	.28			
679B:														
Blackberry----------	0-16	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
	16-47	0-10	55-75	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	47-62	15-60	5-70	15-35	1.30-1.55	0.6-2	0.11-0.22	3.0-5.9	0.1-0.5	.32	.32			
	62-70	15-80	0-80	5-30	1.40-1.70	0.6-6	0.05-0.19	0.0-2.9	0.0-0.5	.24	.28			
680A:														
Campton-------------	0-6	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
	6-50	0-10	55-75	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	50-61	20-65	5-65	15-30	1.30-1.50	0.6-2	0.11-0.16	3.0-5.9	0.0-0.5	.32	.32			
	61-73	25-80	0-70	5-25	1.55-1.75	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.28	.28			

Table 17.--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					
680B:														
Campton-------------	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
	8-45	0-10	55-75	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	45-51	20-65	5-65	15-30	1.30-1.50	0.6-2	0.11-0.16	3.0-5.9	0.0-0.5	.32	.32			
	51-80	25-80	0-70	5-25	1.55-1.75	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.28	.28			
696B:														
Zurich--------------	0-5	0-15	58-85	15-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	5-9	0-15	60-85	15-25	1.20-1.35	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.49	.49			
	9-28	0-15	50-75	25-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	28-38	10-60	15-80	8-25	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.2-0.5	.32	.32			
	38-60	15-87	0-80	5-20	1.40-1.70	0.6-6	0.07-0.15	0.0-2.9	0.0-0.2	.28	.28			
697A:														
Wauconda------------	0-9	0-15	58-85	15-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-14	0-15	60-85	15-25	1.20-1.35	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.43	.43			
	14-30	0-15	50-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	30-38	10-60	15-80	8-25	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.2-0.5	.32	.32			
	38-60	15-87	0-80	5-20	1.50-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.2	.28	.28			
739B:														
Milton--------------	0-6	5-25	50-80	15-27	1.25-1.45	0.6-2	0.18-0.24	0.0-2.9	1.0-3.0	.32	.32	2	6	48
	6-13	5-25	50-80	12-25	1.30-1.50	0.6-2	0.18-0.22	0.0-2.9	0.5-1.0	.37	.37			
	13-27	10-30	30-63	27-45	1.50-1.70	0.2-0.6	0.12-0.16	3.0-5.9	0.2-1.0	.37	.37			
	27-31	10-40	15-60	30-50	1.45-1.65	0.2-0.6	0.06-0.12	3.0-5.9	0.0-0.5	.20	.20			
	31-60	---	---	---	---	---	---	---	---	---	---			
739D:														
Milton--------------	0-5	5-25	50-80	15-27	1.25-1.45	0.6-2	0.18-0.24	0.0-2.9	1.0-3.0	.32	.32	2	6	48
	5-11	5-25	50-80	12-25	1.30-1.50	0.6-2	0.18-0.22	0.0-2.9	0.5-1.0	.37	.37			
	11-21	10-30	30-63	27-45	1.50-1.70	0.2-0.6	0.12-0.16	3.0-5.9	0.2-1.0	.37	.37			
	21-24	10-40	15-60	30-50	1.45-1.65	0.2-0.6	0.06-0.12	3.0-5.9	0.0-0.5	.20	.20			
	24-60	---	---	---	---	---	---	---	---	---	---			
791A:														
Rush----------------	0-4	0-15	58-88	12-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	4-11	0-15	58-88	12-27	1.25-1.40	0.6-2	0.21-0.23	0.0-2.9	0.5-1.0	.49	.49			
	11-38	0-15	51-78	22-34	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	38-45	25-75	5-50	18-30	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.28	.32			
	45-60	85-98	0-13	2-6	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
791B:														
Rush----------------	0-7	0-15	58-88	12-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	7-35	0-15	51-78	22-34	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	35-46	25-75	5-50	18-30	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.28	.32			
	46-60	85-98	0-13	2-6	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			

Table 17.--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					
791C2:														
Rush----------------	0-7	0-15	58-88	12-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	4	5	56
	7-37	0-15	51-78	22-34	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	37-48	25-75	5-50	18-30	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.28	.32			
	48-60	85-98	0-13	2-6	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
792A:														
Bowes---------------	0-9	0-10	63-82	18-27	1.30-1.50	0.6-2	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	4	6	48
	9-13	0-10	65-85	15-25	1.35-1.50	0.6-2	0.21-0.24	0.0-2.9	0.5-1.0	.43	.43			
	13-43	0-10	55-73	27-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	43-51	30-85	2-50	10-30	1.55-1.75	0.6-6	0.10-0.16	0.0-2.9	0.0-0.5	.28	.32			
	51-61	80-98	0-18	2-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
792B:														
Bowes---------------	0-7	0-10	63-82	18-27	1.30-1.50	0.6-2	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	4	6	48
	7-37	0-10	55-73	27-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	37-43	30-85	2-50	10-30	1.55-1.75	0.6-6	0.10-0.16	0.0-2.9	0.0-0.5	.28	.32			
	43-60	80-98	0-18	2-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
792C2:														
Bowes---------------	0-7	0-10	63-82	18-27	1.30-1.50	0.6-2	0.22-0.25	0.0-2.9	2.0-3.0	.37	.37	4	6	48
	7-35	0-10	55-73	27-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	35-44	30-85	2-50	10-30	1.55-1.75	0.6-6	0.10-0.16	0.0-2.9	0.0-0.5	.28	.32			
	44-60	80-98	0-18	2-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
802B:														
Orthents, loamy-----	0-8	23-52	28-50	22-27	1.70-1.75	0.2-0.6	0.18-0.22	3.0-5.9	0.5-2.0	.43	.43	5	6	48
	8-60	20-52	25-58	22-30	1.70-1.80	0.2-0.6	0.16-0.20	3.0-5.9	0.2-1.0	.43	.43			
802D:														
Orthents, loamy-----	0-6	23-52	28-50	22-27	1.70-1.75	0.2-0.6	0.18-0.22	3.0-5.9	0.5-2.0	.43	.43	5	6	48
	6-60	20-52	25-58	22-30	1.70-1.80	0.2-0.6	0.16-0.20	3.0-5.9	0.2-1.0	.43	.43			
805B:														
Orthents, clayey----	0-6	5-20	35-55	40-60	1.50-1.65	0.0-0.06	0.08-0.14	6.0-9.0	0.5-2.0	.43	.43	5	4	86
	6-60	5-30	15-60	35-60	1.60-1.90	0.0-0.06	0.03-0.10	6.0-9.0	0.2-1.0	.43	.43			
830:														
Landfills.														
864:														
Pits, quarry.														
865:														
Pits, gravel.														

Table 17.--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					
903A:														
Muskego-------------	0-5	---	---	---	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---	1	2	134
	5-36	---	---	---	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---			
	36-80	4-25	40-78	18-35	0.30-1.10	0.06-0.2	0.18-0.24	3.0-5.9	6.0-20	.28	.28			
Houghton------------	0-12	---	---	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	3	2	134
	12-60	---	---	---	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
969E2:														
Casco---------------	0-5	20-50	28-55	10-22	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	5-19	20-80	5-50	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.0-0.5	.28	.32			
	19-60	90-98	0-10	0-2	1.30-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
Rodman--------------	0-6	35-65	10-57	8-25	1.20-1.50	2-6	0.10-0.12	0.0-2.9	2.0-3.0	.20	.24	3	8	0
	6-10	45-80	2-50	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.28	.32			
	10-60	85-98	0-15	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
969F:														
Casco---------------	0-4	20-50	28-55	10-22	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	4-15	20-80	5-50	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.0-0.5	.28	.32			
	15-60	90-98	0-10	0-2	1.30-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
Rodman--------------	0-11	35-65	10-57	8-25	1.20-1.50	2-6	0.10-0.12	0.0-2.9	2.0-4.0	.20	.24	3	8	0
	11-14	45-80	2-50	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.28	.32			
	14-60	85-98	0-15	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
1103A:														
Houghton------------	0-7	---	---	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	3	2	134
	7-60	---	---	---	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
1107A:														
Sawmill-------------	0-17	0-15	50-73	27-35	1.20-1.40	0.6-2	0.21-0.23	3.0-5.9	4.0-5.0	.28	.28	5	7	38
	17-29	0-15	50-73	27-35	1.20-1.40	0.6-2	0.21-0.23	3.0-5.9	1.0-3.0	.28	.28			
	29-48	5-25	45-70	25-35	1.30-1.45	0.6-2	0.17-0.20	3.0-5.9	0.2-2.0	.32	.32			
	48-60	5-35	30-77	18-35	1.35-1.50	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
1210A:														
Lena----------------	0-11	---	---	---	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---	3	2	134
	11-60	---	---	---	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---			
1903A:														
Muskego-------------	0-5	---	0-0	0-0	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---	1	2	134
	5-36	---	0-0	0-0	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---			
	36-80	4-25	40-78	18-35	0.30-1.10	0.06-0.2	0.18-0.24	3.0-5.9	6.0-20	.28	.28			

Table 17.--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					
1903A:														
Houghton------------	0-12	---	0-0	0-0	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	3	2	134
	12-60	---	0-0	0-0	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
3076A:														
Otter---------------	0-27	0-15	58-82	18-27	1.10-1.25	0.6-2	0.22-0.24	0.0-2.9	3.0-7.0	.32	.32	5	6	48
	27-41	0-25	46-82	18-29	1.20-1.45	0.6-2	0.17-0.22	3.0-5.9	1.0-3.0	.49	.49			
	41-65	15-55	17-70	15-28	1.30-1.55	0.6-2	0.15-0.20	0.0-2.9	0.5-2.0	.49	.49			
3082A:														
Millington----------	0-26	5-30	43-75	20-27	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.32	.32	5	4L	86
	26-53	5-35	30-75	20-35	1.40-1.60	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.32	.32			
	53-60	15-60	5-67	18-35	1.50-1.70	0.6-2	0.14-0.20	3.0-5.9	0.1-2.0	.28	.28			
8076A:														
Otter---------------	0-26	0-15	58-82	18-27	1.10-1.25	0.6-2	0.22-0.24	0.0-2.9	3.0-7.0	.32	.32	5	6	48
	26-42	0-25	46-82	18-29	1.20-1.45	0.6-2	0.17-0.22	3.0-5.9	1.0-3.0	.49	.49			
	42-60	15-55	17-70	15-28	1.30-1.55	0.6-2	0.15-0.20	0.0-2.9	0.5-2.0	.49	.49			
8082A:														
Millington----------	0-21	5-30	43-75	20-27	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.32	.32	5	4L	86
	21-49	5-35	30-75	20-35	1.40-1.60	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.32	.32			
	49-62	15-60	5-67	18-35	1.50-1.70	0.6-2	0.14-0.20	3.0-5.9	0.1-2.0	.28	.28			

Table 18.--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
23A:				
Blount	0-7	15-22	5.1-7.3	0
	7-13	9.0-18	5.1-7.3	0
	13-26	21-31	4.5-6.5	0
	26-32	16-30	6.1-7.8	0-25
	32-60	16-25	7.4-8.4	22-35
59A:				
Lisbon	0-11	18-27	5.6-7.3	0
	11-36	16-25	5.6-7.8	0
	36-39	12-22	6.1-8.4	0-20
	39-70	9.0-16	7.4-8.4	15-40
59B:				
Lisbon	0-15	18-27	5.6-7.3	0
	15-33	16-25	5.6-7.8	0
	33-42	12-22	6.1-8.4	0-20
	42-60	9.0-16	7.4-8.4	15-40
60C2:				
La Rose	0-7	14-23	6.1-7.8	0
	7-21	16-23	6.1-7.8	0-20
	21-60	9.0-16	7.4-8.4	15-40
60D2:				
La Rose	0-7	14-23	6.1-7.8	0
	7-20	16-23	6.1-7.8	0-20
	20-60	9.0-16	7.4-8.4	15-40
62A:				
Herbert	0-8	15-24	5.6-7.3	0
	8-12	10-18	5.6-7.3	0
	12-26	15-23	5.6-7.3	0
	26-36	13-22	6.1-8.4	0-20
	36-60	9.0-16	7.4-8.4	10-40
67A:				
Harpster	0-18	24-33	7.4-8.4	10-40
	18-36	17-25	7.4-8.4	5-40
	36-41	14-23	7.4-8.4	5-40
	41-60	9.0-19	7.4-8.4	10-40
69A:				
Milford	0-18	26-36	5.6-7.3	0
	18-50	22-29	5.6-7.8	0-10
	50-60	4.0-18	6.6-8.4	0-30
103A:				
Houghton	0-7	140-200	4.5-7.8	0
	7-60	100-200	4.5-7.8	0
104A:				
Virgil	0-7	13-24	6.1-7.8	0
	7-13	9.0-17	5.1-7.3	0
	13-49	16-23	5.1-7.8	0
	49-58	9.0-19	5.6-7.8	0-10
	58-60	6.0-19	6.1-8.4	0-20

Table 18.--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
125A:				
Selma	0-23	20-28	6.1-7.8	0
	23-53	14-24	6.1-8.4	0-5
	53-60	3.0-11	6.6-8.4	0-20
134C2:				
Camden	0-7	10-20	5.1-7.3	0
	7-34	13-22	5.1-7.3	0
	34-55	11-19	5.1-7.3	0
	55-60	3.0-16	5.1-8.4	0-5
146A:				
Elliott	0-6	22-26	5.6-7.3	0
	6-11	22-29	5.6-7.3	0
	11-41	21-34	5.6-7.8	0-5
	41-60	16-25	7.4-8.4	10-40
146B:				
Elliott	0-9	22-26	5.6-7.3	0
	9-13	22-29	5.6-7.3	0
	13-35	21-34	5.6-7.8	0-5
	35-60	16-25	7.4-8.4	10-40
148B:				
Proctor	0-12	16-24	5.1-7.8	0
	12-29	16-25	5.6-7.3	0
	29-48	11-23	5.6-7.3	0
	48-60	3.0-16	6.1-7.8	0-10
149A:				
Brenton	0-13	18-26	5.6-7.8	0
	13-35	15-23	5.6-7.3	0
	35-43	12-19	5.6-7.8	0-5
	43-60	3.0-19	5.6-8.4	0-20
152A:				
Drummer	0-14	24-35	5.6-7.8	0
	14-41	13-25	5.6-7.8	0
	41-47	9.0-21	6.1-8.4	0-20
	47-60	6.0-20	6.6-8.4	0-40
154A:				
Flanagan	0-18	20-26	5.1-7.3	0
	18-45	21-27	5.6-7.3	0
	45-49	12-22	6.1-7.8	0-5
	49-60	12-19	7.4-8.4	5-25
171A:				
Catlin	0-11	17-24	5.1-7.3	0
	11-44	14-23	5.1-7.3	0
	44-49	12-22	6.1-7.8	0-5
	49-60	12-19	7.4-8.4	5-25
171B:				
Catlin	0-11	17-24	5.1-7.3	0
	11-45	14-23	5.1-7.3	0
	45-57	12-22	6.1-7.8	0-5
	57-70	12-19	7.4-8.4	5-25

Table 18.--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
193A:				
Mayville	0-8	8.0-21	5.1-7.3	0
	8-12	7.0-17	5.1-6.5	0
	12-24	15-22	5.1-6.5	0
	24-31	12-20	5.1-7.8	0-5
	31-60	6.0-16	7.4-8.4	1-30
193B:				
Mayville	0-6	8.0-21	5.1-7.3	0
	6-8	7.0-17	5.1-6.5	0
	8-28	15-22	5.1-6.5	0
	28-32	12-20	5.1-7.8	0-5
	32-60	6.0-16	7.4-8.4	1-30
193C2:				
Mayville	0-6	8.0-19	5.1-7.3	0
	6-24	15-22	5.1-6.5	0
	24-34	12-20	5.1-7.8	0-5
	34-60	6.0-16	7.4-8.4	1-30
198A:				
Elburn	0-13	21-26	5.6-7.8	0
	13-44	16-25	5.6-7.8	0
	44-65	9.0-18	6.1-8.4	0-20
	65-80	1.0-9.0	6.1-8.4	0-20
206A:				
Thorp	0-14	20-28	5.1-7.8	0
	14-19	11-17	5.1-7.3	0
	19-43	14-23	5.1-7.3	0
	43-50	11-19	5.6-7.8	0-5
	50-65	3.0-19	6.1-8.4	0-20
210A:				
Lena	0-10	140-180	7.4-8.4	5-40
	10-60	100-180	7.4-8.4	5-40
219A:				
Millbrook	0-8	15-24	5.1-7.8	0
	8-12	10-18	5.1-7.3	0
	12-26	15-23	5.1-7.3	0
	26-41	11-20	5.1-7.3	0
	41-65	6.0-19	5.6-8.4	0-20
221B:				
Parr	0-11	12-21	5.6-7.3	0
	11-32	11-19	5.6-7.3	0
	32-36	10-14	6.6-8.4	0-20
	36-60	5.0-11	7.4-8.4	5-35
221B2:				
Parr	0-9	10-19	5.6-7.3	0
	9-28	11-19	5.6-7.3	0
	28-36	10-14	6.6-8.4	0-20
	36-60	5.0-11	7.4-8.4	5-35
221C2:				
Parr	0-9	10-19	5.6-7.3	0
	9-29	11-19	5.6-7.3	0
	29-33	10-14	6.6-8.4	0-20
	33-60	5.0-11	7.4-8.4	5-35

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	pH	Pct
223B:				
Varna	0-12	18-24	5.6-7.8	0
	12-48	22-32	5.6-7.8	0-15
	48-60	17-25	6.6-8.4	5-30
223C2:				
Varna	0-9	16-22	5.6-7.8	0
	9-40	22-32	5.6-7.8	0-15
	40-60	17-25	6.6-8.4	5-30
232A:				
Ashkum	0-12	27-38	5.6-7.8	0
	12-29	22-31	6.1-7.8	0-5
	29-60	18-25	6.1-8.4	0-25
233A:				
Birkbeck	0-8	11-22	5.1-7.3	0
	8-11	8.0-17	4.5-7.3	0
	11-46	15-23	4.5-7.3	0
	46-56	12-19	5.6-7.8	0-5
	56-60	10-19	6.6-8.4	0-20
233B:				
Birkbeck	0-4	11-22	5.1-7.3	0
	4-9	8.0-17	4.5-7.3	0
	9-54	15-23	4.5-7.3	0
	54-60	12-19	5.6-7.8	0-5
	60-68	10-19	6.6-8.4	0-20
233C2:				
Birkbeck	0-9	11-20	5.1-7.3	0
	9-42	15-23	4.5-7.3	0
	42-48	12-19	5.6-7.8	0-5
	48-60	10-19	6.6-8.4	0-20
236A:				
Sabina	0-6	14-22	5.1-7.3	0
	6-8	11-17	5.1-7.3	0
	8-40	21-27	4.5-7.3	0
	40-47	12-22	6.6-7.8	0-5
	47-80	9.0-20	7.4-8.4	0-25
242A:				
Kendall	0-7	14-22	5.1-7.3	0
	7-11	11-17	5.1-7.3	0
	11-51	16-22	4.5-7.3	0
	51-58	6.0-19	5.1-7.8	0-15
	58-80	3.0-19	5.6-8.4	0-15
290A:				
Warsaw	0-15	15-25	5.6-7.3	0
	15-31	11-22	5.1-6.5	0
	31-60	1.0-7.0	7.9-8.4	15-35
290B:				
Warsaw	0-11	15-25	5.6-7.3	0
	11-29	11-22	5.1-6.5	0
	29-60	1.0-7.0	7.9-8.4	15-35

Table 18.--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
297B:				
Ringwood	0-12	17-26	5.6-7.3	0
	12-20	14-22	5.6-7.3	0
	20-36	12-20	5.6-8.4	0-20
	36-60	3.0-12	7.4-8.4	15-30
298A:				
Beecher	0-9	16-24	4.5-7.3	0
	9-37	21-32	4.5-7.8	0-10
	37-60	15-28	7.4-8.4	5-30
298B:				
Beecher	0-7	16-24	4.5-7.3	0
	7-36	21-32	4.5-7.8	0-10
	36-60	15-28	7.4-8.4	5-30
318A:				
Lorenzo	0-9	13-22	5.6-7.3	0
	9-24	10-20	5.6-7.8	15-35
	24-60	0.0-4.0	7.4-8.4	15-40
318B:				
Lorenzo	0-8	13-22	5.6-7.3	0
	8-18	10-20	5.6-7.8	15-35
	18-60	0.0-4.0	7.4-8.4	15-40
318C2:				
Lorenzo	0-8	13-20	5.6-7.3	0
	8-15	10-20	5.6-7.8	15-35
	15-60	0.0-4.0	7.4-8.4	15-40
318D2:				
Lorenzo	0-8	13-20	5.6-7.3	0
	8-18	10-20	5.6-7.8	15-35
	18-60	0.0-4.0	7.4-8.4	15-40
323C2:				
Casco	0-6	8.0-16	5.6-7.3	0
	6-18	10-22	5.6-7.8	0-3
	18-60	0.0-3.0	7.4-8.4	1-25
323D2:				
Casco	0-5	8.0-16	5.6-7.3	0
	5-16	10-22	5.6-7.8	0-3
	16-60	0.0-3.0	7.4-8.4	1-25
325A:				
Dresden	0-9	13-22	5.6-7.3	0
	9-29	14-20	5.6-7.3	0
	29-33	10-16	5.6-7.8	0-15
	33-60	0.0-4.0	7.4-8.4	15-40
325B:				
Dresden	0-7	13-22	5.6-7.3	0
	7-27	14-20	5.6-7.3	0
	27-32	10-16	5.6-7.8	0-15
	32-60	0.0-4.0	7.4-8.4	15-40
325C2:				
Dresden	0-7	13-20	5.6-7.3	0
	7-26	14-20	5.6-7.3	0
	26-30	10-16	5.6-7.8	0-15
	30-60	0.0-4.0	7.4-8.4	15-40

Table 18.--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
327A:				
Fox	0-10	8.0-20	5.1-7.3	0
	10-21	11-22	5.1-6.5	0
	21-33	10-22	5.6-7.8	0-30
	33-60	0.0-3.0	7.4-8.4	5-45
327B:				
Fox	0-7	8.0-20	5.1-7.3	0
	7-11	11-22	5.1-6.5	0
	11-32	10-22	5.6-7.8	0-30
	32-60	0.0-3.0	7.4-8.4	5-45
327C2:				
Fox	0-9	8.0-18	5.1-7.3	0
	9-21	11-22	5.1-6.5	0
	21-34	10-22	5.6-7.8	0-30
	34-60	0.0-3.0	7.4-8.4	5-45
327D2:				
Fox	0-8	8.0-18	5.1-7.3	0
	8-28	10-22	5.6-7.8	0-30
	28-60	0.0-3.0	7.4-8.4	5-45
329A:				
Will	0-14	22-28	5.6-7.3	0
	14-28	14-24	6.1-8.4	0-20
	28-60	0.0-8.0	7.4-8.4	15-35
330A:				
Peotone	0-13	30-38	5.6-7.8	0
	13-50	22-33	6.1-7.8	0
	50-60	15-26	6.6-8.4	0-15
343A:				
Kane	0-12	17-28	5.6-7.8	0
	12-22	17-23	5.6-7.3	0
	22-29	9.0-19	6.1-7.8	0-15
	29-60	0.0-7.0	7.9-8.4	15-40
344C2:				
Harvard	0-7	16-22	5.1-7.8	0
	7-32	15-23	5.1-7.3	0
	32-40	9.0-22	5.6-7.8	0-5
	40-60	3.0-19	5.1-8.4	0-20
348B:				
Wingate	0-9	13-24	5.6-7.3	0
	9-12	10-20	5.1-7.3	0
	12-27	15-25	5.1-7.3	0
	27-52	12-19	5.1-7.8	0-5
	52-60	9.0-17	6.6-8.4	0-20
348C2:				
Wingate	0-7	13-22	5.6-7.3	0
	7-25	15-25	5.1-7.3	0
	25-46	12-19	5.1-7.8	0-5
	46-60	9.0-17	6.6-8.4	0-20
356A:				
Elpaso	0-21	26-35	5.6-7.3	0
	21-44	14-25	6.1-7.3	0
	44-69	9.0-25	6.6-7.8	0-10
	69-80	9.0-20	6.6-8.4	0-30

Table 18.--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
361B:				
Kidder	0-9	7.0-19	6.1-7.8	0
	9-31	10-17	5.6-7.8	0-15
	31-60	3.0-9.0	7.4-8.4	10-30
361C2:				
Kidder	0-8	7.0-17	6.1-7.8	0
	8-30	10-17	5.6-7.8	0-15
	30-60	3.0-9.0	7.4-8.4	10-30
361D2:				
Kidder	0-7	7.0-17	6.1-7.8	0
	7-23	10-17	5.6-7.8	0-15
	23-60	3.0-9.0	7.4-8.4	10-30
361E2:				
Kidder	0-8	7.0-17	6.1-7.8	0
	8-29	10-17	5.6-7.8	0-15
	29-60	3.0-9.0	7.4-8.4	10-30
369A:				
Waupecan	0-13	17-26	6.1-7.8	0
	13-38	16-23	5.6-7.3	0
	38-55	6.0-16	5.6-7.3	0
	55-70	0.0-8.0	6.6-8.4	0-20
369B:				
Waupecan	0-11	17-26	6.1-7.8	0
	11-38	16-23	5.6-7.3	0
	38-55	6.0-16	5.6-7.3	0
	55-60	0.0-8.0	6.6-8.4	0-20
442A:				
Mundelein	0-17	18-26	5.6-7.3	0
	17-31	16-25	5.6-7.8	0-10
	31-42	9.0-19	6.1-7.8	0-20
	42-60	3.0-15	7.4-8.4	5-30
488A:				
Hooppole	0-17	20-30	7.4-8.4	5-30
	17-44	16-25	7.4-8.4	12-30
	44-60	1.0-8.0	7.4-8.4	10-30
512A:				
Danabrook	0-19	19-26	5.6-7.3	0
	19-34	15-25	5.1-7.3	0
	34-53	12-21	5.6-7.8	0-20
	53-60	9.0-13	7.4-8.4	15-40
512B:				
Danabrook	0-13	19-26	5.6-7.3	0
	13-33	15-25	5.1-7.3	0
	33-50	12-21	5.6-7.8	0-20
	50-60	9.0-13	7.4-8.4	15-40
512C2:				
Danabrook	0-8	17-24	5.6-7.3	0
	8-27	15-25	5.1-7.3	0
	27-40	12-21	5.6-7.8	0-20
	40-65	9.0-13	7.4-8.4	15-40

Table 18.--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
523A:				
Dunham	0-12	25-34	5.6-7.3	0
	12-35	16-26	5.6-7.3	0
	35-44	6.0-19	6.1-7.8	0-20
	44-60	1.0-7.0	7.4-8.4	15-40
526A:				
Grundelein	0-11	19-30	5.6-7.3	0
	11-33	16-26	5.6-7.3	0
	33-39	6.0-19	6.1-7.8	0-20
	39-60	1.0-7.0	7.4-8.4	15-40
527B:				
Kidami	0-3	7.0-18	5.1-7.3	0
	3-10	6.0-14	5.1-7.3	0
	10-37	10-19	5.1-7.3	0
	37-45	8.0-15	6.1-8.4	0-30
	45-60	7.0-11	7.4-8.4	25-40
527C2:				
Kidami	0-9	7.0-16	5.1-7.3	0
	9-30	10-19	5.1-7.3	0
	30-40	8.0-15	6.1-8.4	0-30
	40-60	7.0-11	7.4-8.4	25-40
527D2:				
Kidami	0-10	7.0-16	5.1-7.3	0
	10-27	10-19	5.1-7.3	0
	27-35	8.0-15	6.1-8.4	0-30
	35-60	7.0-11	7.4-8.4	25-40
527D3:				
Kidami	0-5	14-19	5.1-7.3	0
	5-22	10-19	5.1-7.3	0
	22-27	8.0-15	6.1-8.4	0-30
	27-60	7.0-11	7.4-8.4	25-40
529A:				
Selmass	0-15	19-27	5.6-7.3	0
	15-42	13-22	5.6-7.3	0
	42-47	6.0-13	6.1-7.8	0-10
	47-60	1.0-7.0	6.6-8.4	0-20
530B:				
Ozaukee	0-4	11-22	6.1-7.3	0
	4-10	9.0-18	5.6-7.3	0
	10-39	21-31	6.1-8.4	0-20
	39-60	16-22	7.9-8.4	10-40
530C2:				
Ozaukee	0-6	11-20	6.1-7.3	0
	6-28	21-31	6.1-8.4	0-20
	28-60	16-22	7.9-8.4	10-40
530D2:				
Ozaukee	0-6	11-20	6.1-7.3	0
	6-28	21-31	6.1-8.4	0-20
	28-60	16-22	7.9-8.4	10-40

Table 18.--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
530E:				
Ozaukee	0-4	11-22	6.1-7.3	0
	4-8	9.0-18	5.6-7.3	0
	8-25	21-31	6.1-8.4	0-20
	25-60	16-22	7.9-8.4	10-40
531B:				
Markham	0-8	17-24	5.6-6.5	0
	8-32	21-29	5.1-7.8	0-10
	32-60	16-24	7.4-8.4	5-30
531C2:				
Markham	0-8	17-22	5.6-6.5	0
	8-29	21-29	5.1-7.8	0-10
	29-60	16-24	7.4-8.4	5-30
541B:				
Graymont	0-12	21-26	6.1-7.3	0
	12-33	15-25	5.6-7.3	0
	33-38	13-25	6.6-7.8	0-10
	38-60	14-22	7.4-8.4	5-30
570B:				
Martinsville	0-5	7.0-16	5.1-7.3	0
	5-12	4.0-11	5.1-7.3	0
	12-38	10-18	5.1-7.3	0
	38-53	8.0-13	5.1-7.8	0
	53-60	3.0-10	6.1-8.4	0-45
570C2:				
Martinsville	0-9	7.0-14	5.1-7.3	0
	9-42	10-18	5.1-7.3	0
	42-59	8.0-13	5.1-7.8	0
	59-70	3.0-10	6.1-8.4	0-45
614A:				
Chenoa	0-12	24-29	5.6-7.3	0
	12-32	19-29	5.6-7.3	0
	32-36	15-25	6.1-7.8	0-10
	36-60	14-25	7.4-8.4	5-40
618E:				
Senachwine	0-4	7.0-17	5.6-7.3	0
	4-9	5.0-12	5.6-7.3	0
	9-31	13-19	5.1-7.3	0
	31-40	10-15	6.6-7.8	0-20
	40-60	7.0-14	7.4-8.4	25-45
618F:				
Senachwine	0-4	7.0-17	5.6-7.3	0
	4-11	5.0-12	5.6-7.3	0
	11-23	13-19	5.1-7.3	0
	23-27	10-15	6.6-7.8	0-20
	27-60	7.0-14	7.4-8.4	25-45
626A:				
Kish	0-11	20-28	7.4-8.4	5-15
	11-47	11-23	7.4-8.4	10-20
	47-60	7.0-20	7.4-8.4	25-40

Table 18.--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
656B:				
Octagon	0-7	11-22	5.6-7.3	0
	7-30	12-19	5.6-7.3	0
	30-60	5.0-11	7.4-8.4	10-35
656C2:				
Octagon	0-7	11-20	5.6-7.3	0
	7-29	12-19	5.6-7.3	0
	29-60	5.0-11	7.4-8.4	10-35
656D2:				
Octagon	0-7	11-20	5.6-7.3	0
	7-28	12-19	5.6-7.3	0
	28-60	5.0-11	7.4-8.4	10-35
662A:				
Barony	0-9	13-24	5.1-7.8	0
	9-13	10-18	5.1-7.3	0
	13-26	16-23	5.1-7.3	0
	26-57	9.0-22	5.6-7.8	0-5
	57-80	3.0-10	5.6-8.4	0-20
662B:				
Barony	0-8	13-24	5.1-7.8	0
	8-34	16-23	5.1-7.3	0
	34-54	9.0-22	5.6-7.8	0-5
	54-85	3.0-10	5.6-8.4	0-20
663A:				
Clare	0-11	17-26	5.6-7.8	0
	11-32	16-25	5.1-7.3	0
	32-61	11-21	5.6-7.8	0-5
	61-80	3.0-13	6.1-8.4	0-20
663B:				
Clare	0-14	17-26	5.6-7.8	0
	14-36	16-25	5.1-7.3	0
	36-50	11-21	5.6-7.8	0-5
	50-66	3.0-13	6.1-8.4	0-20
667A:				
Kaneville	0-8	13-24	5.6-7.3	0
	8-42	17-22	5.6-7.8	0
	42-56	9.0-20	6.1-8.4	0-10
	56-80	6.0-18	6.1-8.4	0-20
667B:				
Kaneville	0-9	13-24	5.6-7.3	0
	9-44	17-22	5.6-7.8	0
	44-52	9.0-20	6.1-8.4	0-10
	52-80	6.0-18	6.1-8.4	0-20
668A:				
Somonauk	0-4	10-22	5.1-7.3	0
	4-9	9.0-18	5.1-7.3	0
	9-34	13-23	5.1-7.3	0
	34-70	9.0-20	5.1-7.8	0-5
	70-80	3.0-13	6.1-8.4	0-20

Table 18.--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
668B:				
Somonauk-------------	0-9	10-22	5.1-7.3	0
	9-26	13-23	5.1-7.3	0
	26-55	9.0-20	5.1-7.8	0-5
	55-60	3.0-13	6.1-8.4	0-20
679A:				
Blackberry-----------	0-11	17-26	6.1-7.3	0
	11-52	15-23	5.1-7.3	0
	52-68	9.0-22	5.6-8.4	0-20
	68-80	3.0-19	5.6-8.4	0-20
679B:				
Blackberry-----------	0-16	17-26	6.1-7.3	0
	16-47	15-23	5.1-7.3	0
	47-62	9.0-22	5.6-8.4	0-20
	62-70	3.0-19	5.6-8.4	0-20
680A:				
Campton--------------	0-6	14-22	5.1-7.8	0
	6-50	15-23	4.5-7.3	0
	50-61	9.0-19	5.1-7.8	0-5
	61-73	3.0-16	5.1-7.8	0-20
680B:				
Campton--------------	0-8	14-22	5.1-7.8	0
	8-45	15-23	4.5-7.3	0
	45-51	9.0-19	5.1-7.8	0-5
	51-80	3.0-16	5.1-7.8	0-20
696B:				
Zurich---------------	0-5	13-22	5.6-7.3	0
	5-9	9.0-20	5.6-7.3	0
	9-28	15-22	5.1-7.8	0-5
	28-38	11-16	6.6-7.8	0-20
	38-60	3.0-12	7.4-8.4	5-30
697A:				
Wauconda-------------	0-9	13-24	5.6-7.3	0
	9-14	9.0-20	5.6-7.3	0
	14-30	16-23	5.6-7.8	0-5
	30-38	9.0-19	6.6-8.4	0-20
	38-60	3.0-13	7.4-8.4	5-30
739B:				
Milton---------------	0-6	9.0-19	5.1-7.3	0
	6-13	7.0-15	4.5-7.3	0
	13-27	14-25	4.5-7.8	0
	27-31	15-26	6.1-7.8	0-20
	31-60	---	---	---
739D:				
Milton---------------	0-5	9.0-19	5.1-7.3	0
	5-11	7.0-15	4.5-7.3	0
	11-21	14-25	4.5-7.8	0
	21-24	15-26	6.1-7.8	0-20
	24-60	---	---	---

Table 18.--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
791A:				
Rush	0-4	9.0-22	5.1-7.3	0
	4-11	8.0-18	5.1-7.3	0
	11-38	15-23	4.5-6.5	0
	38-45	9.0-20	4.5-7.3	0
	45-60	1.0-5.0	7.4-8.4	10-35
791B:				
Rush	0-7	9.0-22	5.1-7.3	0
	7-35	15-23	4.5-6.5	0
	35-46	9.0-20	4.5-7.3	0
	46-60	1.0-5.0	7.4-8.4	10-35
791C2:				
Rush	0-7	9.0-20	5.1-7.3	0
	7-37	15-23	4.5-6.5	0
	37-48	9.0-20	4.5-7.3	0
	48-60	1.0-5.0	7.4-8.4	10-35
792A:				
Bowes	0-9	16-24	5.1-7.3	0
	9-13	9.0-20	5.1-7.3	0
	13-43	16-23	5.1-6.5	0
	43-51	6.0-18	5.1-8.4	0-10
	51-61	2.0-7.0	7.4-8.4	10-40
792B:				
Bowes	0-7	16-24	5.1-7.3	0
	7-37	16-23	5.1-6.5	0
	37-43	6.0-18	5.1-8.4	0-10
	43-60	2.0-7.0	7.4-8.4	10-40
792C2:				
Bowes	0-7	16-22	5.1-7.3	0
	7-35	16-23	5.1-6.5	0
	35-44	6.0-18	5.1-8.4	0-10
	44-60	2.0-7.0	7.4-8.4	10-40
802B:				
Orthents, loamy	0-8	10-25	5.6-7.8	0-10
	8-60	10-20	5.6-8.4	0-20
802D:				
Orthents, loamy	0-6	10-25	5.6-7.8	0-10
	6-60	10-20	5.6-8.4	0-20
805B:				
Orthents, clayey	0-6	22-38	5.6-7.8	0-10
	6-60	15-35	6.1-8.4	0-25
830:				
Landfills.				
864:				
Pits, quarry.				
865:				
Pits, gravel.				
903A:				
Muskego	0-5	140-180	5.6-7.3	0
	5-36	150-190	5.6-7.3	0
	36-80	10-45	6.6-8.4	0-60

Table 18.--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
903A:				
Houghton	0-12	140-200	4.5-7.8	0
	12-60	100-200	4.5-7.8	0
969E2:				
Casco	0-5	8.0-16	5.6-7.3	0
	5-19	10-22	5.6-7.8	0-3
	19-60	0.0-3.0	7.4-8.4	1-25
Rodman	0-6	8.0-21	6.6-7.8	0-15
	6-10	2.0-17	6.6-7.8	0-25
	10-60	0.0-7.0	7.4-8.4	10-45
969F:				
Casco	0-4	8.0-18	5.6-7.3	0
	4-15	10-22	5.6-7.8	0-3
	15-60	0.0-3.0	7.4-8.4	1-25
Rodman	0-11	8.0-23	6.6-7.8	0-15
	11-14	2.0-17	6.6-7.8	0-25
	14-60	0.0-7.0	7.4-8.4	10-45
1103A:				
Houghton	0-7	140-200	4.5-7.8	0
	7-60	100-200	4.5-7.8	0
1107A:				
Sawmill	0-17	24-31	6.1-7.8	0
	17-29	18-27	6.1-7.8	0
	29-48	17-25	6.1-7.8	0-10
	48-60	11-23	6.1-8.4	0-30
1210A:				
Lena	0-11	140-180	7.4-8.4	5-40
	11-60	100-180	7.4-8.4	5-40
1903A:				
Muskego	0-5	140-180	5.6-7.3	0
	5-36	150-190	5.6-7.3	0
	36-80	10-45	6.6-8.4	0-60
Houghton	0-12	140-200	4.5-7.8	0
	12-60	100-200	4.5-7.8	0
3076A:				
Otter	0-27	16-30	6.1-7.8	0
	27-41	12-23	6.1-7.8	0
	41-65	10-21	6.1-8.4	0-10
3082A:				
Millington	0-26	20-28	7.4-8.4	5-20
	26-53	14-27	7.4-8.4	5-30
	53-60	11-25	7.4-8.4	10-30
8076A:				
Otter	0-26	16-30	6.1-7.8	0
	26-42	12-23	6.1-7.8	0
	42-60	10-21	6.1-8.4	0-10

Table 18.--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
8082A:				
Millington-----------	0-21	20-28	7.4-8.4	5-20
	21-49	14-27	7.4-8.4	5-30
	49-62	11-25	7.4-8.4	10-30

Table 19.--Water 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	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
23A:										
Blount	C	Jan-May	0.5-2.0	2.0-4.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
59A:										
Lisbon	B	Jan-May	1.0-2.0	2.0-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
59B:										
Lisbon	B	Jan-May	1.0-2.0	2.0-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
60C2:										
La Rose	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
60D2:										
La Rose	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
62A:										
Herbert	B	Jan-May	0.5-2.0	2.0-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
67A:										
Harpster	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
69A:										
Milford	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
103A:										
Houghton	A	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
104A:										
Virgil	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
125A:										
Selma	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
134C2:										
Camden	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
146A:										
Elliott	C	Jan-May	1.0-2.0	2.0-4.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
146B:										
Elliott	C	Jan-May	1.0-2.0	2.0-4.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
148B:										
Proctor	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
149A:										
Brenton	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
152A:										
Drummer	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
154A:										
Flanagan	B	Jan-May	1.0-2.0	3.5-6.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
171A:										
Catlin	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
171B:										
Catlin	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
193A:										
Mayville	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
193B:										
Mayville	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
193C2:										
Mayville	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
198A:										
Elburn	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
206A:										
Thorp	C	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
210A:										
Lena	A	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
219A:										
Millbrook	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
221B:										
Parr	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
221B2:										
Parr	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
221C2:										
Parr	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
223B:										
Varna	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
223C2:										
Varna	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
232A:										
Ashkum	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
233A:										
Birkbeck	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-6.6	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
233B:										
Birkbeck	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-6.6	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
233C2:										
Birkbeck	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-6.6	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
236A:										
Sabina	C	Jan-May	0.5-2.0	3.5-5.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
242A:										
Kendall	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
290A:										
Warsaw	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
290B:										
Warsaw	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
297B:										
Ringwood	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
298A:										
Beecher	C	Jan-May	0.5-2.0	2.0-4.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
298B:										
Beecher	C	Jan-May	0.5-2.0	2.0-4.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
318A:										
Lorenzo	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
318B:										
Lorenzo	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
318C2:										
Lorenzo	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
318D2:										
Lorenzo	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
323C2:										
Casco	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
323D2:										
Casco	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
325A:										
Dresden	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
325B:										
Dresden	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
325C2:										
Dresden	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
327A:										
Fox	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
327B:										
Fox	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
327C2:										
Fox	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
327D2:										
Fox	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
329A:										
Will	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
330A:										
Peotone	B	Jan-Jun	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
343A:										
Kane	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
344C2:										
Harvard	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
348B:										
Wingate	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
348C2:										
Wingate	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
356A:										
Elpaso	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
361B:										
Kidder	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
361C2:										
Kidder	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
361D2:										
Kidder	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
361E2:										
Kidder	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
369A:										
Waupecan	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
369B:										
Waupecan	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
442A:										
Mundelein	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
488A:										
Hooppole	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
512A:										
Danabrook	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
512B:										
Danabrook	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
512C2:										
Danabrook	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
523A:										
Dunham	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
526A:										
Grundelein	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
527B:										
Kidami	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
527C2:										
Kidami----------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
527D2:										
Kidami----------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
527D3:										
Kidami----------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
529A:										
Selmass---------------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	Frequent--	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
530B:										
Ozaukee---------------	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
530C2:										
Ozaukee---------------	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
530D2:										
Ozaukee---------------	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
530E:										
Ozaukee---------------	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.5	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
531B:										
Markham---------------	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
531C2:										
Markham---------------	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
541B:										
Graymont--------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
570B:										
Martinsville----------	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
570C2:										
Martinsville----------	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
614A:										
Chenoa----------------	B	Jan-May	1.0-2.0	2.0-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
618E:										
Senachwine------------	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
618F:										
Senachwine------------	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
626A:										
Kish------------------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	Frequent--	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
656B:										
Octagon---------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
656C2:										
Octagon---------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
656D2:										
Octagon---------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-4.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
662A:										
Barony----------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
662B:										
Barony----------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
663A:										
Clare-----------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
663B:										
Clare-----------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
667A:										
Kaneville-------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
667B:										
Kaneville-------------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
668A:										
Somonauk	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
668B:										
Somonauk	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
679A:										
Blackberry	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
679B:										
Blackberry	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
680A:										
Campton	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
680B:										
Campton	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
696B:										
Zurich	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
697A:										
Wauconda	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
739B:										
Milton	C	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
739D:										
Milton	C	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
791A:										
Rush	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
791B:										
Rush	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
791C2:										
Rush	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
792A:										
Bowes	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
792B:										
Bowes	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
792C2:										
Bowes	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
802B:										
Orthents, loamy-------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	3.5-5.0	5.0-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
802D:										
Orthents, loamy-------	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	3.5-5.0	5.0-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
805B:										
Orthents, clayey------	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
830:										
Landfills.										
864:										
Pits, quarry.										
865:										
Pits, gravel.										
903A:										
Muskego---------------	A	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief-----	Frequent--	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief-----	Frequent--	---	None
		Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
Houghton--------------	A	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief-----	Frequent--	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief-----	Frequent--	---	None
		Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
969E2:										
Casco-----------------	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
Rodman----------------	A	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
969F:										
Casco-----------------	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
Rodman----------------	A	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
1103A:										
Houghton--------------	D	Jan-Apr	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent--	---	None
		May-Jun	0.0-0.5	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		Jul-Oct	0.0-0.5	>6.0	Apparent	0.0-1.0	Brief-----	Frequent--	---	None
		Nov	0.0-0.5	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		Dec	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent--	---	None
1107A:										
Sawmill---------------	D	Jan-May	0.0-0.5	>6.0	Apparent	0.0-0.5	Long------	Frequent--	Long------	Frequent
		Jun	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief-----	Frequent--	Long------	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief-----	Frequent--	Long------	Frequent
		Dec	0.0-0.5	>6.0	Apparent	0.0-0.5	Long------	Frequent--	Long------	Frequent

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
1210A:										
Lena------------------	D	Jan-Apr	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent--	---	None
		May-Jun	0.0-0.5	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		Jul-Oct	0.0-0.5	>6.0	Apparent	0.0-1.0	Brief-----	Frequent--	---	None
		Nov	0.0-0.5	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		Dec	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent--	---	None
1903A:										
Muskego---------------	D	Jan-Apr	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent--	---	None
		May-Jun	0.0-0.5	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		Jul-Oct	0.0-0.5	>6.0	Apparent	0.0-1.0	Brief-----	Frequent--	---	None
		Nov	0.0-0.5	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		Dec	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent--	---	None
Houghton--------------	D	Jan-Apr	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent--	---	None
		May-Jun	0.0-0.5	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		Jul-Oct	0.0-0.5	>6.0	Apparent	0.0-1.0	Brief-----	Frequent--	---	None
		Nov	0.0-0.5	>6.0	Apparent	0.0-1.0	Long------	Frequent--	---	None
		Dec	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent--	---	None
3076A:										
Otter-----------------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	Frequent--	Brief-----	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief-----	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief-----	Frequent
3082A:										
Millington------------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	Frequent--	Brief-----	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief-----	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief-----	Frequent
8076A:										
Otter-----------------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	Frequent--	Brief-----	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief-----	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief-----	Occasional
8082A:										
Millington------------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	Frequent--	Brief-----	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief-----	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief-----	Occasional

Table 20.--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	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
23A:							
Blount	Dense material	30-48	0	---	High	High	High
59A:							
Lisbon	---	---	0	---	High	High	Moderate
59B:							
Lisbon	---	---	0	---	High	High	Moderate
60C2:							
La Rose	---	---	0	---	Moderate	Moderate	Low
60D2:							
La Rose	---	---	0	---	Moderate	Moderate	Low
62A:							
Herbert	---	---	0	---	High	High	Moderate
67A:							
Harpster	---	---	0	---	High	High	Low
69A:							
Milford	---	---	0	---	High	High	Low
103A:							
Houghton	---	---	6-18	55-60	High	High	High
104A:							
Virgil	---	---	0	---	High	High	Moderate
125A:							
Selma	---	---	0	---	High	High	Low
134C2:							
Camden	---	---	0	---	High	Moderate	Moderate
146A:							
Elliott	Dense material	20-45	0	---	Moderate	High	Moderate
146B:							
Elliott	Dense material	20-45	0	---	Moderate	High	Moderate
148B:							
Proctor	---	---	0	---	High	Moderate	Moderate
149A:							
Brenton	---	---	0	---	High	High	Moderate
152A:							
Drummer	---	---	0	---	High	High	Moderate
154A:							
Flanagan	---	---	0	---	Moderate	High	Moderate
171A:							
Catlin	---	---	0	---	High	High	Moderate
171B:							
Catlin	---	---	0	---	High	High	Moderate

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In	In			
193A:							
Mayville	---	---	0	---	High	High	Moderate
193B:							
Mayville	---	---	0	---	High	High	Moderate
193C2:							
Mayville	---	---	0	---	High	High	Moderate
198A:							
Elburn	---	---	0	---	High	High	Moderate
206A:							
Thorp	---	---	0	---	High	High	Moderate
210A:							
Lena	---	---	5-15	50-90	High	High	Low
219A:							
Millbrook	---	---	0	---	High	High	Moderate
221B:							
Parr	---	---	0	---	Moderate	High	Moderate
221B2:							
Parr	---	---	0	---	Moderate	High	Moderate
221C2:							
Parr	---	---	0	---	Moderate	High	Moderate
223B:							
Varna	Dense material	24-60	0	---	Moderate	High	Moderate
223C2:							
Varna	Dense material	24-60	0	---	Moderate	High	Moderate
232A:							
Ashkum	---	---	0	---	High	High	Moderate
233A:							
Birkbeck	---	---	0	---	High	High	High
233B:							
Birkbeck	---	---	0	---	High	High	High
233C2:							
Birkbeck	---	---	0	---	High	High	High
236A:							
Sabina	---	---	0	---	High	High	High
242A:							
Kendall	---	---	0	---	High	High	High
290A:							
Warsaw	---	---	0	---	Moderate	Moderate	Moderate
290B:							
Warsaw	---	---	0	---	Moderate	Moderate	Moderate
297B:							
Ringwood	---	---	0	---	Moderate	Moderate	Moderate

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In	In			
298A:							
Beecher	Dense material	24-45	0	---	High	High	High
298B:							
Beecher	Dense material	24-45	0	---	High	High	High
318A:							
Lorenzo	---	---	0	---	Moderate	Moderate	Moderate
318B:							
Lorenzo	---	---	0	---	Moderate	Moderate	Moderate
318C2:							
Lorenzo	---	---	0	---	Moderate	Moderate	Moderate
318D2:							
Lorenzo	---	---	0	---	Moderate	Moderate	Moderate
323C2:							
Casco	---	---	0	---	Moderate	Moderate	Moderate
323D2:							
Casco	---	---	0	---	Moderate	Moderate	Moderate
325A:							
Dresden	---	---	0	---	Moderate	Moderate	Moderate
325B:							
Dresden	---	---	0	---	Moderate	Moderate	Moderate
325C2:							
Dresden	---	---	0	---	Moderate	Moderate	Moderate
327A:							
Fox	---	---	0	---	Moderate	Moderate	Moderate
327B:							
Fox	---	---	0	---	Moderate	Moderate	Moderate
327C2:							
Fox	---	---	0	---	Moderate	Moderate	Moderate
327D2:							
Fox	---	---	0	---	Moderate	Moderate	Moderate
329A:							
Will	---	---	0	---	High	High	Moderate
330A:							
Peotone	---	---	0	---	High	High	Moderate
343A:							
Kane	---	---	0	---	High	High	Moderate
344C2:							
Harvard	---	---	0	---	High	Moderate	Moderate
348B:							
Wingate	---	---	0	---	High	High	Moderate
348C2:							
Wingate	---	---	0	---	High	High	Moderate

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
356A:							
Elpaso	---	---	0	---	High	High	Moderate
361B:							
Kidder	---	---	0	---	Moderate	Moderate	Moderate
361C2:							
Kidder	---	---	0	---	Moderate	Moderate	Moderate
361D2:							
Kidder	---	---	0	---	Moderate	Moderate	Moderate
361E2:							
Kidder	---	---	0	---	Moderate	Moderate	Moderate
369A:							
Waupecan	---	---	0	---	High	Moderate	Moderate
369B:							
Waupecan	---	---	0	---	High	Moderate	Moderate
442A:							
Mundelein	---	---	0	---	High	High	Moderate
488A:							
Hooppole	---	---	0	---	High	High	Low
512A:							
Danabrook	---	---	0	---	High	High	Moderate
512B:							
Danabrook	---	---	0	---	High	High	Moderate
512C2:							
Danabrook	---	---	0	---	High	High	Moderate
523A:							
Dunham	---	---	0	---	High	High	Moderate
526A:							
Grundelein	---	---	0	---	High	High	Moderate
527B:							
Kidami	---	---	0	---	Moderate	High	Moderate
527C2:							
Kidami	---	---	0	---	Moderate	High	Moderate
527D2:							
Kidami	---	---	0	---	Moderate	High	Moderate
527D3:							
Kidami	---	---	0	---	Moderate	High	Moderate
529A:							
Selmass	---	---	0	---	High	High	Moderate
530B:							
Ozaukee	Dense material	20-45	0	---	Moderate	High	Low
530C2:							
Ozaukee	Dense material	20-45	0	---	Moderate	High	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
530D2:							
Ozaukee----------------	Dense material	20-45	0	---	Moderate	High	Low
530E:							
Ozaukee----------------	Dense material	20-45	0	---	Moderate	High	Low
531B:							
Markham----------------	Dense material	20-55	0	---	Moderate	High	Moderate
531C2:							
Markham----------------	Dense material	20-55	0	---	Moderate	High	Moderate
541B:							
Graymont---------------	---	---	0	---	High	High	Moderate
570B:							
Martinsville-----------	---	---	0	---	Moderate	Moderate	Moderate
570C2:							
Martinsville-----------	---	---	0	---	Moderate	Moderate	Moderate
614A:							
Chenoa-----------------	---	---	0	---	Moderate	High	Moderate
618E:							
Senachwine-------------	---	---	0	---	Moderate	Moderate	Moderate
618F:							
Senachwine-------------	---	---	0	---	Moderate	Moderate	Moderate
626A:							
Kish-------------------	---	---	0	---	High	High	Low
656B:							
Octagon----------------	---	---	0	---	Moderate	High	Moderate
656C2:							
Octagon----------------	---	---	0	---	Moderate	High	Moderate
656D2:							
Octagon----------------	---	---	0	---	Moderate	High	Moderate
662A:							
Barony-----------------	---	---	0	---	High	High	Moderate
662B:							
Barony-----------------	---	---	0	---	High	High	Moderate
663A:							
Clare------------------	---	---	0	---	High	High	Moderate
663B:							
Clare------------------	---	---	0	---	High	High	Moderate
667A:							
Kaneville--------------	---	---	0	---	High	High	Moderate
667B:							
Kaneville--------------	---	---	0	---	High	High	Moderate
668A:							
Somonauk---------------	---	---	0	---	High	High	Moderate

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
668B:							
Somonauk	---	---	0	---	High	High	Moderate
679A:							
Blackberry	---	---	0	---	High	High	Moderate
679B:							
Blackberry	---	---	0	---	High	High	Moderate
680A:							
Campton	---	---	0	---	High	High	High
680B:							
Campton	---	---	0	---	High	High	High
696B:							
Zurich	---	---	0	---	High	High	Moderate
697A:							
Wauconda	---	---	0	---	High	High	Moderate
739B:							
Milton	Bedrock (lithic)	20-40	---	---	Moderate	High	High
739D:							
Milton	Bedrock (lithic)	20-40	---	---	Moderate	High	High
791A:							
Rush	---	---	0	---	High	Moderate	High
791B:							
Rush	---	---	0	---	High	Moderate	High
791C2:							
Rush	---	---	0	---	High	Moderate	High
792A:							
Bowes	---	---	0	---	High	Moderate	Moderate
792B:							
Bowes	---	---	0	---	High	Moderate	Moderate
792C2:							
Bowes	---	---	0	---	High	Moderate	Moderate
802B:							
Orthents, loamy	---	---	0	---	Moderate	Moderate	Moderate
802D:							
Orthents, loamy	---	---	0	---	Moderate	Moderate	Moderate
805B:							
Orthents, clayey	---	---	0	---	Moderate	High	Moderate
830:							
Landfills.							
864:							
Pits, quarry.							
865:							
Pits, gravel.							

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
903A:							
Muskego	---	---	0	35-45	High	High	Moderate
Houghton	---	---	6-18	55-60	High	High	High
969E2:							
Casco	---	---	0	---	Moderate	Moderate	Moderate
Rodman	---	---	0	---	Low	Low	Low
969F:							
Casco	---	---	0	---	Moderate	Moderate	Moderate
Rodman	---	---	0	---	Low	Low	Low
1103A:							
Houghton	---	---	6-18	55-60	High	High	Moderate
1107A:							
Sawmill	---	---	0	---	High	High	Low
1210A:							
Lena	---	---	5-15	50-90	High	High	Low
1903A:							
Muskego	---	---	0	35-45	High	High	Moderate
Houghton	---	---	6-18	55-60	High	High	High
3076A:							
Otter	---	---	0	---	High	High	Low
3082A:							
Millington	---	---	0	---	High	High	Low
8076A:							
Otter	---	---	0	---	High	High	Low
8082A:							
Millington	---	---	0	---	High	High	Low

Table 21.--Classification of the Soils

(An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

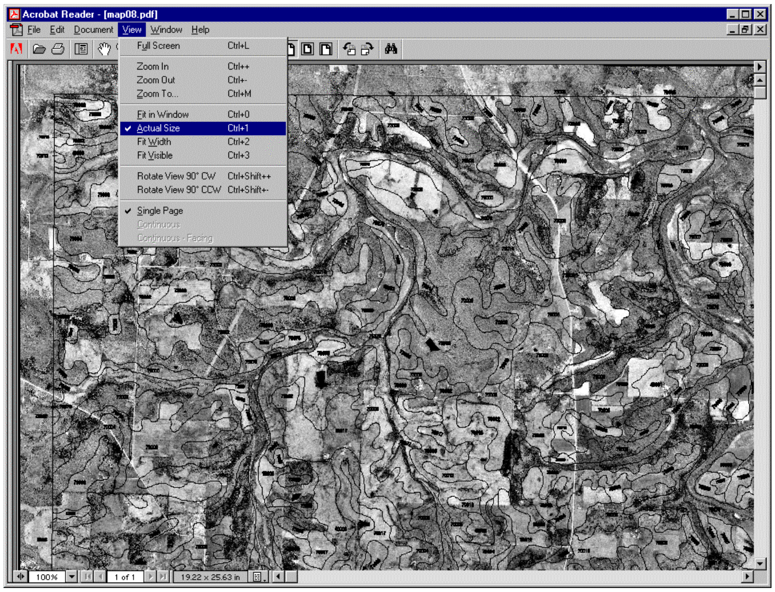
Soil name	Family or higher taxonomic class
Ashkum	Fine, mixed, superactive, mesic Typic Endoaquolls
Barony	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Beecher	Fine, illitic, mesic Udollic Epiaqualfs
Birkbeck	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Blackberry	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Blount	Fine, illitic, mesic Aeric Epiaqualfs
Bowes	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Brenton	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Camden	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Campton	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Casco	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Inceptic Hapludalfs
Catlin	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Chenoa	Fine, illitic, mesic Aquic Argiudolls
Clare	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Danabrook	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Dresden	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs
Drummer	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Dunham	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Elburn	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Elliott	Fine, illitic, mesic Aquic Argiudolls
Elpaso	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Flanagan	Fine, smectitic, mesic Aquic Argiudolls
Fox	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs
Graymont	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Grundelein	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Harpster	Fine-silty, mixed, superactive, mesic Typic Calciaquolls
Harvard	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Herbert	Fine-silty, mixed, superactive, mesic Udollic Epiaqualfs
Hooppole	Fine-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls
Houghton	Euic, mesic Typic Haplosaprists
Kane	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Aquic Argiudolls
Kaneville	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Kendall	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Kidami	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Kidder	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Kish	Fine-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls
La Rose	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Lena	Euic, mesic Typic Haplosaprists
Lisbon	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Lorenzo	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Typic Argiudolls
Markham	Fine, illitic, mesic Oxyaquic Hapludalfs
Martinsville	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Mayville	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Milford	Fine, mixed, superactive, mesic Typic Endoaquolls
Millbrook	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Millington	Fine-loamy, mixed, superactive, calcareous, mesic Cumulic Endoaquolls
Milton	Fine, mixed, active, mesic Typic Hapludalfs
Mundelein	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Muskego	Coprogenous, euic, mesic Limnic Haplosaprists
Octagon	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Orthents, clayey	Fine, mixed, active, nonacid, mesic Aquic Udorthents
Orthents, loamy	Fine-loamy, mixed, active, nonacid, mesic Oxyaquic Udorthents
Otter	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Ozaukee	Fine, illitic, mesic Oxyaquic Hapludalfs

Table 21.--Classification of the Soils--Continued

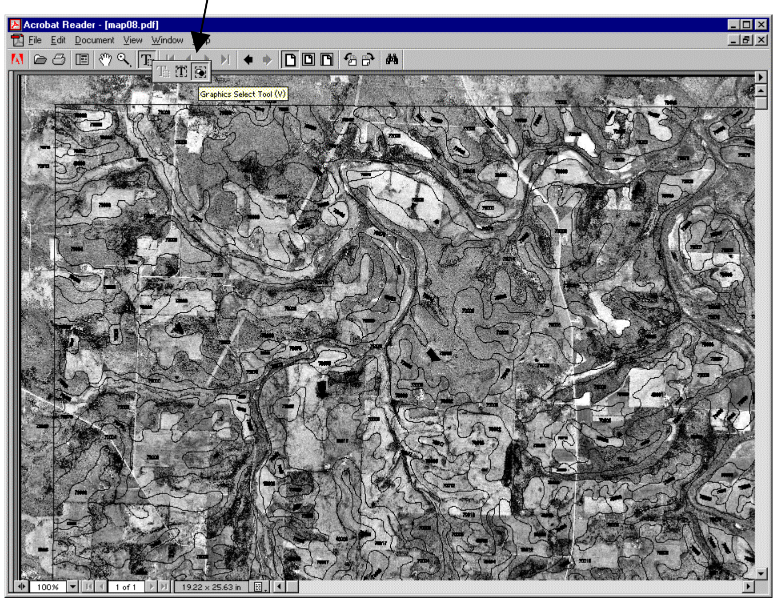
Soil name	Family or higher taxonomic class
*Parr	Fine-loamy, mixed, active, mesic Oxyaquic Argiudolls
Peotone	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
Proctor	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Ringwood	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Rodman	Sandy-skeletal, mixed, mesic Typic Hapludolls
Rush	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Sabina	Fine, smectitic, mesic Aeric Epiaqualfs
Sawmill	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Selma	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
Selmass	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
Senachwine	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Somonauk	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Thorp	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
*Varna	Fine, illitic, mesic Oxyaquic Argiudolls
Virgil	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Warsaw	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls
Wauconda	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Waupecan	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Will	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Endoaquolls
Wingate	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Zurich	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Printing Soil Survey Maps

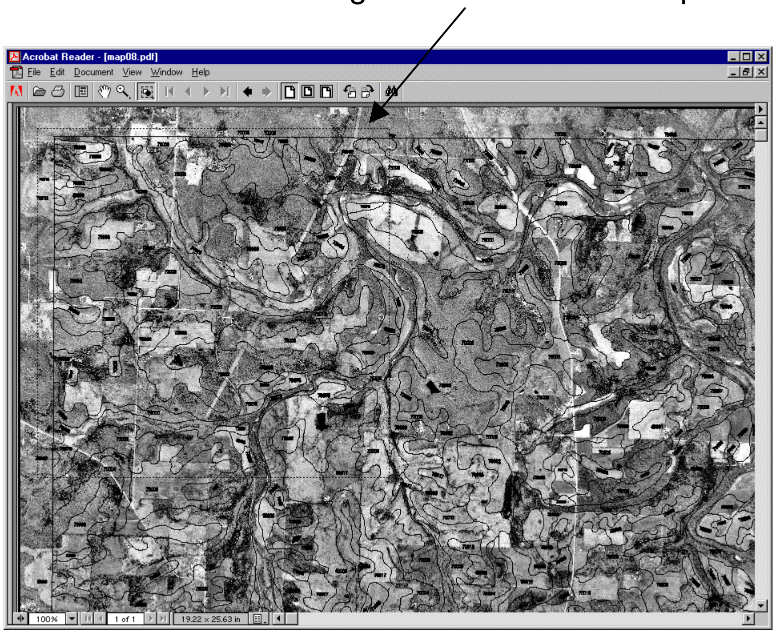
The soil survey maps were made at a scale of 1:12000 and were designed to be used at that scale. To print the maps at 1:12000 scale, set the view to Actual Size from the View pull down menu.



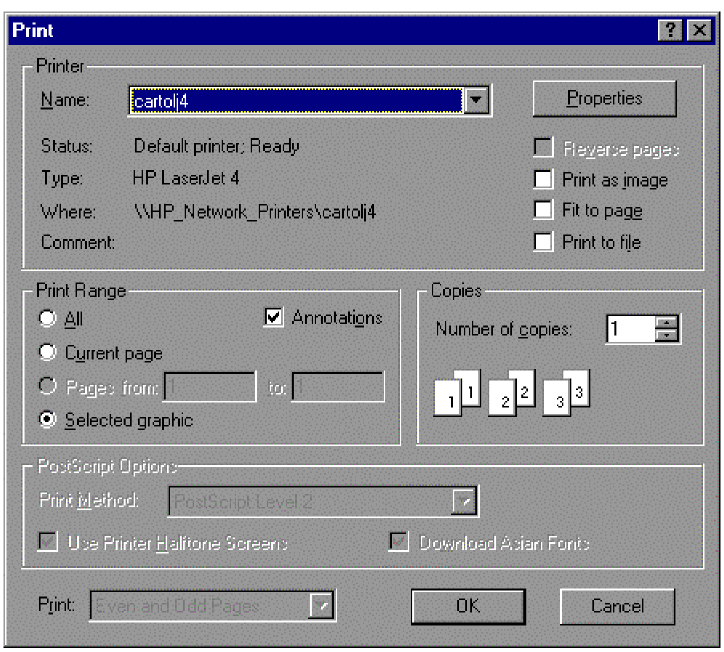
Using the pan tool, go to the area you would like to print. Select the Graphic Selection Tool by holding down the Text Selection Tool button and clicking on the Graphic Selection Tool button.



Then using the Graphic Selection Tool drag a box around the area you would like to print. Note dashed lines forming a box around area to print.



Select File Print. The Print Range will be set to Selected graphic. Click OK and the map will be sent to the printer.



NRCS SOILS 37A
3/95

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

DESCRIPTION	SYMBOL

CULTURAL FEATURES

BOUNDARIES

- • National, state, or province
- • County or parish
- Minor civil division
- Reservation, (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access areas
- • Field sheet matchline & neatline
- Previously published survey

OTHER BOUNDARY (label)

- Airport, airfield — Davis airstrip
- • Cemetery — St Johns Cemetery
- City / county Park — Central Park

STATE COORDINATE TICK

- • LAND DIVISION CORNERS (section and land grants)
- • GEOGRAPHIC COORDINATE TICK

TRANSPORTATION

- Divided roads
- Other roads
- # Trails

ROAD EMBLEMS & DESIGNATIONS

- • Interstate — 79; 79 345
- • Federal — 410; 410 224
- • State — 52; 52 347
- County, farm, or ranch — 376

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPELINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad
- Single side slope (showing actual feature location)

DAMS

- Medium or small — W

LANDFORM FEATURES

- Prominent Hill or Peak
- Soil Sample Site — S

* Cultural features for use in Illinois

DESCRIPTION	SYMBOL

CULTURAL FEATURES (cont.)

MISCELLANEOUS CULTURAL FEATURES

- Farmland, house (omit in urban areas)
- Church
- School
- Other Religion (label) — Mt Carmel
- Located object (label) — Ranger Station
- Tank (label) — Petroleum
- Lookout Tower
- Oil and / or Natural Gas Wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end

DRAINAGE AND IRRIGATION

- Double line canal (label) — CANAL
- Perennial drainage and/or irrigation ditch
- Intermittent drainage and/or irrigation ditch

SMALL LAKES, PONDS, AND RESERVOIRS

- Perennial water
- Miscellaneous water
- Flood pool line — FLOOD POOL LINE

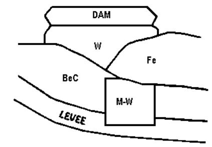
MISCELLANEOUS WATER FEATURES

- Spring
- Well, artesian
- Well, irrigation

DESCRIPTION	SYMBOL

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS



LANDFORM FEATURES

ESCARPMENTS

- Bedrock
- Other than bedrock

SHORT STEEP SLOPE

GULLY

DEPRESSION, closed

SINKHOLE

EXCAVATIONS

PITS

- Borrow pit
- Gravel pit
- Mine or quarry

LANDFILL

MISCELLANEOUS SURFACE FEATURES

- Blowout
- Clay spot
- Gravelly spot
- Lava flow
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

RECOMMENDED AD HOC SOIL SYMBOLS

	SYMBOL_ID			SYMBOL_ID	
	1			23	
	2			24	
	3			25	
	4		Gray spot	26 GSP	
	5			27	
	6			28	
	7		Calcareous spot	29 CSP	
	8		Muck spot	30 MUC	
	9			31	
	10			32	
	11			33	
Dumps	12 DMP			34	
	13		Mine subsided Area	35 MSA	
	14			36	
Oil brine spot	15 OBS			37	
	16			38	
	17			39	
	18		Glacial Till spot	40 GLA	
	19			41	
Disturbed soil spot	20 DSS			42	
	21			43	
	22			44	

Descriptions of Special Features

Name	Description	Label
Blowout	A small saucer-, cup-, or trough-shaped hollow or depression formed by wind erosion on a preexisting sand deposit. Typically 0.2 acre to 2.0 acres.	BLO
Borrow pit	An open excavation from which soil and underlying material have been removed, usually for construction purposes. Typically 0.2 acre to 2.0 acres.	BPI
Calcareous spot	An area in which the soil contains carbonates in the surface layer. The surface layer of the named soils in the surrounding map unit is noncalcareous. Typically 0.5 acre to 2.0 acres.	CSP
Clay spot	A spot where the surface layer is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser. Typically 0.2 acre to 2.0 acres.	CLA
Depression, closed	A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage. Typically 0.2 acre to 2.0 acres.	DEP
Disturbed soil spot	An area in which the soil has been removed and materials redeposited as a result of human activity. Typically 0.25 acre to 2.0 acres.	DSS
Dumps	Areas of nonsoil material that support little or no vegetation. Typically 0.5 acre to 2.0 acres.	DMP
Escarpment, bedrock	A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.	ESB
Escarpment, nonbedrock	A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.	ESO
Glacial till spot	An exposure of glacial till at the surface of the earth. Typically 0.25 acre to 2.0 acres.	GLA
Gravel pit	An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel. Typically 0.2 acre to 2.0 acres.	GPI
Gravelly spot	A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments. Typically 0.2 acre to 2.0 acres.	GRA

Name	Description	Label
Gray spot	A spot in which the surface layer is gray in areas where the subsurface layer of the named soils in the surrounding map unit are darker. Typically 0.25 acre to 2.0 acres.	GSP
Gully	A small channel with steep sides cut by running water through which water ordinarily runs only after a rain or after melting of snow or ice. It generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage.	GUL
Iron bog	An accumulation of iron in the form of nodules, concretions, or soft masses on the surface or near the surface of soils. Typically 0.2 acre to 2.0 acres.	BFE
Landfill	An area of accumulated waste products of human habitation, either above or below natural ground level. Typically 0.2 acre to 2.0 acres.	LDF
Levee	An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.	LVS
Marsh or swamp	A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Typically 0.2 acre to 2.0 acres.	MAR
Mine or quarry	An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines. Typically 0.2 acre to 2.0 acres.	MPI
Mine subsided area	An area that is lower than the soils in the surrounding map unit because of subsurface coal mining. Typically 0.25 acre to 3.0 acres.	MSA
Miscellaneous water	A small, constructed body of water that is used for industrial, sanitary, or mining applications and that contains water most of the year. Typically 0.2 acre to 2.0 acres.	MIS
Muck spot	An area that occurs within an area of poorly drained or very poorly drained soil and that has a histic epipedon or an organic surface layer. The symbol is used only in map units consisting of mineral soil. Typically 0.2 acre to 2.0 acres.	MUC
Oil brine spot	An area of soil that has been severely damaged by the accumulation of oil brine, with or without liquid oily wastes. The area is typically barren but may have a vegetative cover of salt-tolerant plants. Typically 0.2 acre to 2.0 acres.	OBS
Perennial water	A small, natural or constructed lake, pond, or pit that contains water most of the year. Typically 0.2 acre to 2.0 acres.	WAT

Name	Description	Label
Rock outcrop	An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where “Rock outcrop” is a named component of the map unit. Typically 0.2 acre to 2.0 acres.	ROC
Saline spot	An area where the surface layer has an electrical conductivity of 8 mmhos/cm-l more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm-l or less. Typically 0.2 acre to 2.0 acres.	SAL
Sandy spot	A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer. Typically 0.2 acre to 2.0 acres.	SAN
Severely eroded spot	An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which “severely eroded,” “very severely eroded,” or “gullied” is part of the map unit name. Typically 0.2 acre to 2.0 acres.	ERO
Short steep slope	A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.	SLP
Sinkhole	A closed depression formed either by solution of the surficial rock or by collapse of underlying caves. Typically 0.2 acre to 2.0 acres.	SNK
Slide or slip	A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces. Typically 0.2 acre to 2.0 acres.	SLI
Sodic spot	An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less. Typically 0.2 acre to 2.0 acres.	SOD
Spoil area	A pile of earthy materials, either smoothed or uneven, resulting from human activity. Typically 0.2 acre to 2.0 acres.	SPO
Stony spot	A spot where 0.01 to 0.1 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones. Typically 0.2 acre to 2.0 acres.	STN
Unclassified water	A small, natural or manmade lake, pond, or pit that contains water, of an unspecified nature, most of the year. Typically 0.2 acre to 2.0 acres.	UWT

Name	Description	Label
Very stony spot	A spot where 0.1 to 3.0 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surface cover of the surrounding soil is less than 0.01 percent stones. Typically 0.2 acre to 2.0 acres.	STV
Wet depression	A shallow, concave area within an area of poorly drained or very poorly drained soils in which water is ponded for intermittent periods. The concave area is saturated for appreciably longer periods of time than the surrounding soil. Typically 0.2 acre to 2.0 acres.	WDP
Wet spot	A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit. Typically 0.2 acres to 2.0 acres.	WET