



United States  
Department of  
Agriculture

In cooperation with Illinois  
Agricultural Experiment  
Station

# Soil Survey of Boone County, Illinois



NRCS

Natural  
Resources  
Conservation  
Service





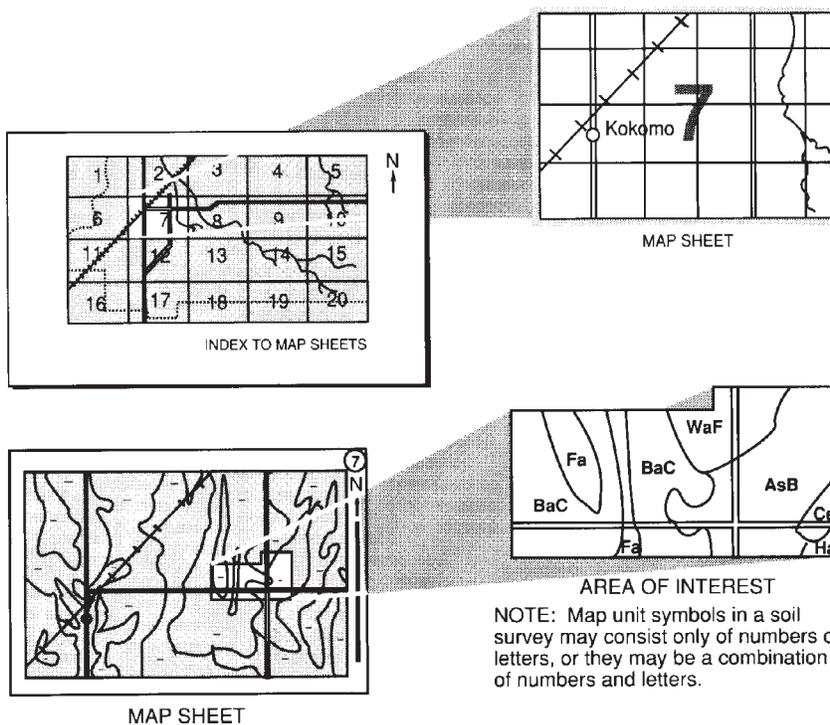
# How To Use This Soil Survey

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

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

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

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



## National Cooperative Soil Survey

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

Major fieldwork for this soil survey was completed in 2005. Soil names and descriptions were approved in 2006. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2005. The most current official data are available on the Internet.

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

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## Cover Photo Caption

A crop rotation that includes 1 or more years of close-growing grasses or legumes is effective in controlling erosion in sloping and strongly sloping areas of Kidder soils. The gently sloping Flagg soils are on the summits in the background.

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

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# Foreword

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

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

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

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

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

William J. Gradle  
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# Soil Survey of Boone County, Illinois

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

BOONE COUNTY is in northern Illinois (fig. 1). It has an area of 180,490 acres, or 281 square miles. It is bordered by McHenry County on the east, De Kalb County on the south, Winnebago County on the west, and Rock and Walworth Counties, Wisconsin, on the north. In the year 2000, the population of the county was 41,786 (U.S. Department of Commerce, 2000). Belvidere, the county seat, is the largest city in the county.

The survey area is a subset of Major Land Resource Area (MLRA) 95B, the Southern Wisconsin and Northern Illinois Drift Plain (USDA/NRCS, 2006).

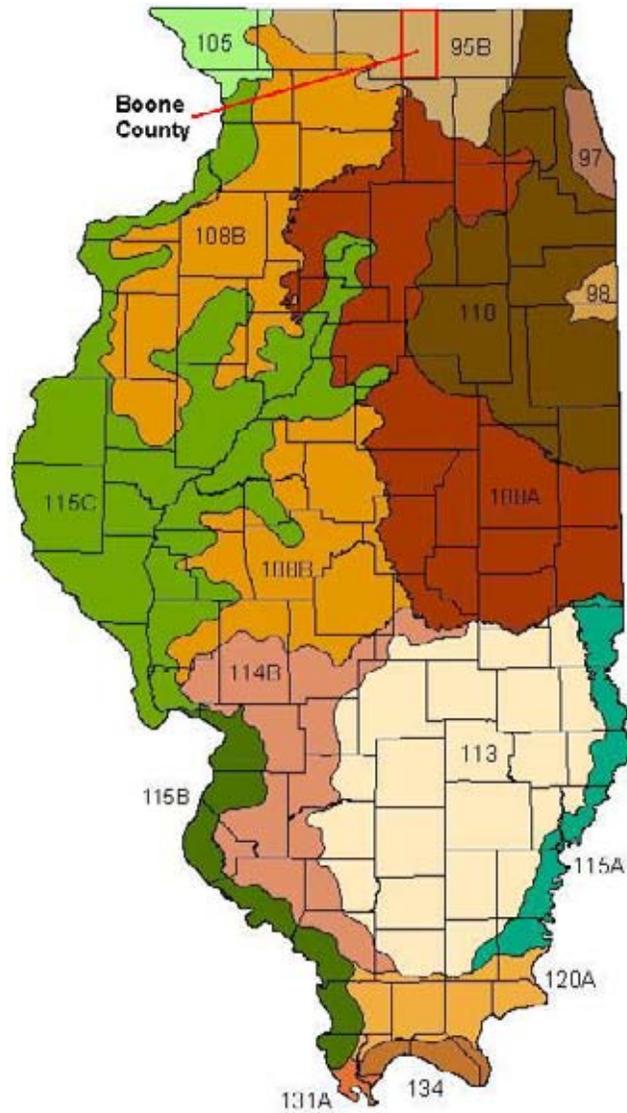
This soil survey updates a survey of Boone County published in 1980 (Grantham, 1980). It provides additional information, updated interpretations, and digital soil maps at a scale of 1:12,000 on an orthophoto base.

## General Nature of the Survey Area

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

## History

Boone County was organized from Winnebago County on March 3, 1836. Its present boundaries were not established until May 4, 1843, when a mile-wide strip was annexed to the western border from Winnebago County. Boone County is the smallest of the "northern tier" counties in Illinois. The county was named after frontiersman Daniel Boone. The earliest settlers came from New York and other New England states. The county seat, Belvidere, was platted in 1837.



#### LEGEND

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

**Figure 1.—Location of Boone County and the major land resource areas (MLRAs) in Illinois.**

## Physiography, Relief, and Drainage

Boone County is characterized by ground moraines, end moraines, outwash plains, stream terraces, flood plains, and bogs. It is in the Rock River Hill Country of the Till Plains Section of the Central Lowland Province (Leighton and others, 1948).

The topography in the county is controlled in part by the unevenness of the bedrock surface. Prior to the arrival of the glaciers, erosive forces carved a deep valley system into the bedrock. This valley system is known as the Troy Bedrock Valley (Berg and others, 1984). As glaciers advanced and retreated, the landscape was again eroded, reshaped, and modified many times. Deposits of glacial drift range in thickness from more than 450 feet in the northeastern part of the county to less than 5 feet in some spots in the southern part of the county (Berg and others, 1982).

The highest elevation in the county is about 1,050 feet above sea level. It is about 5.5 miles north of Capron. The lowest elevation, about 725 feet, is at the point where the Kishwaukee River leaves the county. Elevation in the county is generally more than 800 feet, but it is lower in the Kishwaukee River valley (fig. 2).

The majority of the county is drained by the Kishwaukee River, which flows generally toward the west. Three tributaries—Beaver, Piscasaw, and Mud Creeks—drain the majority of the northern part of the county (fig. 3). These creeks flow southwesterly into the Kishwaukee River. Other Kishwaukee River tributaries include Coon Creek, which flows in a northwesterly direction, and Mosquito Creek, which flows in a northerly direction. The extreme northwest part of the county is drained by

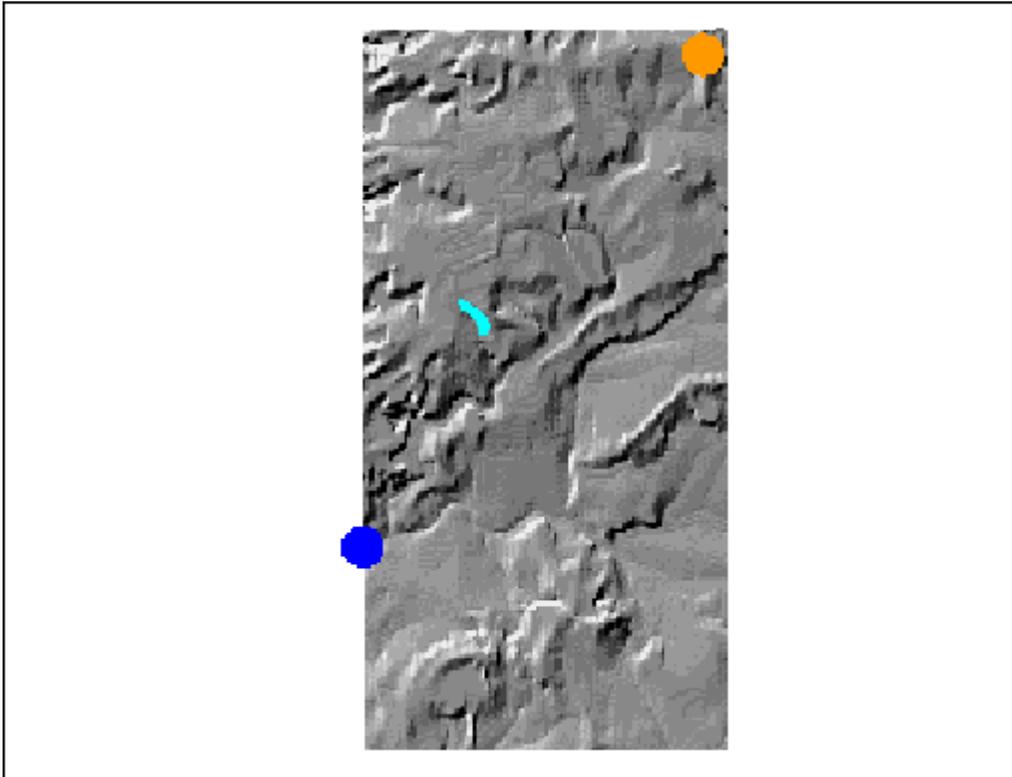


Figure 2.—Generalized relief map showing the location of the highest and lowest elevations in Boone County. The orange dot represents the highest elevation (about 1,050 feet above mean sea level), and the blue dot represents the lowest (about 725 feet above mean sea level). (Source: Illinois State Geological Survey, <http://www.isgs.uiuc.edu/education/hi-low/hilow-intro.shtml>)



**Figure 3.—Piscasaw Creek is one of the major tributaries that drain the northern part of the county. Bendway weirs help to protect an eroding streambank.**

the North and South branches of Kinnikinnick Creek, which generally flow in a westerly direction and eventually empty into the Rock River.

## **Natural Resources**

Soil is the most abundant natural resource in Boone County. This fact is reflected in the county's agriculture industry.

Sand and gravel deposits, which are throughout the county, provide building materials for construction. Dolomite is quarried in several places. The crushed and broken stone is used mainly as base material for roads, for road surfacing, as agricultural lime, or as concrete aggregate. Peat and muck deposits also occur and are available for potential commercial use.

The water supply in the survey area is good. The major ground-water resources are from the sand and gravel aquifers in the glacial drift, the shallow dolomite aquifer in the Ordovician System, and the sandstone aquifers in the Ordovician and Cambrian Systems (Berg and others, 1984). The dolomitic aquifer is the most widely used for domestic supplies; however, the deeper sandstone aquifers are more dependable for larger quantities of water and are the main sources of water for municipalities.

## **Agriculture**

Like much of Illinois, Boone County has some very fertile farmland. Agriculture has been the dominant land use in the county for decades. In 2002, farmland still occupied 81 percent of the land (U.S. Department of Commerce, 2002).

Agriculture in Boone County consists of commodity crop production, livestock, and specialty crops, such as vegetables and nursery and greenhouse plants. The largest

agricultural land use is the production of corn and soybeans. Hogs and pigs make up the top livestock inventory, and cattle and calves also are raised. In 2002, the number of swine totaled 13,245 and the number of cattle and calves was 8,771.

The market value of Boone County agricultural products exceeded \$47 million in 2002, and over 24 percent of the county's farms generated annual sales of \$100,000 or more. Corn, soybeans, small grain, and nursery and greenhouse crops accounted for 78 percent of the market value of agricultural products sold in 2002, and livestock, poultry, and related products accounted for the remaining 22 percent.

The number of farms has been declining. There were 490 farms in the county in 1997 and 476 in 2002. Although the number of farms has decreased, the average farm size has increased. In 1997, farms averaged 289 acres; in 2002, the average farm size was 309 acres.

## **Industry**

There are many manufacturing firms in Boone County. The chief industries include machine tools, heat furnaces, automobiles, bottle caps, canned and frozen vegetables, synthetic quartz manufacturing, microwave paper products, rubber, wire and wire coating, fertilizers and chemicals, automotive and appliance trim, beauty salon equipment, and wooden panels and trusses for the construction industry. Many other items also are produced in the survey area.

## **Transportation Facilities**

The transportation system in Boone County provides passenger and freight access to the Chicago and Rockford metropolitan areas. Interstate 90, U.S. Highway 20, and State Highways 76 and 173 serve as the primary road transportation routes. Boone County also has a well integrated system of county highways that provide connections between incorporated and unincorporated areas. Twenty-six major truck lines serve the county.

Freight rail service is available on tracks crossing the county from east to west. Currently there is no passenger rail service, but the Chicago metro commuter rail service could expand to the area in the future.

A general aviation airport is located in the county. It serves local recreational and business flying needs; however, it does not support commercial flights or large jets.

## **Urbanization**

Many of the early settlers were drawn to Boone County because of the agricultural potential of the rich soils. In 1840, shortly after the county was established, the population was 1,705. By 1900, the population had grown to 15,971. Over the last 20 years, the migration of people from urban to suburban areas has begun to impact land use in the county (fig. 4). In 2000, the population of Boone County was 41,786 (U.S. Department of Commerce, 2000). This number represents a 35 percent increase in population since the 1990 U.S. census. In 2005, the population was estimated to be 50,483.

## **Climate**

Table 1 gives data on temperature and precipitation for the survey area as recorded at Beloit, Wisconsin, 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 the length of the growing season.



**Figure 4.—A typical area of cropland in Boone County. Urban encroachment is visible in the background.**

In winter, the average temperature is 22.9 degrees F and the average daily minimum temperature is 15.0 degrees. The lowest temperature on record, which occurred on January 18, 1994, was -26 degrees. In summer, the average temperature is 71.0 degrees and the average daily maximum temperature is 81.8 degrees. The highest temperature, which occurred on August 16, 1988, was 102 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 35.60 inches. Of this total, 23.68 inches, or about 67 percent, usually falls in April through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.77 inches on June 30, 1993. Thunderstorms occur on about 43 days each year, and most occur in June and July.

The average seasonal snowfall is 29.3 inches. The greatest snow depth at any one time during the period of record was 20 inches recorded on December 30, 2000. On an average, 39 days per year have at least 1 inch of snow on the ground.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 84 percent. The sun shines 67 percent of the time possible in summer and 47 percent in winter. The prevailing wind is from the west during most months, but it is from the south from June through October. Average windspeed is highest, around 12 miles per hour, in March and 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. 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 updated information about the soils and miscellaneous areas in Boone County, which is a subset of Major Land Resource Area 95B (fig. 1). Major land resource areas (MLRAs) are geographically associated land resource units that share a common land use, elevation, topography, climate, water, soils, and vegetation (USDA/NRCS, 2006). Map unit design and the detailed soil descriptions are based on the occurrence of each soil throughout the MLRA.

The information in this survey includes a description of the soils and miscellaneous areas and their location and a discussion of their properties and the subsequent effects on suitability, limitations, and management for specified uses.

Soil scientists from both 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 for the Boone County soil survey update consisted primarily of soil transects conducted by soil scientists. Soil transects are a systematic method of 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 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 1998 and 1999. 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 original field maps were made to coincide with the U.S. Geological Survey topographic map contour lines and tonal patterns on aerial photographs.

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

# Formation and Classification of the Soils

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This section relates the soils in the survey area to the major factors of soil formation and describes the system of soil classification.

## Formation of the Soils

Soil forms through processes that act on deposited geologic material. The five major 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 from place to place by water, wind, or glaciers, slowly changing 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 organic and mineral material in which soils form. It affects the mineralogical and chemical composition, the texture, and the structure of a soil. The soils of Boone County were derived from parent materials that were directly or indirectly impacted by the Illinoian and Wisconsinan glaciations. The parent materials include loess, till, outwash, alluvium, organic material, windblown sand, and residuum.

Sometime after the glaciers retreated, conditions became drier and the winds increased. A layer of silty material, or loess, was deposited directly by the winds. Loess is the most widespread parent material in the county. It blankets many of the other parent materials. 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 some areas the loess is more than 5 feet thick. Muscatune and Sable soils are examples of soils that formed entirely in this silty, windblown material.

Till is nonstratified drift transported and deposited directly by glacial ice. It is a compact mixture of gravel, sand, silt, and clay. Two formations cover the county. These are the Winnebago Formation with the Argyle, Capron, and Nimtz till members north of the Kishwaukee River and Piscasaw Creek and the Glasford Formation with the Belvidere and Esmond till members to the south (Berg and others, 1985). Caprell and Kidder soils formed in till of the Winnebago Formation, and Odell and Parr soils formed in till of the Glasford Formation.

In some areas of the Winnebago Formation, an old soil formed in the till during an interglacial period. This older, generally reddish soil is called a paleosol. Ogle and Pecatonica soils formed in loess over this paleosol.

Outwash was deposited by running meltwater from glaciers. The main source of the outwash was from the Wisconsinan glaciers north and east of the county. These glaciers supplied large amounts of sediment that filled the valleys of the Kishwaukee River and Piscasaw Creek. 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; smaller particles were deposited farther downstream. Outwash deposits in Boone County range from loamy sediments to a mixture of coarse sand and gravel. Jasper and Martinsville soils formed in loamy outwash. Ockley and Warsaw soils formed in loamy outwash over sandy and gravelly 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. Comfrey and Millington soils formed in loamy alluvium.

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 so decomposed that they are unrecognizable. These organic deposits are called sapric material. Houghton and Palms soils formed in this material.

The eolian or windblown sand deposits are part of the Henry Formation. They commonly occur along the Kishwaukee River. Hononegah soils formed in eolian deposits. Sandy and gravelly outwash commonly underlies the windblown sand.

A small percentage of the soils in the county formed in residuum, which is material weathered from bedrock. Dodgeville and Rockton soils are moderately deep to dolomite bedrock.

## Climate

Boone County has a temperate, humid continental climate. The general climate has had an important overall influence on the characteristics of the soils. However, the climate is essentially uniform throughout the county and has not caused any major local 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. Most years, this region has enough rainfall and melted snowfall to moisten all of the soil and underlying material to the level of the permanent water table. The degree of saturation varies, depending on the thickness and permeability of unconsolidated materials, their water-holding capacity, and topography. In general, rainfall either percolates downward to underground outlets, evaporates, is transpired by plants, or moves across the land surface to streams, carrying with it material in solution and suspension. As water moves downward, clay is moved from the surface soil to the subsoil, where it accumulates. Salts of calcium, magnesium, potassium, and other bases, as well as various organic and inorganic colloids, also are formed. Some accumulate where formed, some are carried away in drainage water, some are moved to other parts of the soil profile to help form soil horizons, and some are taken up by plants in the form of nutrients. The latter tend to be returned to the local soil area unless removed by animals or humans.

Freezing and thawing help to break down rock fragments to smaller and smaller particles, and the effects of sun and wind can influence many phases of plant and animal life. The climate in Boone County has generally favored prairie grasses and hardwood forests.

Spring rains and wind can cause extensive erosion in areas where crop residue, trees, and other vegetative cover have been 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 material and nitrogen to the soil. The amount of organic matter in the soil depends on the kind of native plants that grew on the soil. Two kinds of vegetation—tall-grass prairie and deciduous forest—were present when Boone County was settled and presumably had been there for a long time. Grasses have many fine fibrous roots that add large amounts of organic material to the soil when they die and decay. Soils that formed under prairie vegetation, therefore, have a thick, black or dark brown surface layer. In contrast, soils that supported native vegetation of deciduous trees have a thinner, lighter colored surface layer. Forest debris accumulated primarily on the soil surface, where most of it decayed rapidly or was burned or eroded away. A relatively small amount was carried by soil organisms into the upper 1 to 5 inches of mineral soil, where it was partially preserved. In the virgin or uncultivated state, soils that developed under both types of vegetation have a dark surface layer resulting from an accumulation of organic matter. However, the dark layer is much thicker in prairie soils, typically ranging between 10 and 18 inches. Examples of soils that formed under prairie conditions are Elburn and Muscatone soils. In soils that formed under forest vegetation, the surface layer is generally 3 to 6 inches thick. Examples of soils that formed under forest vegetation are Kendall and Rozetta soils. Where the two types of vegetation were combined or where forest was encroaching on prairie, the surface layer is 7 to 10 inches thick. Examples of soils that formed in these transitional areas are Argyle and Greenbush soils. Mucky soils commonly have an accumulation of herbaceous organic material several feet deep. Houghton soils are an example.

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, which are 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 also have been important factors in soil formation and development in Boone County. Settlers first cleared the native vegetation and plowed the land. By cultivating slopes, the farmers left the soils vulnerable to erosion and deposition. Later, when plant nutrients were depleted in the soil, fertilizer and lime were applied. Urban and industrial expansion over the past decades also has resulted in land being drained, cleared, excavated, and filled. These practices have had a pronounced effect on past soil formation and on present and future soil development.

## **Topography**

Relief, which includes elevation, topography, and water table levels, largely determines the natural drainage of soils. In Boone County the slopes range from 0 to 35 percent. Natural soil drainage ranges from excessively 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 Sable soils occur in low, nearly level areas and have a water table close to the surface for

most 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. As a result, the subsoil is dull gray and mottled. In the more sloping, well drained Flagg and St. Charles soils, the water table is lower and some of the rainfall runs off the surface. The iron and manganese compounds are well oxidized. As a result, the subsoil has brown colors. Between these extremes, or in areas where the water table fluctuates slowly into and out of the soil profile, the compounds are moderately well oxidized to imperfectly oxidized and result in mixed or mottled colors.

Local relief also influences the severity of erosion. Even though some erosion occurs on all sloping soils, the hazard of erosion generally is 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 more slowly permeable soils 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 material has been in place determines, to a great extent, the degree of profile development. Orion soils have a very weakly expressed profile because they are on flood plains that periodically receive new alluvial sediments. They have not been in place long enough for the development of distinct horizons. Peconica soils, which are on ground moraines, are more strongly developed than the Orion soils. They have distinct horizons because the loess and underlying till in which they formed have been in place a much longer time.

## Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in 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 *aquoll*, the suborder of the Mollisols that has an aquic moisture regime).

**SUBGROUP.** Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic 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, mineral content, cation-exchange activity class, soil temperature regime, soil depth, and reaction. 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. An example is the Drummer series.



# Soil Series and Detailed Soil Map Units

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

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 2003). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of

such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given 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, Kidder loam, 4 to 6 percent slopes, eroded, is a phase of the Kidder 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. Rodman-Warsaw complex, 6 to 12 percent slopes, eroded, 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. Rockton and Dodgeville soils, 5 to 10 percent slopes, eroded, 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 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

## ***Adrian Series***

*Drainage class:* Very poorly drained

*Landform:* Depressions, outwash plains, and flood plains

*Parent material:* Herbaceous organic material over sandy outwash or sandy alluvium

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Sandy or sandy-skeletal, mixed, euic, mesic Terric Haplosaprists

### **Typical Pedon**

Adrian muck, 0 to 2 percent slopes; at an elevation of 608 feet; 1,180 feet north and 340 feet east of the southwest corner of sec. 1, T. 31 N., R. 10 E.; Kankakee County, Illinois; USGS Bonfield topographic quadrangle; lat. 41 degrees 11 minutes 39 seconds N. and long. 88 degrees 01 minute 47 seconds W., NAD 27; UTM Zone 16, Easting 0413655, Northing 4560828, NAD 83:

Oap—0 to 7 inches; black (N 2.5/) (broken face and rubbed) muck (sapric material); 5 percent fiber, 1 percent rubbed; weak fine and medium granular structure; very friable; many very fine roots; few sand grains throughout; neutral; clear smooth boundary.

- Oa1—7 to 12 inches; black (N 2.5/) (broken face and rubbed) muck (sapric material); 5 percent fiber, 1 percent rubbed; weak medium granular structure; very friable; many very fine roots; few sand grains throughout; neutral; clear smooth boundary.
- Oa2—12 to 22 inches; black (N 2.5/) (broken face and rubbed) muck (sapric material); 5 percent fiber, 1 percent rubbed; weak medium and coarse subangular blocky structure; very friable; common very fine roots; few sand grains throughout; neutral; clear wavy boundary.
- Oa3—22 to 40 inches; 70 percent black (10YR 2/1) (broken face and rubbed) muck (sapric material) and 30 percent light olive brown (2.5Y 5/3) loamy sand; 20 percent fiber, 2 percent rubbed; massive; very friable; common very fine roots; a 2-inch band of olive brown (2.5Y 4/3) coprogenous material at a depth of 38 inches; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear wavy boundary.
- Cg—40 to 60 inches; 80 percent light brownish gray (2.5Y 6/2) and 20 percent light olive brown (2.5Y 5/3) loamy sand; single grain; loose; many medium and coarse prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; violently effervescent; slightly alkaline.

### Range in Characteristics

*Thickness of the organic material:* 16 to 51 inches

*Surface tier:*

Hue—10YR or N  
 Value—2 to 3  
 Chroma—0 to 2  
 Texture—muck (sapric material)

*Subsurface tier:*

Hue—10YR, 7.5YR, or N  
 Value—2 to 3  
 Chroma—0 to 3  
 Texture—muck (sapric material)

*Cg horizon:*

Hue—10YR, 2.5Y, 5Y, or N  
 Value—2 to 6  
 Chroma—0 to 3  
 Texture—sand, fine sand, or loamy sand  
 Content of gravel—less than 7 percent

## 777A—Adrian muck, 0 to 2 percent slopes

### Setting

*Landform:* Depressions and outwash plains

*Position on the landform:* Toeslopes

### Map Unit Composition

Adrian and similar soils: 92 percent

Dissimilar soils: 8 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have organic deposits more than 51 inches thick
- Soils that have more clay in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Selmass soils on toeslopes

***Properties and Qualities of the Adrian Soil***

*Parent material:* Herbaceous organic material over sandy outwash

*Drainage class:* Very poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 17.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 70.0 to 99.0 percent

*Shrink-swell potential:* Low

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, November through June

*Ponding (depth, months):* At the surface to 1.0 foot above the surface, November through June

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* High

***Interpretive Groups***

*Land capability classification:* 3w

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Hydric

**1777A—Adrian muck, undrained, 0 to 2 percent slopes, frequently flooded*****Setting***

*Landform:* Flood plains and depressions

*Position on the landform:* Toeslopes

***Map Unit Composition***

Adrian and similar soils: 88 percent

Dissimilar soils: 12 percent

***Components of Minor Extent****Similar soils:*

- Soils that have organic deposits more than 51 inches thick
- Soils that have more clay in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Comfrey soils on flood plains

***Properties and Qualities of the Adrian Soil***

*Parent material:* Herbaceous organic material over sandy alluvium

*Drainage class:* Very poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 15.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 70.0 to 99.0 percent

*Shrink-swell potential:* Low

*Apparent seasonal high water table (depth, months):* At the surface to 0.5 foot below the surface, January through December

*Ponding (depth, months):* At the surface to 1.0 foot above the surface, January through December

*Flooding (frequency, months):* Frequent, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* High

### **Interpretive Groups**

*Land capability classification:* 5w

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Hydric

## **Andres Series**

*Drainage class:* Somewhat poorly drained

*Landform:* Lake plains and ground moraines

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash and till

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Aquic Argiudolls

### **Typical Pedon**

Andres silt loam, 0 to 2 percent slopes; at an elevation of 633 feet; 1,525 feet south and 510 feet east of the northwest corner of sec. 27, T. 30 N., R. 8 E.; Livingston County, Illinois; USGS Campus topographic quadrangle; lat. 41 degrees 02 minutes 52 seconds N. and long. 88 degrees 18 minutes 17 seconds W., NAD 27; UTM Zone 16, Easting 0390341, Northing 4544894, NAD 83:

Ap—0 to 11 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

BA—11 to 14 inches; brown (10YR 4/3) clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt1—14 to 19 inches; brown (10YR 4/3) clay loam; moderate fine subangular blocky structure; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt2—19 to 26 inches; grayish brown (10YR 5/2) clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/4) 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 36 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine 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; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.
- 2Bt4**—36 to 50 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure; firm; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; few very fine roots; many medium prominent gray (N 5/) iron depletions in the matrix; few fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; 3 percent gravel; very slightly effervescent; slightly alkaline; clear smooth boundary.
- 2C**—50 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive; firm; few fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; many medium prominent gray (N 5/) iron depletions in the matrix; 5 percent gravel; slightly effervescent; slightly alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 20 inches

*Thickness of the loess or other silty material:* Less than 24 inches

*Depth to till:* 22 to 50 inches

*Depth to carbonates:* 24 to 55 inches

*Depth to the base of soil development:* 36 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—3 to 5

Chroma—2 to 4

Texture—clay loam, loam, sandy clay loam, or silty clay loam

*2Bt horizon:*

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 8

Texture—silty clay loam or silt loam

*2C horizon:*

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 8

Texture—silty clay loam or silt loam

## 293A—Andres silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Lake plains and ground moraines

*Position on the landform:* Footslopes and summits

### **Map Unit Composition**

Andres and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have till at a depth of less than 22 inches
- Soils that have a thinner dark surface layer
- Soils that have more sand and less silt in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have more silt and less sand in the middle part of the subsoil

#### *Dissimilar soils:*

- Poorly drained soils on toeslopes

### **Properties and Qualities of the Andres Soil**

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash and till

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.5 to 5.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Argyle Series**

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Thin layer of loess over a paleosol that formed in till

*Slope range:* 2 to 5 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs

### **Typical Pedon**

Argyle silt loam, 5 to 10 percent slopes, eroded; at an elevation of about 878 feet; 2,200 feet south and 1,300 feet east of the northwest corner of sec. 4, T. 25 N., R. 7 E.; Carroll County, Illinois; USGS Shannon topographic quadrangle; lat. 42 degrees 11 minutes 34 seconds N. and long. 89 degrees 42 minutes 11 seconds W., NAD 27; UTM Zone 16, Easting 0276799, Northing 4674721, NAD 83:

- Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium granular structure; friable; many fine and medium roots; moderately acid; clear smooth boundary.
- BE—7 to 12 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common fine and medium roots; very dark gray (10YR 3/1) worm channels; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.
- Bt1—12 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; strong fine and medium subangular blocky structure; firm; common fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; strongly acid; abrupt smooth boundary.
- 2Bt2—22 to 38 inches; red (2.5YR 4/6) gravelly clay loam; moderate medium and coarse angular blocky structure; firm; few fine roots; common faint yellowish red (5YR 4/6) clay films, especially on pebbles; common fine black (N 2.5/) masses of iron and manganese oxides or organic coatings; stone line in the upper part of the horizon; 25 percent gravel; strongly acid; clear smooth boundary.
- 2Bt3—38 to 70 inches; red (2.5YR 4/6) gravelly sandy clay loam; moderate coarse angular blocky structure; firm; few fine roots; common distinct dark reddish brown (2.5YR 3/4) clay films on faces of peds; 20 percent gravel; strongly acid; clear smooth boundary.
- 2BC—70 to 84 inches; dark red (2.5YR 3/6) sandy loam; weak coarse angular blocky structure; friable; 5 percent gravel; slightly acid.

### Range in Characteristics

*Thickness of the loess:* 15 to 25 inches

*Depth to the base of soil development:* More than 48 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

*E horizon (where present):*

Hue—10YR

Value—4 to 6

Chroma—2 or 3

Texture—silt loam

*Bt horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—silty clay loam

*2Bt horizon:*

Hue—7.5YR, 5YR, or 2.5YR

Value—3 to 5

Chroma—4 to 6

Texture—clay loam, loam, or sandy clay loam or the gravelly analogs of these textures

Content of gravel—less than 30 percent

*2BC horizon:*

Hue—7.5YR, 5YR, or 2.5YR

Value—3 to 5

Chroma—4 to 6

Texture—clay loam, loam, sandy clay loam, or sandy loam  
 Content of gravel—less than 15 percent

## **227B—Argyle silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Summits and shoulders

### ***Map Unit Composition***

Argyle and similar soils: 95 percent

Dissimilar soils: 5 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a solum less than 48 inches thick
- Soils that have a thicker dark surface layer
- Soils that have a lighter colored surface layer
- Soils that have a paleosol beginning at a depth of less than 15 inches or more than 25 inches

*Dissimilar soils:*

- The well drained Dodgeville, NewGlarus, Rockton, and Whalan soils, which are moderately deep to bedrock; on summits and shoulders

### ***Properties and Qualities of the Argyle Soil***

*Parent material:* Thin layer of loess over a paleosol that formed in till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## ***Atterberry Series***

*Drainage class:* Somewhat poorly drained

*Landform:* Ground moraines and stream terraces

*Parent material:* Loess or other silty material

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

### Typical Pedon

Atterberry silt loam, 0 to 2 percent slopes; at an elevation of 660 feet; 1,650 feet north and 1,120 feet east of the southwest corner of sec. 34, T. 16 N., R. 9 E.; Bureau County, Illinois; USGS Princeton South topographic quadrangle; lat. 41 degrees 19 minutes 30 seconds N. and long. 89 degrees 26 minutes 47 seconds W., NAD 27; UTM Zone 16, Easting 0295253, Northing 4577728, NAD 83:

- Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.
- E—9 to 13 inches; light brownish gray (10YR 6/2) silt loam; moderate thin platy structure; friable; few fine roots; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.
- BE—13 to 17 inches; brown (10YR 5/3) silt loam; moderate medium platy structure parting to moderate very fine subangular blocky; friable; few fine roots; common faint brown (10YR 4/3) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine dark brown (7.5YR 3/2) iron and manganese oxide concretions throughout; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.
- Bt—17 to 24 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; common faint light gray (10YR 7/2) (dry) clay depletions on faces of peds; common fine dark brown (7.5YR 3/2) 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; strongly acid; clear smooth boundary.
- Btg1—24 to 33 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; common fine dark brown (7.5YR 3/2) iron and manganese oxide concretions 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; strongly acid; clear smooth boundary.
- Btg2—33 to 40 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; common fine dark brown (7.5YR 3/2) iron and manganese oxide concretions throughout; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.
- Btg3—40 to 48 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.
- BCtg—48 to 55 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; friable; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Cg—55 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid.

### Range in Characteristics

*Thickness of the loess or other silty material:* More than 60 inches

*Depth to the base of soil development:* 42 to 72 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

*E 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 or silt loam

*C or Cg horizon:*

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 4

Texture—silt loam

## 61A—Atterberry silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Ground moraines

*Position on the landform:* Summits

### Map Unit Composition

Atterberry and similar soils: 98 percent

Dissimilar soils: 2 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have a darker subsurface layer
- Soils that have outwash or till in the lower part of the profile

*Dissimilar soils:*

- The well drained Fayette soils on summits and shoulders
- The well drained Greenbush and Rozetta soils on summits
- The poorly drained Sable soils on toeslopes

### ***Properties and Qualities of the Atterberry Soil***

*Parent material:* Loess

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.5 to 3.5 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 0.5 foot to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Not hydric

## **9061A—Atterberry silt loam, terrace, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Stream terraces

*Position on the landform:* Summits and footslopes

### ***Map Unit Composition***

Atterberry and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have a darker subsurface layer
- Soils that have outwash or till in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Sable soils on toeslopes

### ***Properties and Qualities of the Atterberry Soil***

*Parent material:* Loess or other silty material

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.5 to 3.5 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 0.5 foot to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Not hydric

### **Backbone Series**

*Drainage class:* Well drained

*Landform:* Hillslopes

*Parent material:* Coarse textured eolian deposits over drift over limestone and/or dolomite

*Slope range:* 5 to 10 percent

*Taxonomic classification:* Coarse-loamy, mixed, superactive, mesic Mollic Hapludalfs

### **Typical Pedon**

Backbone loamy sand, 5 to 10 percent slopes; at an elevation of 878 feet; 1,360 feet south and 220 feet west of the center of sec. 26, T. 29 N., R. 11 E.; Winnebago County, Illinois; USGS Shirland topographic quadrangle; lat. 42 degrees 28 minutes 56 seconds N. and long. 89 degrees 11 minutes 50 seconds W., NAD 27; UTM Zone 16, Easting 0319397, Northing 4705665, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) loamy sand, brown (10YR 4/3) dry; moderate fine and medium granular structure; friable; many fine roots; many light gray (10YR 7/1) (dry) uncoated silt and sand grains; neutral; abrupt smooth boundary.

E—8 to 11 inches; brown (10YR 4/3) and dark grayish brown (10YR 4/2) loamy sand; moderate medium platy structure; friable; common fine roots; neutral; clear smooth boundary.

BE—11 to 17 inches; brown (7.5YR 4/4) sandy loam; moderate fine and medium subangular blocky structure; friable; few fine roots; neutral; gradual smooth boundary.

2Bt—17 to 25 inches; reddish brown (5YR 4/4) loam; weak medium subangular blocky structure; friable; few fine roots; many distinct reddish brown (5YR 4/3) clay films on faces of peds; neutral; abrupt smooth boundary.

3R—25 inches; dolomite bedrock that is fractured in the upper 6 inches.

### **Range in Characteristics**

*Depth to lithic contact:* 20 to 40 inches

*Depth to the base of soil development:* 20 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—3

Chroma—1 or 2

Texture—loamy sand

*E horizon (where present):*

Hue—10YR  
 Value—4 or 5  
 Chroma—2 or 3  
 Texture—loamy sand

*BE or Bt horizon:*

Hue—10YR or 7.5YR  
 Value—4 or 5  
 Chroma—3 or 4  
 Texture—sandy loam

*2Bt horizon:*

Hue—10YR, 7.5YR, or 5YR  
 Value—3 to 5  
 Chroma—3 to 5  
 Texture—clay loam, sandy clay loam, loam, or clay

**768C—Backbone loamy sand, 5 to 10 percent slopes*****Setting****Landform:* Hillslopes*Position on the landform:* Shoulders and backslopes***Map Unit Composition***

Backbone and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that are shallow or deep to bedrock
- Soils that have more clay in the upper part of the subsoil
- Soils that are moderately eroded

*Dissimilar soils:*

- The well drained Jasper and Ringwood soils, which are very deep to bedrock; on backslopes and shoulders

***Properties and Qualities of the Backbone Soil****Parent material:* Coarse textured eolian deposits over drift over limestone and/or dolomite*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Slow*Permeability below a depth of 60 inches:* Slow to moderate*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Available water capacity:* About 3.2 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 1.0 to 2.0 percent*Shrink-swell potential:* Moderate*Ponding:* None*Flooding:* None*Potential for frost action:* Moderate*Hazard of corrosion:* Low for steel and moderate for concrete*Surface runoff class:* Medium

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* High

### **Interpretive Groups**

*Land capability classification:* 4s

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Beardstown Series**

*Drainage class:* Somewhat poorly drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Outwash and loamy and sandy sediments

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Udollic Endoaqualfs

### **Typical Pedon**

Beardstown loam, 0 to 2 percent slopes; at an elevation of 435 feet; 1,482 feet south and 1,425 feet west of the northeast corner of sec. 32, T. 18 N., R. 12 W.; Cass County, Illinois; USGS Arenzville West topographic quadrangle; lat. 39 degrees 58 minutes 27 seconds N. and long. 90 degrees 28 minutes 15 seconds W., NAD 27; UTM Zone 15, Easting 0715983, Northing 4427954, NAD 83:

- Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure parting to weak medium granular; friable; few very fine and fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; moderately acid; abrupt smooth boundary.
- E—9 to 14 inches; dark grayish brown (10YR 4/2) loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak medium platy; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings and common distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; common fine and medium dark stains (iron and manganese oxides) throughout; moderately acid; clear smooth boundary.
- BE—14 to 21 inches; brown (10YR 4/3) loam; weak fine and medium subangular blocky structure; friable; few very fine roots; few faint dark grayish brown (10YR 4/2) clay films and common distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; few fine dark iron and manganese oxide stains throughout; few fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; very strongly acid; clear smooth boundary.
- Bt1—21 to 32 inches; brown (10YR 5/3) loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; many faint grayish brown (10YR 5/2) clay films and distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few fine dark iron and manganese oxide concretions and accumulations throughout; common fine and medium distinct strong brown (7.5YR 4/6) masses of iron accumulation; very strongly acid; clear smooth boundary.
- Bt2—32 to 38 inches; grayish brown (10YR 5/2) clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many faint brown (7.5YR 5/2) clay films and common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium and coarse prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; very strongly acid; clear smooth boundary.
- Bt3—38 to 41 inches; variegated brown (10YR 5/3) and grayish brown (10YR 5/2), stratified loam and sandy loam; weak medium subangular blocky structure; friable;

few very fine roots; common faint brown (7.5YR 4/2) clay films and distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; very strongly acid; clear smooth boundary.

BC—41 to 48 inches; mottled brown (10YR 5/3) and dark yellowish brown (10YR 4/4), stratified loamy sand and sandy loam; weak medium subangular blocky structure; very friable; common faint brown (7.5YR 4/2) clay films on vertical faces of peds and distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.

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

### Range in Characteristics

*Depth to carbonates:* More than 60 inches

*Depth to the base of soil development:* 40 to 60 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam

*E horizon:*

Hue—10YR

Value—4 to 6

Chroma—1 to 3

Texture—loam, silt loam, or sandy loam

*Bt horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 or 3

Texture—loam, clay loam, sandy clay loam, or sandy loam or stratified with these textures

*C horizon:*

Hue—10YR

Value—4 to 6

Chroma—2 to 6

Texture—stratified loamy sand and sandy loam

## 188A—Beardstown loam, 0 to 2 percent slopes

### Setting

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits

### Map Unit Composition

Beardstown and similar soils: 95 percent

Dissimilar soils: 5 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a darker subsurface layer

- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have less clay and more sand in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

*Dissimilar soils:*

- The well drained Jasper and Martinsville soils on summits

### ***Properties and Qualities of the Beardstown Soil***

*Parent material:* Outwash and loamy and sandy sediments

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Low

*Apparent seasonal high water table (depth, months):* 0.5 foot to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Not hydric

## ***Billett Series***

*Drainage class:* Well drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Outwash

*Slope range:* 0 to 5 percent

*Taxonomic classification:* Coarse-loamy, mixed, superactive, mesic Mollic Hapludalfs

### ***Typical Pedon***

Billett sandy loam, 0 to 2 percent slopes; at an elevation of about 740 feet; about 5 miles southeast of Rockford; 520 feet south and 1,840 feet west of the center of sec. 13, T. 43 N., R. 2 E.; Winnebago County, Illinois; USGS Cherry Valley topographic quadrangle; lat. 42 degrees 12 minutes 08 seconds N. and long. 88 degrees 57 minutes 25 seconds W., NAD 27; UTM Zone 16, Easting 0338425, Northing 4674067, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) sandy loam, grayish brown (10YR 5/2) dry; weak medium granular structure; very friable; many fine roots; moderately acid; abrupt smooth boundary.

E—8 to 13 inches; brown (10YR 4/3) sandy loam; weak medium subangular blocky structure; friable; few fine roots; moderately acid; abrupt smooth boundary.

Bt1—13 to 21 inches; dark yellowish brown (10YR 4/4) sandy loam; weak coarse subangular blocky structure; friable; few fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and clay bridges between

sand grains; few very dark grayish brown (10YR 3/2) worm channel fillings; slightly acid; clear smooth boundary.

- Bt2—21 to 28 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium prismatic structure parting to weak coarse subangular blocky; friable; few fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and clay bridges between sand grains; slightly acid; clear smooth boundary.
- Bt3—28 to 41 inches; yellowish brown (10YR 5/4) loamy sand; weak coarse prismatic structure; very friable; few fine roots; very few distinct dark brown (10YR 3/3) clay bridges between sand grains; slightly acid; abrupt smooth boundary.
- Bt4—41 to 47 inches; brown (10YR 4/3) and dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; friable; few fine roots; few distinct very dark grayish brown (10YR 3/2) clay films on faces of peds; about 2 percent gravel; slightly acid; abrupt smooth boundary.
- C1—47 to 52 inches; dark yellowish brown (10YR 4/4) loamy sand; single grain; loose; few fine roots; about 8 percent gravel; slightly acid; abrupt smooth boundary.
- C2—52 to 60 inches; dark yellowish brown (10YR 4/4) gravelly loamy sand; single grain; loose; about 17 percent gravel; slightly acid.

### Range in Characteristics

*Depth to the base of soil development:* 24 to 60 inches

*Ap or A horizon:*

Hue—10YR or 7.5YR

Value—2 to 3

Chroma—1 to 3

Texture—sandy loam

*E horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—2 to 4

Texture—sandy loam or fine sandy loam

*Bt horizon:*

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 6

Texture—sandy loam or fine sandy loam; loamy sand included in the lower part

Content of gravel—less than 15 percent

*C horizon:*

Hue—10YR or 7.5YR

Value—4 to 7

Chroma—3 to 6

Texture—loamy sand, sand, loamy fine sand, or fine sand or the gravelly analogs of these textures

Content of gravel—less than 25 percent

## 332A—Billett sandy loam, 0 to 2 percent slopes

### Setting

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits

### **Map Unit Composition**

Billett and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a darker subsurface layer
- Soils that have less sand and more silt in the lower part of the profile

#### *Dissimilar soils:*

- The poorly drained Selmass soils on toeslopes
- The somewhat poorly drained Hoopeston and Lahoguess soils on summits and footslopes

### **Properties and Qualities of the Billett Soil**

*Parent material:* Outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderately rapid

*Permeability below a depth of 60 inches:* Rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Low

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Low for steel and moderate for concrete

*Surface runoff class:* Very low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Moderately high

### **Interpretive Groups**

*Land capability classification:* 3s

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **332B—Billett sandy loam, 2 to 5 percent slopes**

### **Setting**

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits and shoulders

### **Map Unit Composition**

Billett and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a thicker dark surface layer
- Soils that have less sand and more silt in the lower part of the profile
- Soils that are moderately eroded

*Dissimilar soils:*

- The poorly drained Selmass soils on toeslopes
- The somewhat poorly drained Hoopeston and Lahoguess soils on summits and footslopes

***Properties and Qualities of the Billett Soil****Parent material:* Outwash*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderately rapid*Permeability below a depth of 60 inches:* Rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 6.1 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 1.0 to 2.0 percent*Shrink-swell potential:* Low*Ponding:* None*Flooding:* None*Potential for frost action:* Moderate*Hazard of corrosion:* Low for steel and moderate for concrete*Surface runoff class:* Very low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Moderately high***Interpretive Groups****Land capability classification:* 3s*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric***Brenton Series****Drainage class:* Somewhat poorly drained*Landform:* Stream terraces and outwash plains*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***

Brenton silt loam, 0 to 2 percent slopes; 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.; McHenry County, Illinois; USGS Hebron topographic quadrangle; lat. 42 degrees 27 minutes 55 seconds N. and long. 88 degrees 27 minutes 48 seconds W., NAD 27; UTM Zone 16, Easting 0379688, Northing 4702477, NAD 83:

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 in the matrix; common fine distinct 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 distinct 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 faint 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 the loess or other silty material:* 24 to 40 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 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

*2Btg, 2Bt, or 2BC 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

*2Cg or 2C horizon:*

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—2 to 6

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

Content of gravel—less than 15 percent

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

### ***Setting***

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits and footslopes

### ***Map Unit Composition***

Brenton and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have no subsurface layer
- Soils that have carbonates at a depth of less than 40 inches
- Soils that have sandy and gravelly deposits in the lower part of the profile
- Soils that have outwash beginning at a depth of less than 24 inches or more than 40 inches

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Brenton Soil***

*Parent material:* Loess or other silty material and the underlying outwash

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## ***Camden Series***

*Drainage class:* Well drained

*Landform:* Stream terraces and outwash plains

*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 Hapludalfs

### Typical Pedon

Camden silt loam, 0 to 2 percent slopes; 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.; McHenry County, Illinois; USGS Capron topographic quadrangle; lat. 42 degrees 23 minutes 07 seconds N. and long. 88 degrees 41 minutes 33 seconds W., NAD 27; UTM Zone 16, Easting 0360665, Northing 4693956, NAD 83:

- 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) silt coatings 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) silt coatings 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) silt coatings 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) silt coatings 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) silt coatings 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.
- 2C—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.

### Range in Characteristics

*Thickness of the loess or other silty material:* 24 to 40 inches

*Depth to carbonates:* 60 inches or more

*Depth to the base of soil development:* 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—stratified silt loam to loamy sand  
 Content of gravel—less than 13 percent

**134A—Camden silt loam, 0 to 2 percent slopes*****Setting***

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits

***Map Unit Composition***

Camden and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have outwash beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have a darker surface layer
- Soils that have sandy and gravelly deposits at a depth of less than 60 inches
- Soils that have a seasonal high water table within a depth of 6 feet

*Dissimilar soils:*

- The poorly drained Pella soils on toeslopes

***Properties and Qualities of the Camden Soil***

*Parent material:* Loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

## **Caprell Series**

*Drainage class:* Well drained  
*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-loamy, mixed, active, mesic Typic Hapludalfs

### **Typical Pedon**

Caprell silt loam, 4 to 6 percent slopes, eroded; at an elevation of 947 feet; 70 feet north and 290 feet west of the center of sec. 8, T. 46 N., R. 5 E.; McHenry County, Illinois; USGS Capron topographic quadrangle; lat. 42 degrees 28 minutes 50 seconds N. and long. 88 degrees 40 minutes 44 seconds W., NAD 27; UTM Zone 16, Easting 0361996, Northing 4704500, NAD 83:

- Ap—0 to 6 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; slightly acid; abrupt smooth boundary.
- E—6 to 10 inches; 90 percent brown (10YR 4/3) and 10 percent dark yellowish brown (10YR 4/4) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure parting to moderate thin platy; friable; common very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds and in pores; moderately acid; abrupt smooth boundary.
- Bt1—10 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 brown (10YR 4/3) clay films and dark brown (10YR 3/3) organo-clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and in pores; slightly acid; clear wavy boundary.
- 2Bt2—16 to 22 inches; brown (7.5YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; few distinct brown (7.5YR 4/3) clay films on faces of peds; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds and in pores; 2 percent gravel; slightly acid; clear smooth boundary.
- 2Bt3—22 to 33 inches; brown (7.5YR 4/4) fine sandy loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct brown (7.5YR 4/3) clay films on faces of peds; few distinct

dark brown (7.5YR 3/2) organo-clay films on faces of peds and in pores; 4 percent gravel; neutral; clear smooth boundary.

2Bt4—33 to 38 inches; brown (7.5YR 4/4) fine sandy loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; few distinct brown (7.5YR 4/3) clay films on faces of peds; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds and in pores; 6 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Bt5—38 to 47 inches; 55 percent dark yellowish brown (10YR 4/4) and 45 percent yellowish brown (10YR 5/4) sandy loam; weak medium prismatic structure parting to weak medium and coarse subangular blocky; friable; few very fine roots; few distinct brown (10YR 4/3) clay films and very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; 8 percent gravel; strongly effervescent; slightly alkaline; gradual smooth boundary.

2C—47 to 60 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) linings in root channels and in pores; 10 percent gravel; violently effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the loess or other silty material:* Less than 20 inches

*Depth to carbonates:* 24 to 40 inches

*Depth to the base of soil development:* 24 to 52 inches

*Ap or A horizon:*

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—1 to 3

Texture—silt loam

*E horizon (where present):*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam

*Bt or 2Bt horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—clay loam, loam, or silty clay loam; sandy loam, fine sandy loam, or sandy clay loam included in the lower part

*2C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—loam, sandy loam, or fine sandy loam

Content of gravel—less than 15 percent

## 624B—Caprell silt loam, 2 to 4 percent slopes

### Setting

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and summits

### **Map Unit Composition**

Caprell and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that are moderately eroded
- Soils that have a thicker, darker surface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have carbonates beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have less sand and more silt in the middle part of the subsoil

#### *Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### **Properties and Qualities of the Caprell Soil**

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **624C2—Caprell silt loam, 4 to 6 percent slopes, eroded**

### **Setting**

*Landform:* Ground moraines and end moraines

*Position on the landform:* Shoulders and backslopes

### **Map Unit Composition**

Caprell and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a thicker, darker surface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have carbonates beginning at a depth of less than 24 inches or more than 40 inches

- Soils that have less sand and more silt in the middle part of the subsoil
- Soils that have slopes of less than 4 percent or more than 6 percent

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

***Properties and Qualities of the Caprell Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

**624D2—Caprell silt loam, 6 to 12 percent slopes, eroded**

***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes

***Map Unit Composition***

Caprell and similar soils: 88 percent

Dissimilar soils: 12 percent

***Components of Minor Extent***

*Similar soils:*

- Soils that have a thicker, darker surface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have carbonates beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have less sand and more silt in the middle part of the subsoil
- Soils that have slopes of less than 6 percent or more than 12 percent

*Dissimilar soils:*

- The somewhat poorly drained Lamartine soils on summits and footslopes

***Properties and Qualities of the Caprell Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 10.0 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 2.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

#### ***Interpretive Groups***

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

## **624E—Caprell silt loam, 12 to 20 percent slopes**

#### ***Setting***

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

#### ***Map Unit Composition***

Caprell and similar soils: 88 percent  
 Dissimilar soils: 12 percent

#### ***Components of Minor Extent***

##### *Similar soils:*

- Soils that are moderately eroded
- Soils that have carbonates beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have less sand and more silt in the middle part of the subsoil
- Soils that have slopes of less than 12 percent or more than 20 percent

##### *Dissimilar soils:*

- The somewhat poorly drained Lamartine soils on summits and footslopes

#### ***Properties and Qualities of the Caprell Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying till  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 10.1 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 4e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Casco Series**

*Drainage class:* Somewhat excessively drained

*Landform:* Kames, outwash plains, and end moraines

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Slope range:* 12 to 20 percent

*Taxonomic classification:* Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Inceptic Hapludalfs

### **Typical Pedon**

Casco loam, 2 to 6 percent slopes; at an elevation of 1,054 feet; 100 feet north and 200 feet east of the southwest corner of the southeast quarter of sec. 6, T. 14 N., R. 20 E.; Sheboygan County, Wisconsin; USGS Dundee, Wisconsin, topographic quadrangle; lat. 43 degrees 42 minutes 13 seconds N. and long. 88 degrees 08 minutes 57 seconds W., NAD 27; UTM Zone 16, Easting 0407401, Northing 4839595, NAD 83:

- 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 glaciofluvial deposits:* 10 to 20 inches

*Depth to carbonates:* 10 to 20 inches

*Depth to the base of soil development:* 10 to 20 inches

*Ap or A horizon:*

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 or 3

Texture—loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Texture—clay loam, sandy clay loam, or 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; stratified in some pedons

Content of gravel—10 to 70 percent

## **969E2—Casco-Rodman complex, 12 to 20 percent slopes, eroded**

### ***Setting***

*Landform:* Kames, outwash plains, and end moraines

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Casco and similar soils: 50 percent

Rodman and similar soils: 40 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have sandy and gravelly deposits beginning at a depth of more than 20 inches
- Soils that have carbonates at or near the surface
- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Kane soils on footslopes

### ***Properties and Qualities of the Casco Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Drainage class:* Somewhat excessively drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 4.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and low for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### ***Properties and Qualities of the Rodman Soil***

*Parent material:* Sandy and gravelly glaciofluvial deposits  
*Drainage class:* Excessively drained  
*Slowest permeability within a depth of 40 inches:* Moderately rapid  
*Permeability below a depth of 60 inches:* Very rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 2.6 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 3.0 percent  
*Shrink-swell potential:* Low  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Low  
*Hazard of corrosion:* Low for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* High  
*Susceptibility to wind erosion:* Negligible

### ***Interpretive Groups***

*Land capability classification:* Casco—6e; Rodman—6s  
*Prime farmland category:* Not prime farmland  
*Hydric soil status:* Casco—not hydric; Rodman—not hydric

### ***Chelsea Series***

*Drainage class:* Excessively drained  
*Landform:* Stream terraces, outwash plains, and dunes  
*Parent material:* Eolian deposits  
*Slope range:* 1 to 12 percent  
*Taxonomic classification:* Mixed, mesic Lamellic Udipsamments

### ***Typical Pedon***

Chelsea loamy fine sand, 6 to 12 percent slopes; at an elevation of 778 feet; 700 feet south and 1,400 feet east of the northwest corner of sec. 4, T. 28 N., R. 11 E.; Winnebago County, Illinois; USGS Shirland topographic quadrangle; lat. 42 degrees 27 minutes 41 seconds N. and long. 89 degrees 14 minutes 18 seconds W., NAD 27; UTM Zone 16, Easting 0315949, Northing 4703452, NAD 83:

- A—0 to 4 inches; very dark grayish brown (10YR 3/2) loamy fine sand, brown (10YR 5/3) dry; weak fine granular structure; very friable; many fine roots; slightly acid; clear smooth boundary.
- E1—4 to 16 inches; brown (7.5YR 5/4) loamy sand; weak medium subangular blocky structure; very friable; common fine and medium roots; common distinct brown (10YR 4/3) clay films on faces of peds and clay bridges between sand grains; few very dark grayish brown (10YR 3/2) fillings in worm and root channels; slightly acid; clear wavy boundary.
- E2—16 to 35 inches; yellowish brown (10YR 5/4) loamy fine sand; weak coarse subangular blocky structure; very friable; common medium roots; few distinct brown (7.5YR 5/4) clay films on faces of peds and clay bridges between sand grains; moderately acid; clear wavy boundary.
- E and Bt—35 to 60 inches; yellowish brown (10YR 6/4) sand (E); single grain; loose; bands of brown (7.5YR 4/4) loamy sand and fine sandy loam (Bt); weak medium subangular blocky structure; friable; bands total 5 inches in thickness; moderately acid.

### Range in Characteristics

*Depth to lamellae:* 27 to 46 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—1 to 3

Texture—loamy fine sand

*E horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—2 to 6

Texture—fine sand, loamy fine sand, loamy sand, or sand

*E and Bt horizon (E part):*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 6

Texture—fine sand, sand, loamy fine sand, or loamy sand

*E and Bt horizon (Bt part):*

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—3 to 6

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

## 779B—Chelsea loamy fine sand, 1 to 6 percent slopes

### Setting

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Backslopes and summits

### Map Unit Composition

Chelsea and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have more clay in the upper one-half of the profile
- Soils that have gravelly deposits at a depth of less than 60 inches
- Soils that have a thicker, darker surface layer

*Dissimilar soils:*

- The well drained Backbone soils, which are moderately deep to bedrock; on shoulders and backslopes

### Properties and Qualities of the Chelsea Soil

*Parent material:* Eolian deposits

*Drainage class:* Excessively drained

*Slowest permeability within a depth of 40 inches:* Moderately rapid

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 0.5 to 1.5 percent

*Shrink-swell potential:* Low

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

#### ***Interpretive Groups***

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

## **779D—Chelsea loamy fine sand, 6 to 12 percent slopes**

### ***Setting***

*Landform:* Dunes and stream terraces  
*Position on the landform:* Backslopes

### ***Map Unit Composition***

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

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that have more clay in the upper one-half of the profile
- Soils that have gravelly deposits at a depth of less than 60 inches
- Soils that have a thicker, darker surface layer

#### *Dissimilar soils:*

- The well drained Backbone soils, which are moderately deep to bedrock; on backslopes

### ***Properties and Qualities of the Chelsea Soil***

*Parent material:* Eolian deposits  
*Drainage class:* Excessively drained  
*Slowest permeability within a depth of 40 inches:* Moderately rapid  
*Permeability below a depth of 60 inches:* Moderately rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 6.8 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 0.5 to 1.5 percent  
*Shrink-swell potential:* Low  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Low  
*Hazard of corrosion:* Low for steel and high for concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* High

#### ***Interpretive Groups***

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

## ***Comfrey Series***

*Drainage class:* Poorly drained

*Landform:* Flood plains

*Parent material:* Alluvium

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls

### **Typical Pedon**

Comfrey loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 725 feet; 570 feet north and 1,400 feet west of the center of sec. 25, T. 43 N., R. 2 E.; Winnebago County, Illinois; USGS Cherry Valley topographic quadrangle; lat. 42 degrees 10 minutes 32 seconds N. and long. 88 degrees 57 minutes 17 seconds W., NAD 27; UTM Zone 16, Easting 0338549, Northing 4671120, NAD 83:

- Ap—0 to 7 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; many very fine roots; neutral; clear smooth boundary.
- A1—7 to 15 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine roots; many distinct black (N 2.5/) organic coatings on faces of peds; common fine brown (7.5YR 4/4) very weakly cemented iron oxide concretions throughout; neutral; clear smooth boundary.
- A2—15 to 26 inches; very dark gray (10YR 3/1) loam, gray (10YR 5/1) dry; weak fine and medium granular structure; friable; common very fine roots; many distinct black (N 2.5/) organic coatings on faces of peds; common fine brown (7.5YR 4/4) very weakly cemented iron oxide concretions throughout; neutral; clear smooth boundary.
- Bg—26 to 37 inches; gray (2.5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; common very fine roots; few distinct very dark gray (2.5Y 3/1) organic coatings on faces of peds and in pores; many fine and medium yellowish brown (10YR 5/6) very weakly cemented iron oxide concretions throughout; common fine distinct gray (10YR 6/1) iron depletions in the matrix; neutral; gradual smooth boundary.
- Cg1—37 to 57 inches; gray (5Y 5/1), stratified clay loam and loam; massive; friable; few very fine roots; many fine and medium yellowish brown (10YR 5/6) very weakly cemented iron oxide concretions throughout; common fine prominent gray (10YR 6/1) iron depletions in the matrix; neutral; gradual smooth boundary.
- Cg2—57 to 63 inches; 40 percent gray (5Y 5/1), 30 percent yellowish brown (10YR 5/6), and 30 percent dark gray (2.5Y 4/1), stratified loam and sandy loam; massive; friable; 12 percent gravel; neutral.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 24 to 36 inches

*Depth to carbonates:* More than 18 inches

*Depth to the base of soil development:* 24 to 50 inches

*Ap or A horizon:*

Hue—10YR, 2.5Y, or N

Value—2 to 3

Chroma—0 or 1

Texture—loam or clay loam

*Bg horizon:*

Hue—10YR, 2.5Y, 5Y, or N  
 Value—3 to 5  
 Chroma—0 to 2  
 Texture—loam, clay loam, or silty clay loam

*Cg horizon:*

Hue—2.5Y or 5Y  
 Value—4 or 5  
 Chroma—1 or 2  
 Texture—loam, clay loam, or sandy loam or stratified with these textures  
 Content of gravel—less than 15 percent

## **1776A—Comfrey loams, undrained, 0 to 2 percent slopes, commonly flooded**

### ***Setting***

*Landform:* Flood plains (fig. 5)

### ***Map Unit Composition***

Comfrey, frequently flooded, and similar soils: 0 to 100 percent  
 Comfrey, occasionally flooded, and similar soils: 0 to 100 percent  
 Dissimilar soils: 0 to 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a thinner subsurface layer
- Soils that have less sand and more silt in the upper two-thirds of the profile
- Soils that have more gravel in the lower part of the profile

*Dissimilar soils:*

- The very poorly drained Houghton and Palms soils on toeslopes

### ***Properties and Qualities of the Frequently Flooded Comfrey Soil***

*Parent material:* Alluvium

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 5.0 to 7.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 0.5 foot below the surface, November through June

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, November through June

*Flooding (frequency, months):* Frequent, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low



Figure 5.—An area of Comfrey loams, undrained, 0 to 2 percent slopes, commonly flooded, used as habitat for wetland wildlife.

### ***Properties and Qualities of the Occasionally Flooded Comfrey Soil***

*Parent material:* Alluvium

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 5.0 to 7.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 0.5 foot below the surface, November through June

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, November through June

*Flooding (frequency, months):* Occasional, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* Comfrey soils—5w

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Comfrey soils—hydric

## **3776A—Comfrey loam, 0 to 2 percent slopes, frequently flooded**

### ***Setting***

*Landform:* Flood plains

### ***Map Unit Composition***

Comfrey and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that have a thinner subsurface layer
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile

#### *Dissimilar soils:*

- The very poorly drained Houghton soils on flood plains
- The poorly drained, calcareous Millington soils on flood plains

### ***Properties and Qualities of the Comfrey Soil***

*Parent material:* Alluvium

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 5.0 to 7.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding (frequency, months):* Frequent, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3w

*Prime farmland category:* Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season

*Hydric soil status:* Hydric

## **8776A—Comfrey loam, 0 to 2 percent slopes, occasionally flooded**

### ***Setting***

*Landform:* Flood plains

### ***Map Unit Composition***

Comfrey and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a thinner subsurface layer
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile

#### *Dissimilar soils:*

- The very poorly drained Houghton soils on flood plains
- The poorly drained, calcareous Millington soils on flood plains

### **Properties and Qualities of the Comfrey Soil**

*Parent material:* Alluvium

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 5.0 to 7.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding (frequency, months):* Occasional, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Hydric

## **Dakota Series**

*Drainage class:* Well drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Loamy and sandy outwash

*Slope range:* 0 to 2 percent

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

### **Typical Pedon**

Dakota loam, 0 to 2 percent slopes; at an elevation of about 795 feet; 1,600 feet north and 2,000 feet west of the southeast corner of sec. 21, T. 44 N., R. 5 E.; McHenry County, Illinois; USGS Garden Prairie topographic quadrangle; lat. 42 degrees 16 minutes 26 seconds N. and long. 88 degrees 39 minutes 17 seconds W., NAD 27; UTM Zone 16, Easting 0363532, Northing 4681526, NAD 83:

Ap—0 to 11 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; moderate medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; common distinct black (10YR 2/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

Bt1—11 to 19 inches; dark yellowish brown (10YR 4/4) 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; few distinct very dark brown (10YR 2/2) and very dark grayish brown (10YR 3/2) organic coatings on faces of peds; 1 percent gravel; neutral; clear smooth boundary.

Bt2—19 to 30 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; 3 percent gravel; moderately acid; clear smooth boundary.

2Bt3—30 to 34 inches; dark yellowish brown (10YR 4/4) 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; 1 percent gravel; moderately acid; clear smooth boundary.

2C1—34 to 46 inches; dark yellowish brown (10YR 4/6) loamy sand; single grain; loose; few very fine roots; 1 percent gravel; moderately acid; gradual smooth boundary.

2C2—46 to 60 inches; yellowish brown (10YR 5/6) sand; single grain; loose; 3 percent gravel; slightly effervescent; slightly alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 18 inches

*Depth to sandy outwash:* 20 to 40 inches

*Depth to carbonates:* More than 45 inches

*Depth to the base of soil development:* 24 to 45 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Texture—clay loam, loam, or sandy clay loam

*2Bt or 2BC horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Texture—sandy loam or loamy sand

*2C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 6

Texture—loamy sand, sand, or coarse sand or the gravelly analogs of these textures

Content of gravel—0 to 25 percent

## 379A—Dakota loam, 0 to 2 percent slopes

### Setting

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits

### **Map Unit Composition**

Dakota and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a thinner surface layer
- Soils that have carbonates at a depth of less than 45 inches
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have sandy outwash beginning at a depth of more than 40 inches

#### *Dissimilar soils:*

- The poorly drained Selmass soils on toeslopes
- The somewhat poorly drained Lahoguess soils on summits and footslopes

### **Properties and Qualities of the Dakota Soil**

*Parent material:* Loamy and sandy outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 7.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2s

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Danabrook Series**

*Drainage class:* Moderately well drained

*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 dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalf.

### **Typical Pedon**

Danabrook silt loam, 2 to 5 percent slopes; 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.; De Kalb County, Illinois; USGS Riley topographic quadrangle; lat. 42 degrees 09 minutes 09 seconds N.

and long. 88 degrees 40 minutes 28 seconds W., NAD 27; UTM Zone 16, Easting 0361649, Northing 4668068, NAD 83:

- 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 faint 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 faint 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 faint 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 faint 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; few fine distinct 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 distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine distinct 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 distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine distinct 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 or dark surface layer:* 7 to 18 inches

*Thickness of the loess or other silty material:* 22 to 40 inches

*Depth to carbonates:* 30 to 50 inches

*Depth to the base of soil development:* 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

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

*Landform:* Ground moraines and end moraines

*Position on the landform:* Summits

***Map Unit Composition***

Danabrook and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have slopes of more than 2 percent
- Soils that have no 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 have more sand and less silt in the upper and middle parts of the subsoil

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

***Properties and Qualities of the Danabrook Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

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

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Summits and backslopes

### ***Map Unit Composition***

Danabrook and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have no 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 have more sand and less silt in the upper and middle parts of the subsoil

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Danabrook Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

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

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Shoulders and backslopes

### ***Map Unit Composition***

Danabrook and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have slopes of less than 5 percent or more than 10 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 have more sand and less silt in the upper and middle parts of the subsoil

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Danabrook Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## ***Dickinson Series***

*Drainage class:* Well drained

*Landform:* Stream terraces and outwash plains

*Parent material:* Outwash

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Coarse-loamy, mixed, superactive, mesic Typic Hapludolls

### Typical Pedon

Dickinson sandy loam, 0 to 2 percent slopes; at an elevation of about 785 feet; 1,048 feet south and 214 feet west of the northeast corner of sec. 31, T. 44 N., R. 5 E.; McHenry County, Illinois; USGS Garden Prairie topographic quadrangle; lat. 42 degrees 15 minutes 09 seconds N. and long. 88 degrees 41 minutes 14 seconds W., NAD 27; UTM Zone 16, Easting 0360807, Northing 4679177, NAD 83:

- Ap—0 to 8 inches; very dark brown (10YR 2/2) sandy loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure parting to weak medium granular; friable; common very fine roots; strongly acid; clear smooth boundary.
- A—8 to 14 inches; very dark brown (10YR 2/2) sandy loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to moderate medium granular; friable; common very fine roots; moderately acid; clear smooth boundary.
- AB—14 to 18 inches; very dark grayish brown (10YR 3/2) sandy loam, brown (10YR 5/3) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine roots; moderately acid; clear smooth boundary.
- Bw—18 to 26 inches; brown (10YR 4/3) sandy loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; many distinct dark brown (10YR 3/3) organic coatings on faces of peds; 1 percent gravel; moderately acid; clear smooth boundary.
- BC—26 to 38 inches; dark yellowish brown (10YR 4/6) loamy sand; weak medium subangular blocky structure; very friable; common very fine roots; slightly acid; gradual smooth boundary.
- C—38 to 60 inches; 90 percent dark yellowish brown (10YR 4/6) and 10 percent dark yellowish brown (10YR 4/4), stratified sand and loamy sand; single grain; loose; 1 percent gravel; slightly acid.

### Range in Characteristics

*Thickness of the mollic epipedon:* 12 to 20 inches

*Depth to the base of soil development:* 24 to 50 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—sandy loam

*Bw horizon:*

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—sandy loam or fine sandy loam

*C horizon:*

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—loamy sand, sand, loamy fine sand, or fine sand

## 87A—Dickinson sandy loam, 0 to 2 percent slopes

### Setting

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits

### **Map Unit Composition**

Dickinson and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have no subsurface layer
- Soils that are darker in the upper part of the subsoil
- Soils that have more clay in the subsoil
- Soils that are calcareous in the lower part of the profile

#### *Dissimilar soils:*

- The poorly drained Selmass soils on toeslopes
- The somewhat poorly drained Hoopeston soils on summits and footslopes

### **Properties and Qualities of the Dickinson Soil**

*Parent material:* Outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderately rapid

*Permeability below a depth of 60 inches:* Rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Low

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Low for steel and moderate for concrete

*Surface runoff class:* Very low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Moderately high

### **Interpretive Groups**

*Land capability classification:* 3s

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Dodgeville Series**

*Drainage class:* Well drained

*Landform:* Hillslopes

*Parent material:* Thin layer of loess over clayey residuum derived from limestone and dolomite

*Slope range:* 2 to 15 percent

*Taxonomic classification:* Fine-silty over clayey, mixed, superactive, mesic Typic Argiudolls

### **Typical Pedon**

Dodgeville silt loam, in an area of Rockton and Dodgeville soils, 2 to 5 percent slopes; at an elevation of 935 feet; 201 feet north and 60 feet east of the southwest corner of sec. 18, T. 28 N., R. 10 E.; Winnebago County, Illinois; USGS David topographic quadrangle; lat. 42 degrees 25 minutes 07 seconds N. and long. 89 degrees 23 minutes 52 seconds W., NAD 27; UTM Zone 16, Easting 0302706, Northing 4699055, NAD 83:

- Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; many fine roots; neutral; abrupt smooth boundary.
- A—8 to 12 inches; 50 percent very dark grayish brown (10YR 3/2) and 50 percent dark brown (10YR 3/3) silt loam, grayish brown (10YR 5/2) dry; moderate medium and fine granular structure; friable; many fine roots; neutral; clear smooth boundary.
- Bt1—12 to 21 inches; brown (7.5YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common fine roots; many distinct dark brown (7.5YR 3/2) and brown (7.5YR 4/2) clay films on faces of peds; few chert pebbles 5 millimeters in diameter; slightly acid; clear smooth boundary.
- 2Bt2—21 to 26 inches; dark reddish brown (5YR 3/4) silty clay; moderate medium subangular blocky structure; firm; common fine roots; common distinct dark reddish brown (5YR 3/3) clay films on faces of peds; few igneous pebbles and common chert pebbles 1 to 5 millimeters in diameter; strongly acid; clear smooth boundary.
- 2Bt3—26 to 36 inches; dark reddish brown (5YR 3/4) clay; moderate medium prismatic structure parting to moderate medium and fine angular blocky; firm; common fine roots; common distinct dark reddish brown (5YR 3/3) clay films on faces of peds; strongly acid; abrupt smooth boundary.
- 2R—36 inches; fractured dolomite bedrock.

### Range in Characteristics

*Thickness of the loess:* 15 to 30 inches

*Depth to lithic contact:* 20 to 40 inches

*Depth to the base of soil development:* 20 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam

*Bt horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 or 4

Texture—silt loam or silty clay loam

*2Bt horizon:*

Hue—7.5YR, 5YR, or 2.5YR

Value—3 to 5

Chroma—3 to 5

Texture—silty clay or clay

## 566B—Rockton and Dodgeville soils, 2 to 5 percent slopes

### Setting

*Landform:* Hillslopes

*Position on the landform:* Shoulders and summits

### Map Unit Composition

Rockton and similar soils: 46 percent

Dodgeville and similar soils: 44 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that are moderately eroded
- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that are shallow or deep to bedrock

#### *Dissimilar soils:*

- The well drained Argyle and Winnebago soils, which are very deep to bedrock; on summits and shoulders

### ***Properties and Qualities of the Rockton Soil***

*Parent material:* Loamy drift over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 4.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Properties and Qualities of the Dodgeville Soil***

*Parent material:* Thin layer of loess over clayey residuum derived from dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 5.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Rockton—not hydric; Dodgeville—not hydric

## 566C2—Rockton and Dodgeville soils, 5 to 10 percent slopes, eroded

### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Backslopes and shoulders

### **Map Unit Composition**

Rockton and similar soils: 46 percent

Dodgeville and similar soils: 44 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

*Similar soils:*

- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that are shallow or deep to bedrock

*Dissimilar soils:*

- The well drained Argyle and Winnebago soils, which are very deep to bedrock; on shoulders

### **Properties and Qualities of the Rockton Soil**

*Parent material:* Loamy drift over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 4.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Properties and Qualities of the Dodgeville Soil**

*Parent material:* Thin layer of loess over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 5.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Rockton—not hydric; Dodgeville—not hydric

## **566D2—Rockton and Dodgeville soils, 10 to 15 percent slopes, eroded**

### ***Setting***

*Landform:* Hillslopes

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Rockton and similar soils: 46 percent

Dodgeville and similar soils: 44 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that are shallow or deep to bedrock
- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 10 percent or more than 15 percent

*Dissimilar soils:*

- The well drained Winnebago soils, which are very deep to bedrock; on shoulders and backslopes

### ***Properties and Qualities of the Rockton Soil***

*Parent material:* Loamy drift over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 4.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### ***Properties and Qualities of the Dodgeville Soil***

*Parent material:* Thin layer of loess over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 3.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* High

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 4e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Rockton—not hydric; Dodgeville—not hydric

### ***Dresden Series***

*Drainage class:* Well drained

*Landform:* Kames, stream terraces, and outwash plains

*Parent material:* Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Slope range:* 2 to 6 percent

*Taxonomic classification:* Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs

### ***Typical Pedon***

Dresden silt loam, 2 to 4 percent slopes; 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.; Kane County, Illinois; USGS Elgin topographic quadrangle; lat. 42 degrees 01 minute 10 seconds N. and long. 88 degrees 20 minutes 10 seconds W., NAD 27; UTM Zone 16, Easting 0389373, Northing 4652802, NAD 83:

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 the loess or other silty material:* Less than 20 inches

*Depth to sandy and gravelly glaciofluvial deposits:* 24 to 40 inches

*Depth to carbonates:* 24 to 40 inches

*Depth to the base of soil development:* 24 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—2 or 3

Texture—silt 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, silt loam, or sandy clay loam; the gravelly or very gravelly analogs of these textures included in the lower part

Content of gravel—less than 45 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; stratified in some pedons

Content of gravel—20 to 75 percent

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

### Setting

*Landform:* Kames, stream terraces, and outwash plains

*Position on the landform:* Summits and backslopes

### Map Unit Composition

Dresden and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a thicker dark surface layer
- Soils that have less sand and more silt in the middle part of the subsoil
- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches

*Dissimilar soils:*

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

### ***Properties and Qualities of the Dresden Soil***

*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

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

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

### ***Setting***

*Landform:* Kames, stream terraces, and outwash plains

*Position on the landform:* Shoulders and backslopes

### ***Map Unit Composition***

Dresden and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have less sand and more silt in the middle part of the subsoil
- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches

*Dissimilar soils:*

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

### ***Properties and Qualities of the Dresden Soil***

*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

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Drummer Series**

*Drainage class:* Poorly drained

*Landform:* Ground moraines and outwash plains

*Parent material:* Loess over outwash

*Slope range:* 0 to 2 percent

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

### **Typical Pedon**

Drummer silty clay loam, 0 to 2 percent slopes; 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.; Champaign County, Illinois; USGS Urbana topographic quadrangle; lat. 40 degrees 05 minutes 04 seconds N. and long. 88 degrees 13 minutes 58 seconds W., NAD 27; UTM Zone 16, Easting 0394895, Northing 4437861, NAD 83:

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

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

BA—14 to 19 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium subangular blocky structure; firm; many fine and medium roots; few fine faint very dark grayish brown (2.5Y 3/2) masses of 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 prominent yellowish brown (10YR 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/) 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/) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few fine roots; few distinct dark gray (N 4/) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

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

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 24 inches

*Thickness of the loess:* 40 to 60 inches

*Depth to carbonates:* 40 to 65 inches

*Depth to the base of soil development:* 40 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 or silt 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, 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 loamy sand to silty clay loam

Content of gravel—less than 15 percent

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

### Setting

*Landform:* Ground moraines and outwash plains

*Position on the landform:* Toeslopes (fig. 6)

### Map Unit Composition

Drummer and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches



**Figure 6.—A typical landscape in an area of nearly level Drummer soils and gently sloping to strongly sloping Kidder soils. Drummer soils are to the right, and Kidder soils are to the left and in the background.**

- Soils that have till in the lower part of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have a thicker surface soil
- Soils that are overlain by light-colored recent deposits

*Dissimilar soils:*

- The very poorly drained Houghton soils on toeslopes
- The somewhat poorly drained Elburn and Virgil soils on footslopes and summits

***Properties and Qualities of the Drummer Soil***

*Parent material:* Loess over outwash

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 12.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 7.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Hydric

## **152A+—Drummer silt loam, 0 to 2 percent slopes, overwash**

### ***Setting***

*Landform:* Outwash plains and ground moraines

*Position on the landform:* Toeslopes

### ***Map Unit Composition***

Drummer and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that do not have overwash or have more than 20 inches of overwash
- Soils that have more sand and less silt in the upper part of the profile

*Dissimilar soils:*

- The very poorly drained Houghton soils on toeslopes
- The somewhat poorly drained Elburn and Virgil soils on footslopes and summits

### ***Properties and Qualities of the Drummer Soil***

*Parent material:* Loess over outwash

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 13.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Hydric

## ***Dunbarton Series***

*Drainage class:* Well drained

*Landform:* Hillslopes

*Parent material:* Thin mantle of loess over clayey pedis sediment and/or residuum derived from dolomite

*Slope range:* 6 to 20 percent

*Taxonomic classification:* Clayey, smectitic, mesic Lithic Hapludalfs

### **Typical Pedon**

Dunbarton silt loam, 6 to 12 percent slopes, eroded; at an elevation of about 855 feet; 420 feet north and 80 feet east of the southwest corner of sec. 30, T. 29 N., R. 10 E.; Winnebago County, Illinois; USGS Davis topographic quadrangle; lat. 42 degrees 28 minutes 43 seconds N. and long. 89 degrees 23 minutes 59 seconds W., NAD 27; UTM Zone 16, Easting 0302734, Northing 4705708, NAD 83:

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam; moderate very fine subangular blocky structure; friable; many fine roots; neutral; abrupt smooth boundary.

Bt1—5 to 10 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; many fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few pebbles and stones; neutral; abrupt smooth boundary.

2Bt2—10 to 14 inches; brown (7.5YR 4/4) clay loam; strong fine angular blocky structure; very firm; many fine roots; common faint brown (7.5YR 4/3) clay films on faces of peds; few pebbles; neutral; abrupt smooth boundary.

2Bt3—14 to 16 inches; dark reddish brown (5YR 3/4) clay; strong fine angular blocky structure; very firm; common fine roots; common faint dark reddish brown (5YR 3/3) clay films on faces of peds; neutral; abrupt wavy boundary.

2Cr—16 to 18 inches; brownish yellow (10YR 6/6), soft weathered fragments of dolomite; few fine roots; slightly effervescent; slightly alkaline; abrupt wavy boundary.

2R—18 inches; fractured dolomitic bedrock.

### **Range in Characteristics**

*Thickness of the loess:* Less than 15 inches

*Depth to lithic contact:* 12 to 20 inches

*Depth to the base of soil development:* 12 to 20 inches

*Ap or A horizon:*

Hue—10YR

Value—3 to 5

Chroma—2 to 4

Texture—silt loam

*Bt horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 or 4

Texture—silt loam or silty clay loam

*2Bt horizon:*

Hue—10YR, 7.5YR, or 5YR

Value—3 to 5

Chroma—3 to 6

Texture—silty clay, clay, clay loam, or silty clay loam

## 505D2—Dunbarton silt loam, 6 to 12 percent slopes, eroded

### *Setting*

*Landform:* Hillslopes

*Position on the landform:* Backslopes

### *Map Unit Composition*

Dunbarton and similar soils: 95 percent

Dissimilar soils: 5 percent

### *Components of Minor Extent*

*Similar soils:*

- Soils that are very shallow or moderately deep to bedrock
- Soils that have a darker surface layer
- Soils that have less clay in the subsoil

*Dissimilar soils:*

- Well drained soils that are deep to bedrock; on backslopes

### *Properties and Qualities of the Dunbarton Soil*

*Parent material:* Thin mantle of loess over clayey pedisegment and/or residuum derived from dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 12 to 20 inches to bedrock (lithic)

*Available water capacity:* About 3.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* High

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### *Interpretive Groups*

*Land capability classification:* 4e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## 505E2—Dunbarton silt loam, 12 to 20 percent slopes, eroded

### *Setting*

*Landform:* Hillslopes

*Position on the landform:* Backslopes

### **Map Unit Composition**

Dunbarton and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that are very shallow or moderately deep to bedrock
- Soils that have a darker surface layer
- Soils that have less clay in the subsoil

#### *Dissimilar soils:*

- Well drained soils that are deep to bedrock; on backslopes

### **Properties and Qualities of the Dunbarton Soil**

*Parent material:* Thin mantle of loess over clayey pedisegment and/or residuum derived from dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 12 to 20 inches to bedrock (lithic)

*Available water capacity:* About 2.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* High

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 6e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Dunham Series**

*Drainage class:* Poorly drained

*Landform:* Stream terraces and outwash plains

*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**

Dunham silty clay loam, 0 to 2 percent slopes; 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.; McHenry County, Illinois; USGS Capron topographic quadrangle; lat. 42 degrees 22 minutes 33 seconds N. and long. 88 degrees 38 minutes 16 seconds W., NAD 27; UTM Zone 16, Easting 0365154, Northing 4692807, NAD 83:

- Ap—0 to 6 inches; black (N 2.5/) 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/) 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.
- B<sub>Ag</sub>—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.
- B<sub>tg1</sub>—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.
- B<sub>tg2</sub>—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.
- B<sub>tg3</sub>—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.
- 2B<sub>tg4</sub>—35 to 39 inches; olive gray (5Y 5/2) 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.
- 3C<sub>g</sub>—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 the loess or other silty material:* 24 to 50 inches

*Depth to sandy and gravelly outwash:* 32 to 55 inches

*Depth to carbonates:* 30 to 50 inches

*Depth to the base of soil development:* 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

*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, or 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; stratified in many pedons

Content of gravel—15 to 70 percent

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

### Setting

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Toeslopes

### Map Unit Composition

Dunham and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have less gravel in the lower part of the profile
- Soils that have a thinner subsurface layer
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits beginning at a depth of less than 32 inches or more than 55 inches
- Soils that have carbonates beginning at a depth of more than 50 inches

*Dissimilar soils:*

- The very poorly drained Adrian and Houghton soils on toeslopes

***Properties and Qualities of the Dunham Soil***

*Parent material:* Loess or other silty material and the underlying loamy and gravelly outwash

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 6.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Hydric

***Elburn Series***

*Drainage class:* Somewhat poorly drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Loess over stratified loamy outwash

*Slope range:* 0 to 2 percent

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

***Typical Pedon***

Elburn silt loam, 0 to 2 percent slopes; at an elevation of about 617 feet; 2,716 feet north and 1,300 feet west of the southeast corner of sec. 36, T. 14 N., R. 1 E.; Christian County, Illinois; USGS Assumption topographic quadrangle; lat. 39 degrees 37 minutes 04.7 seconds N. and long. 89 degrees 01 minute 45.8 seconds W., NAD 27; UTM Zone 16, Easting 0325797, Northing 4387329, NAD 83:

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

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

Bt1—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct very dark gray (10YR

- 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation and few fine faint brown (10YR 5/3) masses of iron and manganese oxide in the matrix; few fine iron and manganese oxide concretions throughout; slightly acid; clear smooth boundary.
- Bt2—21 to 28 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine iron and manganese oxide concretions throughout; neutral; clear smooth boundary.
- Bt3—28 to 36 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine iron and manganese oxide concretions throughout; neutral; clear smooth boundary.
- Bt4—36 to 43 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; few prominent very dark gray (10YR 3/1) organo-clay films and few distinct brown (10YR 5/3) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; few fine iron and manganese oxide concretions throughout; slightly alkaline; clear smooth boundary.
- Btg—43 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine iron and manganese oxide concretions throughout; slightly alkaline; clear smooth boundary.
- 2BCtg—49 to 58 inches; grayish brown (2.5Y 5/2), stratified silt loam, loam, and sandy loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films lining pores; common medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few very fine iron and manganese oxide concretions throughout; slightly alkaline; clear smooth boundary.
- 2Cg—58 to 62 inches; grayish brown (2.5Y 5/2), stratified sandy loam and loamy sand; massive; very friable; common medium prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; slightly alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 19 inches

*Thickness of the loess:* 40 to 60 inches

*Depth to the base of soil development:* 40 to 70 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

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 silt loam

*2Bt, 2Btg, 2Bg, 2BC, 2BCt, 2BCtg, or 2BCg horizon:*

Hue—7.5YR, 10YR, or 2.5Y  
 Value—4 to 6  
 Chroma—2 to 8  
 Texture—stratified sandy loam, loam, or silt loam

*2C or 2Cg horizon:*

Hue—7.5YR, 10YR, or 2.5Y  
 Value—4 to 6  
 Chroma—2 to 8  
 Texture—stratified sandy loam or loamy sand

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

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits and footslopes

***Map Unit Composition***

Elburn and similar soils: 93 percent

Dissimilar soils: 7 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a lighter colored subsurface layer
- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have more sand and less clay and silt in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Sable, Drummer, and Thorp soils on toeslopes

***Properties and Qualities of the Elburn Soil***

*Parent material:* Loess over stratified loamy outwash

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.5 to 5.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Elco Series**

*Drainage class:* Moderately well drained

*Landform:* Ground moraines

*Parent material:* Loess over a paleosol that formed in till

*Slope range:* 2 to 5 percent

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

### **Typical Pedon**

Elco silt loam, 10 to 18 percent slopes, eroded; at an elevation of 730 feet; 2,000 feet south and 1,900 feet west of the northeast corner of sec. 20, T. 8 N., R. 2 W.; Warren County, Illinois; USGS Roseville topographic quadrangle; lat. 40 degrees 40 minutes 11 seconds N. and long. 90 degrees 38 minutes 38 seconds W., NAD 27; UTM Zone 15, Easting 0699136, Northing 4504768, NAD 83:

- A—0 to 2 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many fine roots; neutral; clear smooth boundary.
- E—2 to 9 inches; brown (10YR 5/3) and dark grayish brown (10YR 4/2) silt loam; moderate thin platy structure; very friable; many fine roots; common distinct very pale brown (10YR 7/3) (dry) silt coatings on faces of peds; neutral; abrupt smooth boundary.
- Bt1—9 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; many fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct very pale brown (10YR 8/3) (dry) silt coatings on faces of peds; dark grayish brown (10YR 4/2) krotovina; moderately acid; clear smooth boundary.
- Bt2—18 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; many fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct very pale brown (10YR 8/3) (dry) silt coatings on faces of peds; common fine prominent black (5YR 2.5/1) iron and manganese oxide stains and concretions throughout; strongly acid; clear smooth boundary.
- 2Bt3—26 to 32 inches; light yellowish brown (10YR 6/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few fine roots; common faint brown (10YR 5/3) clay films on faces of peds; common distinct very pale brown (10YR 8/3) (dry) silt coatings on faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine prominent black (5YR 2.5/1) iron and manganese oxide stains and concentrations throughout; strongly acid; clear smooth boundary.
- 2Bt4—32 to 45 inches; brown (10YR 5/3) clay; strong medium and coarse prismatic structure parting to strong medium and coarse subangular blocky; firm; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many fine prominent black (5YR 2.5/1) iron and manganese oxide stains and concentrations throughout; strongly acid; clear smooth boundary.

2Btg—45 to 60 inches; grayish brown (2.5YR 5/2) clay; moderate medium prismatic structure; firm; few fine roots; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; many medium and coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many fine prominent black (5YR 2.5/1) iron and manganese oxide stains and concentrations throughout; moderately acid.

### **Range in Characteristics**

*Thickness of the loess:* 20 to 40 inches

*Depth to the base of soil development:* More than 48 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—3 or 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 or 2Btg horizon:*

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 to 6

Texture—loam, clay loam, silty clay loam, silty clay, clay, or silt loam

## **119B—Elco silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Shoulders and backslopes

### ***Map Unit Composition***

Elco and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that are moderately eroded
- Soils that have more sand and less silt in the upper part of the subsoil

*Dissimilar soils:*

- The somewhat poorly drained Kendall, Stronghurst, and Virgil soils on summits and footslopes

### ***Properties and Qualities of the Elco Soil***

*Parent material:* Loess over a paleosol that formed in till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow or moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* High

*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

### ***Elizabeth Series***

*Drainage class:* Somewhat excessively drained

*Landform:* Hillslopes

*Parent material:* Loamy residuum derived from limestone and dolomite

*Slope range:* 12 to 35 percent

*Taxonomic classification:* Loamy-skeletal, mixed, superactive, mesic Lithic Hapludolls

### ***Typical Pedon***

Elizabeth silt loam, 12 to 35 percent slopes; at an elevation of about 750 feet; about 1,900 feet west and 560 feet south of the northeast corner of sec. 10, T. 27 N., R. 2 E.; Jo Daviess County, Illinois; USGS Hanover topographic quadrangle; lat. 42 degrees 21 minutes 16 seconds N. and long. 90 degrees 15 minutes 57 seconds W., NAD 27; UTM Zone 15, Easting 0725184, Northing 4692752, NAD 83:

A1—0 to 6 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; many fine and very fine roots; less than 10 percent limestone cobbles; slightly alkaline; clear smooth boundary.

A2—6 to 10 inches; very dark grayish brown (10YR 3/2) cobbly silt loam, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure parting to moderate medium granular; friable; many fine and very fine roots; about 25 percent limestone cobbles; slightly effervescent; slightly alkaline; clear smooth boundary.

A3—10 to 19 inches; dark brown (10YR 3/3) extremely cobbly loam, brown (10YR 5/3) dry; moderate medium granular structure; friable; few fine and very fine roots; about 90 percent limestone cobbles (3 to 6 inches in the smallest dimension); slightly effervescent; slightly alkaline; diffuse wavy boundary.

2R—19 inches; fractured dolomitic limestone bedrock; dark silt loam in the fractures in the upper few inches.

### **Range in Characteristics**

*Depth to lithic contact:* 7 to 20 inches

*A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam, loam, clay loam, or silty clay loam or the cobbly, very cobbly, or extremely cobbly analogs of these textures

Content of rock fragments—less than 15 percent in the upper part and up to 90 percent in the lower part

## **403E—Elizabeth silt loam, 12 to 35 percent slopes**

### ***Setting***

*Landform:* Hillslopes

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Elizabeth and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have more clay in the subsoil

*Dissimilar soils:*

- Well drained soils that are deep to bedrock; on backslopes

### ***Properties and Qualities of the Elizabeth Soil***

*Parent material:* Loamy residuum derived from limestone and dolomite

*Drainage class:* Somewhat excessively drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow or moderately slow

*Depth to restrictive feature:* 7 to 20 inches to bedrock (lithic)

*Available water capacity:* About 2.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Low for steel and concrete

*Surface runoff class:* High

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 7s

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## ***Elliott Series***

*Drainage class:* Somewhat poorly drained

*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 Aquic Argiudolls

### **Typical Pedon**

Elliott silt loam, 0 to 2 percent slopes; 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.; Livingston County, Illinois; USGS Cullom topographic quadrangle; lat. 40 degrees 58 minutes 12 seconds N. and long. 88 degrees 19 minutes 19 seconds W., NAD 27; UTM Zone 16, Easting 0388762, Northing 4536262, NAD 83:

- 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 distinct 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 medium white (10YR 8/1) calcium carbonate concretions throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 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 distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 2 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.
- 2Cd—41 to 60 inches; olive brown (2.5Y 4/4) silty clay loam; massive; very 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 20 inches

*Thickness of the loess or other silty material:* Less than 20 inches

*Depth to carbonates:* 17 to 40 inches

*Depth to the base of soil development:* 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

*2Cd horizon:*

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 6

Texture—silty clay loam

Content of gravel—less than 15 percent

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

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Summits and footslopes

### ***Map Unit Composition***

Elliott and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that formed in more than 20 inches of loess
- Soils that have a thicker subsoil
- Soils that have more sand and less clay in the subsoil
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

*Dissimilar soils:*

- Poorly drained soils on toeslopes

### ***Properties and Qualities of the Elliott Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow

*Depth to restrictive feature:* 20 to 45 inches to dense material

*Available water capacity:* About 8.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.5 to 5.0 percent

*Shrink-swell potential:* High

*Perched seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through

May

*Ponding:* None

*Flooding:* None

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

### **Interpretive Groups**

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

## **Fayette Series**

*Drainage class:* Well drained  
*Landform:* Ground moraines  
*Parent material:* Loess  
*Slope range:* 2 to 10 percent  
*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Typic Hapludalfs

### **Typical Pedon**

Fayette silt loam, 10 to 18 percent slopes, eroded; at an elevation of about 690 feet; 2,100 feet north and 1,700 feet west of the southeast corner of sec. 31, T. 12 N., R. 3 W.; Warren County, Illinois; USGS Rozetta topographic quadrangle; lat. 40 degrees 59 minutes 13 seconds N. and long. 90 degrees 46 minutes 18 seconds W., NAD 27; UTM Zone 15, Easting 0687438, Northing 4539703, NAD 83:

- Ap—0 to 5 inches; mixed dark grayish brown (10YR 4/2) and dark brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common fine roots throughout; moderately acid; clear smooth boundary.
- EB—5 to 9 inches; mixed brown (10YR 5/3) and yellowish brown (10YR 5/4) silt loam; weak medium platy structure parting to moderate fine subangular blocky; friable; common fine roots between peds; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; few fine roots between peds; common faint brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt2—13 to 27 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots between peds; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; gradual smooth boundary.
- Bt3—27 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few prominent dark brown (7.5YR 3/2) iron and manganese oxide accumulations on faces of peds; moderately acid; gradual wavy boundary.
- BC—38 to 55 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and coarse subangular blocky structure; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few prominent dark brown (7.5YR 3/2) iron and manganese oxide accumulations on faces of peds; moderately acid; clear wavy boundary.

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

### **Range in Characteristics**

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 36 to 70 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—1 to 3

Texture—silt loam

*E horizon (where present):*

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

*C horizon:*

Hue—10YR

Value—4 or 5

Chroma—4 to 6

Texture—silt loam

## **280B—Fayette silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Summits and shoulders (fig. 7)

### ***Map Unit Composition***

Fayette and similar soils: 97 percent

Dissimilar soils: 3 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a darker surface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till or outwash in the lower part of the profile
- Soils that have carbonates at a depth of less than 40 inches

*Dissimilar soils:*

- The somewhat poorly drained Atterberry and Stronghurst soils on summits

### ***Properties and Qualities of the Fayette Soil***

*Parent material:* Loess

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate



Figure 7.—An area of cropland in Boone County. Fayette soils are on a ground moraine in the foreground, which slopes down to St. Charles and Virgil soils on a stream terrace and (in the distance) to Orion, Comfrey, and Millington soils on the flood plain along Beaver Creek.

*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 11.6 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and high for concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

#### ***Interpretive Groups***

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

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

#### ***Setting***

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

### **Map Unit Composition**

Fayette and similar soils: 95 percent

Dissimilar soils: 5 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a darker surface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till or outwash in the lower part of the profile
- Soils that have carbonates at a depth of less than 40 inches

#### *Dissimilar soils:*

- The somewhat poorly drained Atterberry and Stronghurst soils on summits

### **Properties and Qualities of the Fayette Soil**

*Parent material:* Loess

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and high for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Flagg Series**

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Loess over a paleosol that formed in till

*Slope range:* 0 to 10 percent

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

### **Typical Pedon**

Flagg silt loam, 5 to 10 percent slopes, eroded; at an elevation of 840 feet; 2,600 feet north and 850 feet east of the southwest corner of sec. 20, T. 27 N., R. 9 E.;

Stephenson County, Illinois; USGS Ridott topographic quadrangle; lat. 42 degrees 19 minutes 25 seconds N. and long. 89 degrees 29 minutes 30 seconds W., NAD 27;

UTM Zone 16, Easting 0294666, Northing 4688715, NAD 83:

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

- BE—7 to 16 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable; neutral; gradual smooth boundary.
- Bt1—16 to 33 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; 5 percent pebbles; moderately acid; gradual wavy boundary.
- 2Bt2—33 to 41 inches; brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 4/3) clay films on faces of peds; 5 percent pebbles; moderately acid; gradual wavy boundary.
- 2Bt3—41 to 48 inches; brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 4/3) clay films on faces of peds; 5 percent pebbles; slightly acid; clear wavy boundary.
- 2Bt4—48 to 66 inches; yellowish red (5YR 4/6) silty clay loam; moderate medium subangular blocky structure; firm; common distinct reddish brown (5YR 4/4) clay films on faces of peds; 5 percent pebbles; neutral; gradual wavy boundary.
- 2Bt5—66 to 80 inches; strong brown (7.5YR 4/6) silty clay loam; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 4/4) clay films on faces of peds; 5 percent pebbles; neutral.

### Range in Characteristics

*Thickness of the loess:* 30 to 50 inches

*Depth to the base of soil development:* More than 60 inches

*Ap or A horizon:*

Hue—10YR

Value—3 to 5

Chroma—2 or 3

Texture—silt loam

*E horizon (where present):*

Hue—10YR

Value—4 or 5

Chroma—2 or 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—2.5YR, 5YR, or 7.5YR

Value—4 to 6

Chroma—4 to 6

Texture—clay loam, silty clay loam, or sandy clay loam

## 419A—Flagg silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Ground moraines

*Position on the landform:* Summits

### Map Unit Composition

Flagg and similar soils: 95 percent

Dissimilar soils: 5 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have till beginning at a depth of less than 30 inches or more than 50 inches
- Soils that are moderately eroded
- Soils that have carbonates at a depth of less than 60 inches
- Soils that have outwash in the lower part of the profile

#### *Dissimilar soils:*

- The somewhat poorly drained Kendall soils on summits and footslopes
- The somewhat poorly drained Stronghurst soils on summits

### **Properties and Qualities of the Flagg Soil**

*Parent material:* Loess over a paleosol that formed in till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and high for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **419B—Flagg silt loam, 2 to 5 percent slopes**

### **Setting**

*Landform:* Ground moraines

*Position on the landform:* Summits and shoulders

### **Map Unit Composition**

Flagg and similar soils: 95 percent

Dissimilar soils: 5 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have till beginning at a depth of less than 30 inches or more than 50 inches
- Soils that are moderately eroded
- Soils that have carbonates at a depth of less than 60 inches
- Soils that have outwash in the lower part of the profile

#### *Dissimilar soils:*

- The somewhat poorly drained Kendall soils on summits and footslopes
- The somewhat poorly drained Stronghurst soils on summits

### ***Properties and Qualities of the Flagg Soil***

*Parent material:* Loess over a paleosol that formed in till  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 9.8 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and high for concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

## **419C2—Flagg silt loam, 5 to 10 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines  
*Position on the landform:* Backslopes

### ***Map Unit Composition***

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

### ***Components of Minor Extent***

#### ***Similar soils:***

- Soils that have till beginning at a depth of less than 30 inches or more than 50 inches
- Soils that have carbonates at a depth of less than 60 inches
- Soils that have outwash in the lower part of the profile

#### ***Dissimilar soils:***

- The somewhat poorly drained Kendall soils on summits and footslopes
- The somewhat poorly drained Stronghurst soils on summits

### ***Properties and Qualities of the Flagg Soil***

*Parent material:* Loess over a paleosol that formed in till  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 8.5 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 0.8 to 2.5 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and high for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Flagler Series**

*Drainage class:* Somewhat excessively drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Moderately coarse textured alluvium over coarse textured alluvium

*Slope range:* 0 to 6 percent

*Taxonomic classification:* Coarse-loamy, mixed, superactive, mesic Typic Hapludolls

*Taxadjunct features:* The Flagler soil in map unit 783A has a thicker dark surface soil than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a coarse-loamy, mixed, superactive, mesic Pachic Hapludoll.

### **Typical Pedon**

Flagler sandy loam, 0 to 2 percent slopes; at an elevation of 725 feet; 1,260 feet north and 2,520 feet west of the southeast corner of sec. 5, T. 45 N., R. 2 E.; Winnebago County, Illinois; USGS South Beloit topographic quadrangle; lat. 42 degrees 24 minutes 05 seconds N. and long. 89 degrees 01 minute 46 seconds W., NAD 27; UTM Zone 16, Easting 0332974, Northing 4696354, NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) sandy loam, dark grayish brown (10YR 4/2) dry; moderate fine and very fine granular structure; friable; many fine roots; neutral; clear smooth boundary.

A1—8 to 15 inches; black (10YR 2/1) sandy loam, dark grayish brown (10YR 4/2) dry; moderate fine and very fine granular structure; friable; many fine roots; neutral; clear smooth boundary.

A2—15 to 23 inches; very dark brown (10YR 2/2) sandy loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; many fine roots; neutral; gradual smooth boundary.

BA—23 to 29 inches; brown (10YR 4/3) sandy loam; moderate medium subangular blocky structure; friable; common fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bw—29 to 33 inches; brown (10YR 4/3) sandy loam; moderate medium subangular blocky structure; very friable; few fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; 10 percent gravel; slightly acid; abrupt smooth boundary.

2BC1—33 to 36 inches; brown (7.5YR 4/4) gravelly loamy sand; weak medium subangular blocky structure; very friable; few fine roots; 34 percent gravel; neutral; abrupt smooth boundary.

2BC2—36 to 41 inches; strong brown (7.5YR 5/6) gravelly sand; weak fine subangular blocky structure; very friable; few fine roots; 29 percent gravel; neutral; clear smooth boundary.

2C—41 to 60 inches; yellowish brown (10YR 5/6) sand; single grain; loose; 14 percent gravel; neutral.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 12 to 24 inches

*Depth to the base of soil development:* 20 to 50 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—sandy loam

*Bw horizon:*

Hue—10YR or 7.5YR

Value—3 to 5

Chroma—3 to 6

Texture—sandy loam

*2BC or 2C horizon:*

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—4 to 6

Texture—loamy sand, sand, gravelly sand, or gravelly loamy sand

Content of gravel—2 to 35 percent

## **783A—Flagler sandy loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits

### ***Map Unit Composition***

Flagler and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a surface soil more than 24 inches thick
- Soils that have more sand and less clay in the surface layer
- Soils that have more clay and less silt in the surface layer
- Soils that contain less gravel in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Hoopston soils on footslopes and summits
- The poorly drained Marshan soils on toeslopes

### ***Properties and Qualities of the Flagler Soil***

*Parent material:* Moderately coarse textured alluvium over coarse textured alluvium

*Drainage class:* Somewhat excessively drained

*Slowest permeability within a depth of 40 inches:* Moderately rapid

*Permeability below a depth of 60 inches:* Rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 5.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Low  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Low for steel and moderate for concrete  
*Surface runoff class:* Very low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Moderately high

#### ***Interpretive Groups***

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

### **783B—Flagler sandy loam, 2 to 6 percent slopes**

#### ***Setting***

*Landform:* Outwash plains and stream terraces  
*Position on the landform:* Backslopes and summits

#### ***Map Unit Composition***

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

#### ***Components of Minor Extent***

##### *Similar soils:*

- Soils that have a surface soil more than 24 inches thick
- Soils that have more sand and less clay in the surface layer
- Soils that have more clay and less silt in the surface layer
- Soils that contain less gravel in the lower part of the profile

##### *Dissimilar soils:*

- The somewhat poorly drained Hoopston soils on footslopes and summits
- The poorly drained Marshan soils on toeslopes

#### ***Properties and Qualities of the Flagler Soil***

*Parent material:* Moderately coarse textured alluvium over coarse textured alluvium  
*Drainage class:* Somewhat excessively drained  
*Slowest permeability within a depth of 40 inches:* Moderately rapid  
*Permeability below a depth of 60 inches:* Rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 5.4 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* Low  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Low for steel and moderate for concrete  
*Surface runoff class:* Very low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Moderately high

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

### ***Fox Series***

*Drainage class:* Well drained

*Landform:* Outwash plains, kames, and end moraines

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits with or without an overlying thin mantle of loess or other silty material

*Slope range:* 2 to 12 percent

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

### **Typical Pedon**

Fox silt loam, 2 to 4 percent slopes; at an elevation of 930 feet; 1,150 feet north and 2,400 feet west of the southeast corner of sec. 1, T. 45 N., R. 5 E.; McHenry County, Illinois; USGS Harvard topographic quadrangle; lat. 42 degrees 24 minutes 12 seconds N. and long. 88 degrees 35 minutes 52 seconds W., NAD 27; UTM Zone 16, Easting 0368505, Northing 4695798, NAD 83:

- Ap1—0 to 3 inches; dark brown (10YR 3/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.
- Ap2—3 to 7 inches; 97 percent brown (10YR 4/3) and 3 percent dark yellowish brown (10YR 4/4) silt loam, pale brown (10YR 6/3) dry; weak medium platy structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.
- Bt1—7 to 11 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine and medium subangular blocky structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) organo-clay films and brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
- 2Bt2—11 to 21 inches; dark yellowish brown (10YR 4/4) 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; 1 percent gravel; moderately acid; gradual smooth boundary.
- 2Bt3—21 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; 1 percent gravel; moderately acid; clear smooth boundary.
- 2Bt4—27 to 32 inches; brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; firm; common very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; 10 percent gravel; moderately acid; abrupt smooth boundary.
- 3C—32 to 60 inches; yellowish brown (10YR 5/4) gravelly coarse sand and gravelly sand; single grain; loose; 25 percent gravel; violently effervescent; moderately alkaline.

### **Range in Characteristics**

*Thickness of the loess or other silty material:* Less than 24 inches

*Depth to sandy and gravelly deposits:* 20 to 40 inches

*Depth to carbonates:* 20 to 40 inches

*Depth to the base of soil development:* 20 to 40 inches

*Ap or A horizon:*

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt 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, or 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—3 or 4

Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand or coarse sand

Content of gravel—15 to 70 percent

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

### ***Setting***

*Landform:* Outwash plains, kames, and end moraines

*Position on the landform:* Summits and backslopes

### ***Map Unit Composition***

Fox and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a darker surface layer
- Soils that are moderately eroded
- Soils that have more silt and less sand in the middle part of the subsoil
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Dunham and Will soils on toeslopes

### ***Properties and Qualities of the Fox Soil***

*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  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Very rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 6.6 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

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

### ***Setting***

*Landform:* End moraines, kames, and outwash plains  
*Position on the landform:* Shoulders and backslopes

### ***Map Unit Composition***

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

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that have sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a darker surface layer
- Soils that have more silt and less sand in the middle part of the subsoil
- Soils that have till in the lower part of the profile

#### *Dissimilar soils:*

- The poorly drained Dunham and Will soils on toeslopes

### ***Properties and Qualities of the Fox Soil***

*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  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Very rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 7.0 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 2.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.

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

### ***Interpretive Groups***

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

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

### ***Setting***

*Landform:* End moraines, kames, and outwash plains  
*Position on the landform:* Shoulders and backslopes

### ***Map Unit Composition***

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

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that have sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have more silt and less sand in the upper one-half of the profile
- Soils that have till in the lower part of the profile

#### *Dissimilar soils:*

- The poorly drained Dunham and Will soils on toeslopes

### ***Properties and Qualities of the Fox Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

## ***Friesland Series***

*Drainage class:* Well drained

*Landform:* Ground moraines and stream terraces

*Parent material:* Loamy outwash over silty sediments

*Slope range:* 0 to 5 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Argiudolls

### **Typical Pedon**

Friesland fine sandy loam, 1 to 6 percent slopes; at an elevation of about 860 feet; 1,995 feet east and 830 feet south of the northwest corner of sec. 16, T. 10 N., R. 7 E.; Columbia County, Wisconsin; USGS Sauk City topographic quadrangle; lat. 43 degrees 20 minutes 55 seconds N. and long. 89 degrees 40 minutes 21 seconds W., NAD 27; UTM Zone 16, Easting 0283390, Northing 4802996, NAD 83:

- Ap—0 to 9 inches; very dark brown (10YR 2/2) fine sandy loam, dark grayish brown (10YR 4/2) dry; moderate fine and very fine subangular blocky structure; friable; many fine roots; few fine tubular pores; slightly acid; abrupt smooth boundary.
- A—9 to 15 inches; very dark grayish brown (10YR 3/2) fine sandy loam, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure; friable; many fine roots; common fine and few coarse tubular pores; slightly acid; clear wavy boundary.
- AB—15 to 19 inches; dark brown (10YR 3/3) fine sandy loam, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure; friable; many fine roots; common fine and few coarse tubular pores; moderately acid; clear wavy boundary.
- Bt1—19 to 29 inches; dark yellowish brown (10YR 3/4) fine sandy loam; moderate medium subangular blocky structure; friable; common fine roots; common fine and few medium and coarse tubular pores; few faint dark brown (10YR 3/3) clay films on faces of peds; moderately acid; gradual wavy boundary.
- Bt2—29 to 35 inches; dark yellowish brown (10YR 4/4) loam; moderate fine subangular blocky structure; firm; common fine roots; common fine and few medium and coarse tubular pores; few faint dark brown (10YR 3/3) clay films on faces of peds; moderately acid; clear wavy boundary.
- 2Bt3—35 to 45 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; firm; few fine roots; common fine and medium tubular pores; faint clay films on faces of peds; few fine prominent yellowish red (5YR 4/6) masses of iron accumulation; few fine faint brown (10YR 5/3) iron depletions; moderately acid; gradual wavy boundary.
- 2C—45 to 60 inches; mixed grayish brown (10YR 5/2) and dark yellowish brown (10YR 4/4) silt loam; massive; firm; few fine roots; many fine and common medium tubular pores; faint clay lining in pores toward upper boundary; slightly acid.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 10 to 20 inches

*Depth to silty sediments:* 20 to 40 inches

*Depth to till:* 40 to more than 80 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 32 to 60 inches

*Ap, A, or AB horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—fine sandy loam or sandy loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—4 to 6

Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

*2Bt horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Texture—silt loam or silty clay loam

*2C horizon:*

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—silt loam

*3C horizon (where present):*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 or 4

Texture—sandy loam or loam

**781A—Friesland sandy loam, 0 to 2 percent slopes*****Setting****Landform:* Ground moraines and stream terraces*Position on the landform:* Summits***Map Unit Composition***

Friesland and similar soils: 92 percent

Dissimilar soils: 8 percent

***Components of Minor Extent****Similar soils:*

- Soils that have no subsurface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have silty sediments beginning at a depth of more than 40 inches

*Dissimilar soils:*

- The somewhat poorly drained La Hogue soils on footslopes and summits

***Properties and Qualities of the Friesland Soil****Parent material:* Loamy outwash over silty sediments*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 10.2 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 3.0 to 5.0 percent*Shrink-swell potential:* Moderate*Ponding:* None*Flooding:* None*Potential for frost action:* Moderate*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Moderately high

#### ***Interpretive Groups***

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

## **781B—Friesland sandy loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines and stream terraces  
*Position on the landform:* Backslopes and summits

### ***Map Unit Composition***

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

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that have no subsurface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have silty sediments beginning at a depth of more than 40 inches

#### *Dissimilar soils:*

- The somewhat poorly drained La Hogue soils on summits and backslopes

### ***Properties and Qualities of the Friesland Soil***

*Parent material:* Loamy outwash over silty sediments  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 10.0 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 3.0 to 5.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Moderately high

#### ***Interpretive Groups***

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

## ***Geryune Series***

*Drainage class:* Moderately well drained  
*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

Geryune silt loam, 2 to 5 percent slopes; at an elevation of 858 feet; 250 feet north and 260 feet east of the southwest corner of sec. 36, T. 45 N., R. 4 E.; Boone County, Illinois; USGS Garden Prairie topographic quadrangle; lat. 42 degrees 19 minutes 43 seconds N. and long. 88 degrees 43 minutes 26 seconds W., NAD 27; UTM Zone 16, Easting 0357958, Northing 4687704, NAD 83:

- Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate very fine subangular blocky structure parting to weak very fine and fine granular; friable; many very fine roots; moderately acid; abrupt smooth boundary.
- AB—9 to 14 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak medium platy structure parting to moderate fine granular; friable; many very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings and white (10YR 8/1) (dry) silt coatings on faces of peds; neutral; clear smooth boundary.
- Bt1—14 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; friable; many very fine roots; few distinct brown (10YR 4/3) clay films and white (10YR 8/1) (dry) silt coatings on faces of peds; few very dark gray (10YR 3/1) worm channel fillings; neutral; gradual smooth boundary.
- Bt2—19 to 28 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; few distinct white (10YR 8/1) (dry) silt coatings on faces of peds; few very dark gray (10YR 3/1) worm channel fillings; neutral; abrupt smooth boundary.
- 2Bt3—28 to 37 inches; brown (7.5YR 4/4) clay loam; moderate medium prismatic structure parting to moderate medium and coarse angular blocky; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; many distinct pale brown (10YR 6/3) (dry) silt coatings on vertical faces of peds; common medium distinct brown (7.5YR 5/2) iron depletions in the matrix; 10 percent gravel; neutral; clear smooth boundary.
- 2Bt4—37 to 43 inches; brown (7.5YR 4/4) clay loam; moderate medium prismatic structure; friable; few very fine roots; common distinct brown (7.5YR 4/2) clay films on vertical faces of peds; 10 percent gravel; neutral; clear wavy boundary.
- 2C—43 to 72 inches; brown (7.5YR 5/4) loam; massive; friable; few distinct brown (7.5YR 4/2) clay films in worm channels in the upper 6 inches; 12 percent gravel; strongly effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the loess or other silty material:* 22 to 40 inches

*Thickness of the mollic epipedon:* 10 to 20 inches

*Depth to carbonates:* 30 to 50 inches

*Depth to the base of soil development:* 30 to 50 inches

*Ap, A, or AB 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 or 10YR  
Value—4 to 6  
Chroma—3 to 6  
Texture—clay loam, loam, or sandy clay loam  
Content of gravel—0 to 10 percent

*2C horizon:*

Hue—7.5YR or 10YR  
Value—4 to 6  
Chroma—3 to 6  
Texture—loam or sandy loam  
Content of gravel—2 to 15 percent

## **625B—Geryune silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and summits

### ***Map Unit Composition***

Geryune and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have slopes of less than 2 percent
- Soils that have no 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 have more sand and less silt in the upper one-half of the subsoil

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Geryune Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Greenbush Series**

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Loess

*Slope range:* 0 to 5 percent

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

### **Typical Pedon**

Greenbush silt loam, 2 to 5 percent slopes; at an elevation of 700 feet; 1,400 feet north and 1,430 feet west of the southeast corner of sec. 18, T. 8 N., R. 1 W.; Warren County, Illinois; USGS Greenbush topographic quadrangle; lat. 40 degrees 40 minutes 40 seconds N. and long. 90 degrees 32 minutes 47 seconds W., NAD 27; UTM Zone 15, Easting 0707353, Northing 4505887, NAD 83:

- Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.
- E—6 to 10 inches; dark grayish brown (10YR 4/2) silt loam; weak thin platy structure; friable; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; moderately acid; abrupt smooth boundary.
- BE—10 to 17 inches; brown (10YR 4/3) silt loam; moderate medium platy structure parting to weak fine subangular blocky; friable; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common distinct gray (10YR 6/1) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.
- Bt1—17 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct gray (10YR 6/1) (dry) silt coatings on faces of peds; strongly acid; gradual smooth boundary.
- Bt2—29 to 38 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown (10YR 4/3) clay films on faces of peds; many faint light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium prominent gray (5Y 6/1) iron depletions within peds; common prominent black (7.5YR 2.5/1) iron and manganese oxide stains in the matrix; strongly acid; gradual wavy boundary.
- Bt3—38 to 53 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown (10YR 4/3) clay films on faces of peds; many distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium prominent gray (5Y 6/1) iron depletions within peds; common prominent black (7.5YR 2.5/1) iron and manganese oxide stains in the matrix; strongly acid; gradual wavy boundary.
- BCt—53 to 75 inches; about 60 percent brown (10YR 5/3) and 40 percent light olive gray (5Y 6/2) silt loam; weak medium and coarse prismatic structure parting to weak fine and medium angular blocky; friable; few faint brown (10YR 4/3) clay

films on faces of peds; few faint light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common prominent black (7.5YR 2.5/1) iron and manganese oxide stains in the matrix; moderately acid; gradual wavy boundary. C—75 to 100 inches; about 55 percent yellowish brown (10YR 5/4) and 45 percent light olive gray (5Y 6/2) silt loam; massive; friable; many medium distinct light brownish gray (10YR 6/2) iron depletions within peds; many prominent black (7.5YR 2.5/1) iron and manganese oxide stains in the matrix; moderately acid.

### **Range in Characteristics**

*Depth to carbonates:* More than 60 inches

*Depth to the base of soil development:* 42 to more than 60 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

*E horizon:*

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

*Bt horizon:*

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam or silt loam

*C horizon:*

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—2 to 6

Texture—silt loam

## **675A—Greenbush silt loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Summits

### ***Map Unit Composition***

Greenbush and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a thicker, darker subsurface layer
- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table beginning at a depth of less than 4 feet or more than 6 feet
- Soils that have outwash or till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Atterberry soils on summits
- The poorly drained Sable soils on toeslopes

***Properties and Qualities of the Greenbush Soil****Parent material:* Loess*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 11.6 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 2.0 to 3.0 percent*Shrink-swell potential:* Moderate*Apparent seasonal high water table (depth, months):* 4.0 to 6.0 feet, February through April*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* Moderate for steel and high for concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 1*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric**675B—Greenbush silt loam, 2 to 5 percent slopes*****Setting****Landform:* Ground moraines*Position on the landform:* Shoulders and summits***Map Unit Composition***

Greenbush and similar soils: 95 percent

Dissimilar soils: 5 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a thicker, darker subsurface layer
- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table beginning at a depth of less than 4 feet or more than 6 feet
- Soils that have outwash or till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Atterberry soils on summits
- The poorly drained Sable soils on toeslopes

***Properties and Qualities of the Greenbush Soil****Parent material:* Loess*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 11.8 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Apparent seasonal high water table (depth, months):* 4.0 to 6.0 feet, February through April  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and high for concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

## **Grellton Series**

*Drainage class:* Well drained  
*Landform:* Ground moraines and stream terraces  
*Parent material:* Loamy outwash over silty sediments over till  
*Slope range:* 2 to 10 percent  
*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Hapludalfs

### **Typical Pedon**

Grellton sandy loam, 2 to 5 percent slopes; at an elevation of 735 feet; 1,620 feet north and 760 feet east of the southwest corner of sec. 15, T. 46 N., R. 1 E.; Winnebago County, Illinois; USGS South Beloit topographic quadrangle; lat. 42 degrees 27 minutes 34 seconds N. and long. 89 degrees 06 minutes 57 seconds W., NAD 27; UTM Zone 16, Easting 0326019, Northing 4702970, NAD 83:

- Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) sandy loam, light brownish gray (10YR 6/2) dry; weak fine angular blocky structure parting to weak medium granular; very friable; many fine roots; few grayish brown (10YR 5/2) uncoated silt and sand grains on faces of peds; neutral; abrupt smooth boundary.
- E—7 to 11 inches; dark grayish brown (10YR 4/2) fine sandy loam; moderate medium platy structure; very friable; common fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; abrupt smooth boundary.
- Bt1—11 to 16 inches; brown (10YR 4/3) fine sandy loam; moderate medium subangular blocky structure; friable; common fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear smooth boundary.
- Bt2—16 to 22 inches; brown (10YR 4/3) sandy loam; moderate medium subangular blocky structure; friable; common fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear smooth boundary.
- 2Bt3—22 to 29 inches; brown (10YR 4/3) silt loam; moderate fine prismatic structure; friable; common fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear smooth boundary.
- 2Bt4—29 to 36 inches; yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure; few fine roots; many distinct brown (10YR 4/3) clay films on

faces of peds; many fine brown (10YR 3/4) iron concretions throughout; slightly alkaline; clear smooth boundary.

2C—36 to 60 inches; yellowish brown (10YR 5/4) and dark grayish brown (10YR 4/2) silt loam; massive; friable; few fine roots; common fine distinct yellowish brown (10YR 5/6) and prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; slightly alkaline.

### Range in Characteristics

*Depth to silty sediments:* 20 to 40 inches

*Depth to till:* 40 to more than 80 inches

*Depth to the base of soil development:* 32 to more than 60 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—sandy loam

*E horizon:*

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—fine sandy loam or sandy loam

*Bt horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Texture—fine sandy loam, sandy loam, loam, or sandy clay loam

*2Bt horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 or 4

Texture—silt loam or silty clay loam

*2C horizon (where present):*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—2 to 6

Texture—silt loam

*3B horizon (where present):*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—loam, fine sandy loam, or silt loam

*3C horizon (where present):*

Hue—10YR

Value—5 or 6

Chroma—3 or 4

Texture—sandy loam, gravelly sandy loam, silt loam, or loam

## **780B—Grellton sandy loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines and stream terraces

*Position on the landform:* Summits and backslopes

### ***Map Unit Composition***

Grellton and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a darker surface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have carbonates in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Beardstown soils on summits

### ***Properties and Qualities of the Grellton Soil***

*Parent material:* Loamy outwash over silty sediments over till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Moderately high

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **780C2—Grellton sandy loam, 5 to 10 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines and stream terraces

*Position on the landform:* Backslopes and shoulders

### ***Map Unit Composition***

Grellton and similar soils: 92 percent

Dissimilar soils: 8 percent

### **Components of Minor Extent**

*Similar soils:*

- Soils that have a darker surface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have carbonates in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Beardstown soils on summits

### **Properties and Qualities of the Grellton Soil**

*Parent material:* Loamy outwash over silty sediments over till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Moderately high

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Griswold Series**

*Drainage class:* Well drained

*Landform:* Ground moraines and end moraines

*Parent material:* Till

*Slope range:* 4 to 12 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Argiudolls

*Taxadjunct features:* The Griswold soil in map unit 363D2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, superactive, mesic Mollic Hapludalf.

### **Typical Pedon**

Griswold loam, 4 to 6 percent slopes, eroded; at an elevation of about 830 feet; 954 feet north and 1,587 feet west of the southeast corner of sec. 33, T. 46 N., R. 8 E.; McHenry County, Illinois; USGS Richmond topographic quadrangle; lat. 42 degrees 25 minutes 02 seconds N. and long. 88 degrees 18 minutes 07 seconds W., NAD 27; UTM Zone 16, Easting 0392868, Northing 4696936, NAD 83:

Ap—0 to 10 inches; 95 percent very dark grayish brown (10YR 3/2) and 5 percent brown (10YR 4/3) loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to moderate fine and medium granular; friable; many very fine roots; 1 percent gravel; neutral; clear smooth boundary.

- Bt1—10 to 14 inches; 85 percent dark yellowish brown (10YR 4/4) and 15 percent very dark grayish brown (10YR 3/2) clay loam; moderate very fine and fine subangular blocky structure; friable; many very fine roots; few distinct brown (10YR 4/3) clay films and dark brown (10YR 3/3) organo-clay films on faces of peds and in pores; 1 percent gravel; neutral; clear smooth boundary.
- Bt2—14 to 20 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; many very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct dark brown (10YR 3/3) organo-clay films on faces of peds and in pores; 3 percent gravel; neutral; clear wavy boundary.
- Bt3—20 to 24 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; very few distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and in pores; 5 percent gravel; neutral; clear smooth boundary.
- BC—24 to 27 inches; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; friable; common very fine roots; 10 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.
- C—27 to 60 inches; yellowish brown (10YR 5/4) sandy loam; massive; friable; few very fine roots; 13 percent gravel; strongly effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon or dark surface layer:* 7 to 16 inches

*Depth to carbonates:* 20 to 40 inches

*Depth to the base of soil development:* 24 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Texture—clay loam, loam, sandy clay loam, or sandy loam

*C horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture—sandy loam, fine sandy loam, or gravelly sandy loam

Content of gravel—10 to 35 percent

## 363C2—Griswold loam, 4 to 6 percent slopes, eroded

### Setting

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and shoulders

### Map Unit Composition

Griswold and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

*Similar soils:*

- Soils that have carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have till beginning at a depth of more than 15 inches

*Dissimilar soils:*

- The somewhat poorly drained Elburn and La Hogue soils on summits and footslopes

### **Properties and Qualities of the Griswold Soil**

*Parent material:* Till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Low

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and low for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **363D2—Griswold loam, 6 to 12 percent slopes, eroded**

### **Setting**

*Landform:* End moraines and ground moraines

*Position on the landform:* Backslopes

### **Map Unit Composition**

Griswold and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

*Similar soils:*

- Soils that have carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have till beginning at a depth of more than 15 inches

*Dissimilar soils:*

- The somewhat poorly drained Elburn and La Hogue soils on summits and footslopes

### **Properties and Qualities of the Griswold Soil**

*Parent material:* Till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Low

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and low for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Grundelein Series**

*Drainage class:* Somewhat poorly drained

*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 Aquic Argiudolls

### **Typical Pedon**

Grundelein silt loam, 0 to 2 percent slopes; 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.; McHenry County, Illinois; USGS Capron topographic quadrangle; lat. 42 degrees 22 minutes 50 seconds N. and long. 88 degrees 38 minutes 13 seconds W., NAD 27; UTM Zone 16, Easting 0365227, Northing 4693327, NAD 83:

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 the loess or other silty material:* 24 to 45 inches

*Depth to sandy and gravelly deposits:* 32 to 50 inches

*Depth to carbonates:* 30 to 50 inches

*Depth to the base of soil development:* 36 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—stratified loam, clay loam, silt loam, or sandy loam or the gravelly analogs of these textures

Content of gravel—0 to 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

**526A—Grundelein silt loam, 0 to 2 percent slopes*****Setting****Landform:* Outwash plains and stream terraces*Position on the landform:* Summits and footslopes***Map Unit Composition***

Grundelein and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have no subsurface layer
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits beginning at a depth of less than 32 inches or more than 50 inches
- Soils that have carbonates beginning at a depth of more than 50 inches
- Soils that have less gravel in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Dunham soils on toeslopes

***Properties and Qualities of the Grundelein Soil****Parent material:* Loess or other silty material and the underlying loamy and gravelly outwash*Drainage class:* Somewhat poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Very rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 8.4 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 4.0 to 5.0 percent*Shrink-swell potential:* Moderate*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and moderate for concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 1*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric

## **Harvard Series**

*Drainage class:* Well drained

*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 Mollic Hapludalfs

### **Typical Pedon**

Harvard silt loam, 2 to 5 percent slopes; 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.; De Kalb County, Illinois; USGS Marengo South topographic quadrangle; lat. 42 degrees 07 minutes 42 seconds N. and long. 88 degrees 36 minutes 17 seconds W., NAD 27; UTM Zone 16, Easting 0367355, Northing 4665263, NAD 83:

- 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 faint light olive brown (2.5Y 5/3) iron depletions in the matrix; slightly acid.

### **Range in Characteristics**

*Thickness of the loess or other silty material:* 20 to 40 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 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—stratified loam, silt loam, sandy loam, clay loam, loamy sand, or sand  
 Content of gravel—less than 15 percent

**344A—Harvard silt loam, 0 to 2 percent slopes*****Setting***

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits

***Map Unit Composition***

Harvard and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a thicker dark surface layer
- Soils that have loamy outwash beginning at a depth of more than 40 inches
- Soils that have sandy and gravelly deposits in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

***Properties and Qualities of the Harvard Soil***

*Parent material:* Loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **344B—Harvard silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits and backslopes

### ***Map Unit Composition***

Harvard and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a thicker dark surface layer
- Soils that have loamy outwash beginning at a depth of more than 40 inches
- Soils that have sandy and gravelly deposits in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Harvard Soil***

*Parent material:* Loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## ***Hayfield Series***

*Drainage class:* Somewhat poorly drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Loamy outwash over sandy and gravelly outwash

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Aquollic Hapludalfs

### Typical Pedon

Hayfield loam, 0 to 2 percent slopes; at an elevation of 774 feet; 141 feet south and 880 feet west of the center of sec. 1, T. 43 N., R. 4 E.; Boone County, Illinois; USGS Riley topographic quadrangle; lat. 42 degrees 14 minutes 00 seconds N. and long. 88 degrees 43 minutes 06 seconds W., NAD 27; UTM Zone 16, Easting 0358201, Northing 4677094, NAD 83:

- Ap—0 to 8 inches; black (10YR 2/1) loam, very dark grayish brown (10YR 3/2) dry; moderate medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.
- E—8 to 14 inches; dark grayish brown (10YR 4/2) loam; moderate medium platy structure; friable; few fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common medium faint brown (10YR 4/3) masses of iron accumulation in the matrix; neutral; abrupt smooth boundary.
- Bt—14 to 24 inches; brown (10YR 4/3) loam; weak medium subangular blocky structure; friable; few fine roots; few distinct dark brown (10YR 3/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; abrupt smooth boundary.
- 2Cg1—24 to 39 inches; 70 percent grayish brown (10YR 5/2), 20 percent light brownish gray (10YR 6/2), and 10 percent yellowish brown (10YR 5/6) sand; single grain; loose; neutral; 3 percent gravel; abrupt smooth boundary.
- 2Cg2—39 to 60 inches; 90 percent dark gray (10YR 4/1) and 10 percent dark grayish brown (10YR 4/2) loamy sand; single grain; loose; 5 percent gravel; neutral.

### Range in Characteristics

*Depth to sandy and gravelly outwash:* 20 to 40 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 20 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam

*E horizon:*

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—loam or silt loam

*Bt horizon:*

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—3 or 4

Texture—clay loam, loam, or silt loam

*2C or 2Cg horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 6

Texture—loamy sand, sand, loamy coarse sand, or coarse sand or the gravelly analogs of these textures  
 Content of gravel—less than 35 percent

## **771A—Hayfield loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Footslopes and summits

### ***Map Unit Composition***

Hayfield and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a darker subsurface layer
- Soils that have a lighter colored surface layer
- Soils that have sandy and gravelly outwash beginning at a depth of more than 40 inches

*Dissimilar soils:*

- The poorly drained Marshan and Selmass soils on toeslopes

### ***Properties and Qualities of the Hayfield Soil***

*Parent material:* Loamy outwash over sandy and gravelly outwash

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 7.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2s

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## ***Herbert Series***

*Drainage class:* Somewhat poorly drained

*Landform:* End moraines and ground 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

Herbert silt loam, 0 to 2 percent slopes; 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.; De Kalb County, Illinois; USGS Genoa topographic quadrangle; lat. 42 degrees 07 minutes 24 seconds N. and long. 88 degrees 44 minutes 37 seconds W., NAD 27; UTM Zone 16, Easting 0355877, Northing 4664947, NAD 83:

- 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 dark grayish brown (10YR 4/2) clay films on faces of pedis; 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 dark grayish brown (10YR 4/2) clay films on faces of pedis; 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 dark grayish brown (2.5Y 4/2) clay films on faces of pedis; 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 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 dark grayish brown (2.5Y 4/2) clay films on faces of pedis; 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) and yellowish brown (10YR 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 dark grayish brown (2.5Y 4/2) clay films on faces of pedis; 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 faint 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 the loess or other silty material:* 20 to 40 inches

*Depth to carbonates:* 22 to 40 inches

*Depth to the base of soil development:* 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

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

### Setting

*Landform:* End moraines and ground moraines

*Position on the landform:* Summits and footslopes

### Map Unit Composition

Herbert and similar soils: 92 percent

Dissimilar soils: 8 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have till beginning at a depth of more than 40 inches
- Soils that have carbonates beginning at a depth of more than 40 inches

- Soils that have 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

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Herbert Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 0.5 foot to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Not hydric

## ***Hitt Series***

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Loess over till over residuum derived from limestone and dolomite

*Slope range:* 2 to 5 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Argiudolls

### ***Typical Pedon***

Hitt silt loam, 2 to 5 percent slopes; at an elevation of 850 feet; 2,200 feet east and 2,200 feet south of the northwest corner of sec. 36, T. 27 N., R. 10 E.; Winnebago County, Illinois; USGS Pecatonica topographic quadrangle; lat. 42 degrees 17 minutes 53 seconds N. and long. 89 degrees 17 minutes 33 seconds W., NAD 27; UTM Zone 16, Easting 0311024, Northing 4685415, NAD 83:

Ap—0 to 9 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many fine roots; slightly acid; clear smooth boundary.

A—9 to 14 inches; very dark brown (10YR 2/2) silt loam, brown (10YR 4/2) dry; moderate fine granular structure; friable; many fine roots; slightly acid; clear smooth boundary.

- Bt1—14 to 18 inches; dark brown (7.5YR 3/3) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; few distinct dark brown (7.5YR 3/2) clay films on faces of peds; moderately acid; clear smooth boundary.
- 2Bt2—18 to 22 inches; dark brown (7.5YR 3/4) clay loam; moderate medium subangular blocky structure; firm; common fine roots; few distinct dark brown (7.5YR 3/2) clay films on faces of peds; 5 percent mixed rock fragments; moderately acid; clear smooth boundary.
- 2Bt3—22 to 27 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct dark reddish brown (5YR 3/2) clay films on faces of peds; 5 percent mixed rock fragments; moderately acid; gradual smooth boundary.
- 2Bt4—27 to 32 inches; reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; few distinct dark reddish brown (5YR 3/2) clay films on faces of peds; 5 percent mixed rock fragments; moderately acid; clear smooth boundary.
- 2Bt5—32 to 41 inches; reddish brown (5YR 4/4) clay loam; moderate coarse subangular blocky structure; firm; few fine roots; few distinct dark reddish brown (5YR 3/2) clay films on faces of peds; 2 percent mixed rock fragments and 5 percent limestone fragments; moderately acid; abrupt smooth boundary.
- 3Bt6—41 to 45 inches; reddish brown (2.5YR 4/4) clay; strong medium angular blocky structure; very firm; few fine roots between peds; few distinct dark reddish brown (5YR 3/3) clay films on faces of peds; 5 percent limestone fragments; neutral; abrupt smooth boundary.
- 3R—45 inches; broken limestone.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 19 inches

*Thickness of the loess:* 10 to 25 inches

*Depth to lithic contact:* 40 to 60 inches

*Depth to the base of soil development:* 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 7.5YR

Value—3 to 5

Chroma—3 or 4

Texture—silty clay loam

*2Bt horizon:*

Hue—2.5YR, 5YR, or 7.5YR

Value—3 to 5

Chroma—3 or 4

Texture—clay loam or sandy clay loam

*3Bt horizon:*

Hue—2.5YR or 5YR

Value—3 or 4

Chroma—3 or 4

Texture—silty clay or clay

## 506B—Hitt silt loam, 2 to 5 percent slopes

### *Setting*

*Landform:* Ground moraines

*Position on the landform:* Summits and shoulders

### *Map Unit Composition*

Hitt and similar soils: 92 percent

Dissimilar soils: 8 percent

### *Components of Minor Extent*

*Similar soils:*

- Soils that have no subsurface layer
- Soils that are moderately deep to bedrock

*Dissimilar soils:*

- The well drained Jasper and Winnebago soils, which are very deep to bedrock; on summits and shoulders

### *Properties and Qualities of the Hitt Soil*

*Parent material:* Loess over till over residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very slow or slow

*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)

*Available water capacity:* About 8.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### *Interpretive Groups*

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Hononegah Series**

*Drainage class:* Excessively drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Eolian sands over outwash

*Slope range:* 0 to 6 percent

*Taxonomic classification:* Sandy, mixed, mesic Entic Hapludolls

### **Typical Pedon**

Hononegah loamy coarse sand, 0 to 2 percent slopes; at an elevation of about 777 feet; 170 feet north and 2,060 feet east of the center of sec. 11, T. 46 N., R. 1 E.; Winnebago County, Illinois; USGS South Beloit topographic quadrangle; lat. 42

degrees 28 minutes 40 seconds N. and long. 88 degrees 35 minutes 38 seconds W., NAD 27; UTM Zone 16, Easting 0328890, Northing 4704931, NAD 83:

- Ap—0 to 8 inches; very dark brown (10YR 2/2) loamy coarse sand, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to moderate medium granular; very friable; many fine roots; neutral; abrupt smooth boundary.
- A—8 to 15 inches; very dark brown (10YR 2/2) loamy coarse sand, dark grayish brown (10YR 4/2) dry; moderate medium subangular and angular blocky structure; very friable; common fine roots; few medium distinct dark yellowish brown (10YR 3/4) masses of iron accumulation in the matrix; neutral; clear smooth boundary.
- AB—15 to 19 inches; dark brown (7.5YR 3/2) loamy coarse sand, grayish brown (10YR 5/2) dry; weak medium and fine subangular blocky structure; very friable; few fine roots; neutral; clear smooth boundary.
- Bw—19 to 24 inches; dark yellowish brown (10YR 4/4) loamy coarse sand; weak fine subangular blocky structure; very friable; few fine roots; 5 percent gravel; neutral; clear smooth boundary.
- 2BC—24 to 31 inches; dark yellowish brown (10YR 4/4) very gravelly loamy coarse sand; single grain; loose; few fine roots; 50 percent gravel; neutral; clear smooth boundary.
- 2C—31 to 60 inches; yellowish brown (10YR 5/4) very gravelly loamy coarse sand; single grain; loose; 60 percent gravel; strongly effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 20 inches

*Depth to carbonates:* 20 to 50 inches

*Depth to the base of soil development:* 20 to 40 inches

*Ap or A horizon:*

Hue—10YR or 7.5YR

Value—2 to 3

Chroma—1 to 3

Texture—loamy coarse sand

*Bw horizon:*

Hue—10YR or 7.5YR

Value—3 or 4

Chroma—2 to 4

Texture—coarse sand, loamy coarse sand, loamy sand, sand, or sandy loam or the gravelly analogs of these textures

Content of gravel—3 to 25 percent

*2C horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—coarse sand or loamy coarse sand or the gravelly or very gravelly analogs of these textures

Content of gravel—12 to 60 percent

## **354A—Hononegah loamy coarse sand, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits

### **Map Unit Composition**

Hononegah and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have more clay and less sand in the upper one-half of the profile
- Soils that contain less gravel in the lower one-half of the profile

#### *Dissimilar soils:*

- The well drained, loamy Warsaw soils on summits

### **Properties and Qualities of the Hononegah Soil**

*Parent material:* Eolian sands over outwash

*Drainage class:* Excessively drained

*Slowest permeability within a depth of 40 inches:* Very rapid

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 3.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Low

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Low

*Hazard of corrosion:* Low for steel and concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* High

### **Interpretive Groups**

*Land capability classification:* 4s

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **354B—Hononegah loamy coarse sand, 2 to 6 percent slopes**

### **Setting**

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Shoulders and summits

### **Map Unit Composition**

Hononegah and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have more clay and less sand in the upper one-half of the profile
- Soils that contain less gravel in the lower one-half of the profile

#### *Dissimilar soils:*

- The well drained, loamy Warsaw soils on summits

### ***Properties and Qualities of the Hononegah Soil***

*Parent material:* Eolian sands over outwash  
*Drainage class:* Excessively drained  
*Slowest permeability within a depth of 40 inches:* Very rapid  
*Permeability below a depth of 60 inches:* Very rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 3.0 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 2.0 percent  
*Shrink-swell potential:* Low  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Low  
*Hazard of corrosion:* Low for steel and concrete  
*Surface runoff class:* Negligible  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* High

### ***Interpretive Groups***

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

### ***Hoopeston Series***

*Drainage class:* Somewhat poorly drained  
*Landform:* Outwash plains and stream terraces  
*Parent material:* Outwash  
*Slope range:* 0 to 2 percent  
*Taxonomic classification:* Coarse-loamy, mixed, superactive, mesic Aquic Hapludolls

### ***Typical Pedon***

Hoopeston sandy loam, 0 to 2 percent slopes; at an elevation of about 792 feet; 1,175 feet south and 2,250 feet west of the northeast corner of sec. 4, T. 43 N., R. 5 E.; McHenry County, Illinois; USGS Riley topographic quadrangle; lat. 42 degrees 14 minutes 15 seconds N. and long. 88 degrees 39 minutes 20 seconds W., NAD 27; UTM Zone 16, Easting 0363386, Northing 4677474, NAD 83:

- Ap—0 to 6 inches; black (10YR 2/1) sandy loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; very friable; common very fine roots; neutral; abrupt smooth boundary.
- A—6 to 14 inches; black (10YR 2/1) sandy loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium granular structure; very friable; common very fine roots; neutral; abrupt smooth boundary.
- BA—14 to 18 inches; brown (10YR 4/3) sandy loam; moderate fine subangular blocky structure; very friable; common very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds and in pores; common fine dark reddish brown (5YR 3/4) very weakly cemented iron oxide concretions throughout; common fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.
- Bw1—18 to 24 inches; brown (10YR 5/3) sandy loam; moderate fine subangular blocky structure; very friable; common very fine roots; common fine yellowish red (5YR 4/6) very weakly cemented iron oxide concretions throughout; common fine and medium faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly alkaline; gradual wavy boundary.

Bw2—24 to 34 inches; grayish brown (10YR 5/2) sandy loam; moderate fine and medium subangular blocky structure; very friable; common very fine and fine roots; common fine dark reddish brown (5YR 3/4) and yellowish red (5YR 4/6) very weakly cemented iron oxide concretions throughout; common fine and medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; slightly alkaline; gradual wavy boundary.

BC—34 to 38 inches; 60 percent grayish brown (10YR 5/2) and 40 percent brown (10YR 5/3) sandy loam; weak fine and medium subangular blocky structure; very friable; few very fine roots; common fine yellowish red (5YR 4/6) very weakly cemented iron oxide concretions throughout; slightly alkaline; clear wavy boundary.

C—38 to 60 inches; 40 percent yellowish brown (10YR 5/4), 30 percent grayish brown (10YR 5/2), and 30 percent yellowish brown (10YR 5/6) loamy sand; massive; very friable; common fine yellowish red (5YR 4/6) and dark reddish brown (5YR 3/3) very weakly cemented iron oxide concretions throughout; slightly alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 20 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 20 to 48 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—sandy loam

*Bw horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

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

*C horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 8

Texture—loamy sand, sand, loamy fine sand, or fine sand

## 172A—Hoopeston sandy loam, 0 to 2 percent slopes

### Setting

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits and footslopes

### Map Unit Composition

Hoopeston and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a thinner surface layer
- Soils that have more sand or clay and less silt in the subsoil
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

*Dissimilar soils:*

- The poorly drained Selmass soils on toeslopes
- The well drained Dickinson and somewhat excessively drained Flagler soils on summits

***Properties and Qualities of the Hoopeston Soil****Parent material:* Outwash*Drainage class:* Somewhat poorly drained*Slowest permeability within a depth of 40 inches:* Moderately rapid*Permeability below a depth of 60 inches:* Rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 7.3 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 2.0 to 3.0 percent*Shrink-swell potential:* Low*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May*Ponding:* None*Flooding:* None*Potential for frost action:* Moderate*Hazard of corrosion:* Moderate for steel and concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Moderately high***Interpretive Groups****Land capability classification:* 2s*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric***Houghton Series****Drainage class:* Very poorly drained*Landform:* Ground moraines, outwash plains, end moraines, flood plains, and depressions*Parent material:* Herbaceous organic material*Slope range:* 0 to 2 percent*Taxonomic classification:* Euic, mesic Typic Haplosaprists***Typical Pedon***

Houghton muck, 0 to 2 percent slopes; at an elevation of 960 feet; 465 feet south and 1,248 feet west of the northeast corner of sec. 5, T. 45 N., R. 6 E.; McHenry County, Illinois; USGS Harvard topographic quadrangle; lat. 42 degrees 24 minutes 48 seconds N. and long. 88 degrees 33 minutes 17 seconds W., NAD 27; UTM Zone 16, Easting 0372066, Northing 4696848, NAD 83:

Oap—0 to 11 inches; muck (sapric material), black (N 2.5/) broken face and rubbed, dark gray (5Y 2.5/1) dry; about 10 percent fiber, 1 percent rubbed; moderate fine subangular blocky structure; very friable; common very fine roots; neutral; abrupt smooth boundary.

Oa1—11 to 26 inches; muck (sapric material), 95 percent black (N 2.5/) and 5 percent dark reddish brown (5YR 3/3) broken face and rubbed; about 10 percent fiber, 1 percent rubbed; moderate fine and medium subangular blocky structure; very friable; common very fine roots; neutral; clear wavy boundary.

Oa2—26 to 44 inches; muck (sapric material), black (N 2.5/) broken face and rubbed; about 10 percent fiber, 1 percent rubbed; weak fine subangular blocky structure; very friable; common very fine roots; slightly acid; clear wavy boundary.

Oa3—44 to 60 inches; 95 percent muck (sapric material), black (N 2.5/) broken face and rubbed, and 5 percent light brownish gray (2.5Y 6/2) very fine sandy loam; about 10 percent fiber, 1 percent rubbed; massive; very friable; common very fine roots; slightly acid.

### **Range in Characteristics**

*Thickness of the organic deposits:* More than 51 inches

*Surface tier:*

Hue—10YR or N

Value—2 to 3

Chroma—0 or 1

Texture—muck (sapric material)

*Subsurface tier:*

Hue—7.5YR, 10YR, or N

Value—2 to 3

Chroma—0 to 2

Texture—muck (sapric material)

## **103A—Houghton muck, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Ground moraines, outwash plains, and end moraines

*Position on the landform:* Toeslopes

### ***Map Unit Composition***

Houghton and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a higher fiber content
- Soils that have a lower content of organic matter in the surface layer
- Soils that have organic deposits less than 51 inches thick

*Dissimilar soils:*

- The poorly drained Drummer, Pella, and Selma soils on toeslopes
- Soils that are subject to common flooding

### ***Properties and Qualities of the Houghton Soil***

*Parent material:* Herbaceous organic material

*Drainage class:* Very poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow to moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 23.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 70.0 to 99.0 percent

*Shrink-swell potential:* Not rated

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, November through June

*Ponding (depth, months):* At the surface to 1.0 foot above the surface, June through November

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* High

### ***Interpretive Groups***

*Land capability classification:* 3w

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Hydric

## **1103A—Houghton muck, undrained, 0 to 2 percent slopes, frequently flooded**

### ***Setting***

*Landform:* Flood plains and depressions

*Position on the landform:* Toeslopes

### ***Map Unit Composition***

Houghton and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a lower content of organic matter in the surface layer
- Soils that have carbonates near the surface
- Soils that have a higher fiber content
- Soils that have organic deposits less than 51 inches thick

*Dissimilar soils:*

- The poorly drained Comfrey and Sawmill soils on flood plains

### ***Properties and Qualities of the Houghton Soil***

*Parent material:* Herbaceous organic material

*Drainage class:* Very poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow to moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 23.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 70.0 to 99.0 percent

*Shrink-swell potential:* Not rated

*Apparent seasonal high water table (depth, months):* At the surface to 0.5 foot below the surface, January through December

*Ponding (depth, months):* At the surface to 1.0 foot above the surface, January through December

*Flooding (frequency, months):* Frequent, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* High

### ***Interpretive Groups***

*Land capability classification:* 5w

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Hydric

### ***Jasper Series***

*Drainage class:* Well drained

*Landform:* Stream terraces and outwash plains

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash

*Slope range:* 0 to 10 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Argiudolls

*Taxadjunct features:* The Jasper soil in map unit 440C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

### **Typical Pedon**

Jasper silt loam, 2 to 5 percent slopes; at an elevation of 545 feet; 1,072 feet north and 550 feet east of the southwest corner of sec. 4, T. 15 N., R. 9 E.; Bureau County, Illinois; USGS Princeton South topographic quadrangle; lat. 41 degrees 18 minutes 33 degrees N. and long. 89 degrees 28 minutes 08 seconds W., NAD 27; UTM Zone 16, Easting 0293329, Northing 4576019, NAD 83:

- Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; moderate fine and very fine granular structure; friable; common fine roots; neutral; clear smooth boundary.
- A—8 to 14 inches; 50 percent very dark gray (10YR 3/1) and 50 percent very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure; friable; common fine roots; few fine iron and manganese oxide stains throughout; neutral; clear smooth boundary.
- BA—14 to 18 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine subangular blocky structure; friable; common fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine iron and manganese oxide stains throughout; neutral; clear smooth boundary.
- Bt1—18 to 23 inches; dark yellowish brown (10YR 4/4) 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; few fine iron oxide and manganese oxide stains throughout; neutral; clear smooth boundary.
- Bt2—23 to 35 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; common distinct dark brown (10YR 3/3) clay films on faces of peds; few prominent pale brown (10YR 6/3) (dry) silt coatings on faces of peds; few fine roots; few fine iron oxide and manganese oxide stains throughout; neutral; clear smooth boundary.
- Bt3—35 to 43 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; few distinct dark brown (10YR 3/3) and brown (10YR 4/3) clay films on faces of peds; few fine iron and manganese oxide stains throughout; slightly alkaline; clear smooth boundary.
- BCt—43 to 52 inches; yellowish brown (10YR 5/4) loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine

iron and manganese oxide concretions and stains throughout; slightly alkaline; clear smooth boundary.

C—52 to 60 inches; yellowish brown (10YR 5/4) silt loam; about 15 percent sand; massive; friable; few fine roots; few fine iron and manganese oxide stains throughout; slightly effervescent; slightly alkaline.

### **Range in Characteristics**

*Thickness of the mollic epipedon or dark surface layer:* 7 to 20 inches

*Depth to carbonates:* More than 35 inches

*Depth to the base of soil development:* 35 to 60 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam

*Bt horizon:*

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 6

Texture—clay loam, silty clay loam, loam, or silt loam

*C horizon:*

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 6

Texture—loam, silt loam, sandy loam, or loamy sand; stratified in some pedons

## **440A—Jasper silt loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits

### ***Map Unit Composition***

Jasper and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more silt and less sand in the upper one-half of the profile
- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have no subsurface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained La Hogue soils on summits and footslopes

### ***Properties and Qualities of the Jasper Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **440B—Jasper silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Shoulders and summits

### ***Map Unit Composition***

Jasper and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more silt and less sand in the upper one-half of the profile
- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have no subsurface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained La Hogue soils on summits and footslopes

### ***Properties and Qualities of the Jasper Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **440C2—Jasper silt loam, 5 to 10 percent slopes, eroded**

### ***Setting***

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Shoulders and backslopes

### ***Map Unit Composition***

Jasper and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more silt and less sand in the upper one-half of the profile
- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained La Hogue soils on summits and footslopes

### ***Properties and Qualities of the Jasper Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## ***Juneau Series***

*Drainage class:* Moderately well drained

*Landform:* Ground moraines, flood plains, and drainageways

*Parent material:* Colluvium or alluvium

*Slope range:* 0 to 2 percent

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

### Typical Pedon

Juneau silt loam, 0 to 2 percent slopes; at an elevation of 778 feet; 700 feet north and 745 feet east of the center of sec. 21, T. 44 N., R. 3 E.; Boone County, Illinois; USGS Caledonia topographic quadrangle; lat. 42 degrees 16 minutes 39 seconds N. and long. 88 degrees 53 minutes 11 seconds W., NAD 27; UTM Zone 16, Easting 0344430, Northing 4682301, NAD 83:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thin platy structure parting to moderate fine granular; friable; many fine roots; neutral; clear smooth boundary.

C1—9 to 14 inches; dark grayish brown (10YR 4/2) silt loam; massive breaking to weak thin plates along depositional strata; friable; many fine roots; few light gray (10YR 7/2) (dry) uncoated silt and sand grains on faces of peds; neutral; clear smooth boundary.

C2—14 to 26 inches; dark grayish brown (10YR 4/2) silt loam; massive breaking to weak medium plates along depositional strata; friable; many fine roots; few light gray (10YR 7/2) (dry) silt and sand grains on faces of plates; few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; neutral; abrupt smooth boundary.

C3—26 to 33 inches; 80 percent dark grayish brown (10YR 4/2) and 20 percent dark yellowish brown (10YR 4/4) silt loam; massive breaking to weak very thick plates along depositional strata; friable; common fine roots; many light gray (10YR 7/2) (dry) silt and sand grains on faces of plates; neutral; abrupt smooth boundary.

Btb1—33 to 40 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; common fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few dark grayish brown (10YR 4/2) fillings in worm channels; moderately acid; clear smooth boundary.

Btb2—40 to 51 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; friable; common fine roots; common distinct brown (10YR 4/3) clay films and few very pale brown (10YR 7/3) (dry) silt and sand grains on faces of plates; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; moderately acid; abrupt smooth boundary.

2BCtb—51 to 59 inches; brown (7.5YR 4/4) loam; moderate coarse prismatic structure; friable; few fine roots; common distinct brown (7.5YR 4/2) clay films on faces of peds; 3 percent gravel; slightly acid; abrupt smooth boundary.

2C—59 to 69 inches; brown (7.5YR 4/4) loam; massive; 3 percent gravel; slightly acid.

### Range in Characteristics

*Depth to buried soil:* 20 to 39 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt loam

*C horizon:*

Hue—10YR

Value—3 to 5

Chroma—2 or 3  
Texture—silt loam

*Btb horizon:*

Hue—10YR or 7.5YR  
Value—3 to 5  
Chroma—3 or 4  
Texture—silt loam or silty clay loam

*2BCtb or 2BCb horizon:*

Hue—7.5YR or 10YR  
Value—3 or 4  
Chroma—3 or 4  
Texture—clay loam or loam

*2C horizon (where present):*

Hue—7.5YR or 10YR  
Value—4 to 6  
Chroma—3 or 4  
Texture—loam

## **782A—Juneau silt loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Footslopes

### ***Map Unit Composition***

Juneau and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more sand and less silt in the upper part of the profile
- Soils that have a buried soil at a depth of less than 20 inches

*Dissimilar soils:*

- The poorly drained Drummer and Sable soils on toeslopes

### ***Properties and Qualities of the Juneau Soil***

*Parent material:* Colluvium

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 12.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 3.5 to 6.0 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

## **8782A—Juneau silt loam, 0 to 2 percent slopes, occasionally flooded**

### ***Setting***

*Landform:* Flood plains and drainageways

### ***Map Unit Composition***

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

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that have more sand and less silt in the upper part of the profile
- Soils that have a buried soil at a depth of less than 20 inches

#### *Dissimilar soils:*

- The poorly drained Comfrey and Sawmill soils on flood plains

### ***Properties and Qualities of the Juneau Soil***

*Parent material:* Alluvium

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 3.5 to 6.0 feet, February through April

*Ponding:* None

*Flooding (frequency, months):* Occasional, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

## **Kane Series**

*Drainage class:* Somewhat poorly drained

*Landform:* Stream terraces, kames, and outwash plains

*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**

Kane silt loam, 0 to 2 percent slopes; 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.; McHenry County, Illinois; USGS Richmond topographic quadrangle; lat. 42 degrees 25 minutes 51 seconds N. and long. 88 degrees 17 minutes 25 seconds W., NAD 27; UTM Zone 16, Easting 0393863, Northing 4698428, NAD 83:

- 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/) 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/) 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 20 inches

*Depth to sandy and gravelly deposits:* 20 to 40 inches

*Depth to carbonates:* 20 to 40 inches

*Depth to the base of soil development:* 22 to 40 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—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

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

*Landform:* Stream terraces, kames, and outwash plains

*Position on the landform:* Summits and footslopes

***Map Unit Composition***

Kane and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have sandy and gravelly outwash beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have a thinner surface layer

*Dissimilar soils:*

- The poorly drained Will soils on toeslopes

***Properties and Qualities of the Kane Soil***

*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

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2s

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Kaneville Series**

*Drainage class:* Moderately well drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Loess and the underlying outwash

*Slope range:* 5 to 10 percent

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

### **Typical Pedon**

Kaneville silt loam, 0 to 2 percent slopes; 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.; Kane County, Illinois; USGS Big Rock topographic quadrangle; lat. 41 degrees 48 minutes 42 seconds N. and long. 88 degrees 31 minutes 43 seconds W., NAD 27; UTM Zone 16, Easting 0373033, Northing 4629994, NAD 83:

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

*Depth to the base of soil development:* 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—clay loam, silt loam, 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, clay loam, or loamy sand; stratified in some pedons

Content of gravel—less than 15 percent

## 667C2—Kaneville silt loam, 5 to 10 percent slopes, eroded

### Setting

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Shoulders and backslopes

### **Map Unit Composition**

Kaneville and similar soils: 92 percent

Dissimilar soils: 8 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have carbonates at a depth of less than 40 inches
- Soils that have till in the lower part of the profile
- 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

#### *Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### **Properties and Qualities of the Kaneville Soil**

*Parent material:* Loess and the underlying outwash

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

### **Kendall Series**

*Drainage class:* Somewhat poorly drained

*Landform:* Stream terraces and outwash plains

*Parent material:* Loess over outwash

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

### **Typical Pedon**

Kendall silt loam, 0 to 2 percent slopes; 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.; Douglas County, Illinois; USGS Oakland topographic quadrangle; lat. 39 degrees 42 minutes 24 seconds N.

and long. 88 degrees 02 minutes 17 seconds W., NAD 27; UTM Zone 16, Easting 0411011, Northing 4395720, NAD 83:

- 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 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.
- 2Cg—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.

### Range in Characteristics

*Thickness of the loess:* 40 to 60 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 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—stratified loam, silt loam, sandy loam, or sandy clay loam  
 Content of gravel—less than 15 percent

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

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits and footslopes

***Map Unit Composition***

Kendall and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a darker surface layer
- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

*Dissimilar soils:*

- The poorly drained Drummer and Sable soils on toeslopes

***Properties and Qualities of the Kendall Soil***

*Parent material:* Loess over outwash

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 0.5 foot to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Not hydric

### **Kidami Series**

*Drainage class:* Moderately well drained

*Landform:* End moraines and ground moraines

*Parent material:* Till with or without a thin mantle of loess or other silty material

*Slope range:* 2 to 12 percent

*Taxonomic classification:* Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs

### **Typical Pedon**

Kidami silt loam, 2 to 4 percent slopes; 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.; McHenry County, Illinois; USGS Marengo North topographic quadrangle; lat. 42 degrees 17 minutes 18 seconds N. and long. 88 degrees 36 minutes 03 seconds W., NAD 27; UTM Zone 16, Easting 0368008, Northing 4683020, NAD 83:

- 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) silt coatings 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) silt coatings 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) silt coatings 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) silt coatings 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 the loess or other silty material:* Less than 18 inches

*Depth to carbonates:* 20 to 48 inches

*Depth to the base of soil development:* 24 to 55 inches

*Ap or A horizon:*

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—1 to 3

Texture—silt loam or loam

Content of gravel—less than 10 percent

*E horizon (where present):*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam or loam

Content of gravel—less than 10 percent

*Bt or 2Bt horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—clay loam, loam, or silty clay 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

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

### Setting

*Landform:* End moraines and ground moraines

*Position on the landform:* Summits and backslopes

### **Map Unit Composition**

Kidami and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a thicker, darker surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 48 inches
- Soils that are moderately eroded
- Soils that have slopes of more than 4 percent

#### *Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### **Properties and Qualities of the Kidami Soil**

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

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

### **Setting**

*Landform:* Ground moraines and end moraines

*Position on the landform:* Shoulders and backslopes

### **Map Unit Composition**

Kidami and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a darker surface layer

- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 48 inches
- Soils that have slopes of more than 6 percent

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

***Properties and Qualities of the Kidami Soil***

*Parent material:* Till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

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

***Setting***

*Landform:* End moraines and ground moraines

*Position on the landform:* Shoulders and backslopes

***Map Unit Composition***

Kidami and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent***

*Similar soils:*

- Soils that have a darker surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 48 inches
- Soils that have slopes of less than 6 percent or more than 12 percent

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Kidami Soil***

*Parent material:* Till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

### ***Kidder Series***

*Drainage class:* Well drained

*Landform:* End moraines and ground moraines

*Parent material:* Till

*Slope range:* 2 to 20 percent

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

### ***Typical Pedon***

Kidder silt loam, 2 to 6 percent slopes; 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.; Rock County, Wisconsin; USGS Milton topographic quadrangle; lat. 42 degrees 50 minutes 15 seconds N. and long. 88 degrees 53 minutes 44 seconds W., NAD 27; UTM Zone 16, Easting 0328921, Northing 4704914, NAD 83:

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.

BE—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.

Bt1—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 bridges between sand grains; neutral; clear wavy boundary.

Bt2—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 pedis and in pores and clay bridges between sand grains; neutral; clear wavy boundary.

Bt3—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, impeded and exped pores; very few faint dark brown (10YR 3/3) clay films on faces of some pedis and clay bridges between sand grains; about 15 percent gravel; slightly alkaline; clear wavy boundary.

C—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:* 20 to 40 inches

*Depth to the base of soil development:* 20 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—loam or clay loam

*E horizon (where present):*

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—loam or sandy loam

*Bt 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, or gravelly sandy loam

Content of gravel—5 to 35 percent

## 361B—Kidder loam, 2 to 4 percent slopes

### Setting

*Landform:* End moraines and ground moraines

*Position on the landform:* Summits and shoulders

### Map Unit Composition

Kidder and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more sand and less silt and clay in the lower part of the profile
- Soils that have till beginning at a depth of more than 15 inches
- Soils that are moderately eroded
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 40 inches

*Dissimilar soils:*

- The somewhat poorly drained Kendall and Virgil soils on summits and footslopes

### ***Properties and Qualities of the Kidder Soil***

*Parent material:* Till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

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

### ***Setting***

*Landform:* End moraines and ground moraines

*Position on the landform:* Shoulders and backslopes (fig. 6)

### ***Map Unit Composition***

Kidder and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more sand and less silt and clay in the lower part of the profile
- Soils that have till beginning at a depth of more than 15 inches
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 40 inches

*Dissimilar soils:*

- The somewhat poorly drained Kendall and Virgil soils on summits and footslopes
- The somewhat poorly drained Beardstown soils on summits

### ***Properties and Qualities of the Kidder Soil***

*Parent material:* Till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

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

### ***Setting***

*Landform:* End moraines and ground moraines

*Position on the landform:* Backslopes (fig. 6)

### ***Map Unit Composition***

Kidder and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more sand and less silt and clay in the lower part of the profile
- Soils that have till beginning at a depth of more than 15 inches
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 40 inches

*Dissimilar soils:*

- The somewhat poorly drained Kendall and Virgil soils on summits and footslopes
- The somewhat poorly drained Beardstown soils on summits

### ***Properties and Qualities of the Kidder Soil***

*Parent material:* Till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 7.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and low for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **361D3—Kidder clay loam, 6 to 12 percent slopes, severely eroded**

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Kidder and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more sand and less silt and clay in the lower part of the profile
- Soils that have till beginning at a depth of more than 15 inches
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 40 inches

*Dissimilar soils:*

- The somewhat poorly drained Kendall and Virgil soils on summits and footslopes
- The somewhat poorly drained Beardstown soils on summits
- Small areas of soils that have gravel or limestone at the surface

### ***Properties and Qualities of the Kidder Soil***

*Parent material:* Till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 7.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 0.5 to 1.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer is mostly subsoil material.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and low for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 4e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

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

### ***Setting***

*Landform:* End moraines and ground moraines

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Kidder and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more sand and less silt and clay in the lower part of the profile
- Soils that have till beginning at a depth of more than 15 inches
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 40 inches

*Dissimilar soils:*

- The somewhat poorly drained Kendall and Virgil soils on summits and footslopes
- The somewhat poorly drained Beardstown soils on summits
- Small areas of soils that have gravel or limestone at the surface

### ***Properties and Qualities of the Kidder Soil***

*Parent material:* Till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 4e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## ***Kish Series***

*Drainage class:* Poorly drained

*Landform:* Stream terraces, outwash plains, 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**

Kish loam, 0 to 2 percent slopes; 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.; McHenry County, Illinois; USGS Huntley topographic quadrangle; lat. 42 degrees 10 minutes 38 seconds N. and long. 88 degrees 27 minutes 04 seconds W., NAD 27; UTM Zone 16, Easting 0380154, Northing 4670474, NAD 83:

- 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

*Depth to the base of soil development:* 30 to 50 inches

*Apk, Ap, Ak, or A horizon:*

Hue—10YR, 2.5Y, or N

Value—2 to 3  
 Chroma—0 to 2  
 Texture—loam

*Bg or BCg horizon:*

Hue—10YR, 2.5Y, 5Y, or N  
 Value—4 to 6  
 Chroma—0 to 2  
 Texture—loam, 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

## **626A—Kish loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Stream terraces, outwash plains, and ground moraines

*Position on the landform:* Toeslopes

### ***Map Unit Composition***

Kish and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a thinner subsurface layer
- Soils that have more silt and less sand in the upper and middle parts of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have sandy outwash in the lower part of the profile
- Soils that do not have carbonates at or near the surface

*Dissimilar soils:*

- The poorly drained, noncalcareous Pella and Selma soils on toeslopes

### ***Properties and Qualities of the Kish Soil***

*Parent material:* Calcareous outwash

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 6.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

## **Kishwaukee Series**

*Drainage class:* Well drained  
*Landform:* Outwash plains and stream terraces  
*Parent material:* Thin layer of loess over loamy and gravelly outwash  
*Slope range:* 0 to 5 percent slopes  
*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Argiudolls

### **Typical Pedon**

Kishwaukee silt loam, 0 to 2 percent slopes; at an elevation of about 740 feet; 560 feet north and 1,780 feet east of the southwest corner of sec. 3, T. 43 N., R. 1 E.; Winnebago County, Illinois; USGS Rockford topographic quadrangle; lat. 42 degrees 13 minutes 29 seconds N. and long. 89 degrees 06 minutes 34 seconds W., NAD 27; UTM Zone 16, Easting 0325904, Northing 4676884, NAD 83:

- Ap—0 to 8 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many fine roots; neutral; clear smooth boundary.
- A—8 to 15 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; 20 percent sand; moderate fine granular structure; friable; many fine roots; common faint very dark brown (10YR 2/2) organic coatings on faces of peds; neutral; clear smooth boundary.
- 2Bw—15 to 22 inches; brown (10YR 4/3) clay loam; moderate fine subangular blocky structure; friable; many fine roots; common faint very dark brown (10YR 2/2) organic coatings on faces of peds; moderately acid; clear smooth boundary.
- 2Bt1—22 to 31 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; many fine roots; many faint brown (10YR 4/3) clay films on faces of peds; many distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
- 2Bt2—31 to 43 inches; brown (7.5YR 4/4) sandy clay loam; weak coarse prismatic structure; friable; common fine roots; common prominent dark grayish brown (10YR 4/2) clay films on faces of peds; strongly acid; clear smooth boundary.
- 2BC—43 to 58 inches; brown (7.5YR 4/2) and dark grayish brown (10YR 4/2) gravelly sandy clay loam; weak coarse prismatic structure; very friable; few fine roots in the upper part; moderately acid; clear smooth boundary.
- 3C—58 to 60 inches; brown (10YR 5/3) and yellowish brown (10YR 5/4) sand and gravel; single grain; loose; strongly effervescent; moderately alkaline.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 10 to 20 inches  
*Depth to sand and gravel:* 50 to 70 inches  
*Depth to carbonates:* 50 to 70 inches  
*Depth to the base of soil development:* 50 to 70 inches

*Ap or A horizon:*

Hue—10YR  
 Value—2 or 3  
 Chroma—2 or 3  
 Texture—silt loam

*2Bw or 2Bt horizon:*

Hue—7.5YR or 10YR  
 Value—4 or 5  
 Chroma—3 or 4  
 Texture—silty clay loam, clay loam, loam, or sandy clay loam

*2BC horizon:*

Hue—7.5YR or 10YR  
 Value—4 or 5  
 Chroma—2 to 4  
 Texture—gravelly loam, gravelly sandy loam, or gravelly sandy clay loam  
 Content of gravel—15 to 35 percent

*3C horizon:*

Hue—7.5YR or 10YR  
 Value—4 or 5  
 Chroma—3 to 6  
 Texture—sand and gravel or the gravelly, very gravelly, or extremely gravelly analogs of loamy sand or sand; stratified in some pedons  
 Content of gravel—15 to 70 percent

**623A—Kishwaukee silt loam, 0 to 2 percent slopes*****Setting***

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits

***Map Unit Composition***

Kishwaukee and similar soils: 88 percent

Dissimilar soils: 12 percent

***Components of Minor Extent****Similar soils:*

- Soils that have sand and gravel beginning at a depth of more than 70 inches
- Soils that have no subsurface layer

*Dissimilar soils:*

- The somewhat poorly drained Kane and Lahoguess soils on summits and footslopes

***Properties and Qualities of the Kishwaukee Soil***

*Parent material:* Thin layer of loess over loamy and gravelly outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

#### ***Interpretive Groups***

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

### **623B—Kishwaukee silt loam, 2 to 5 percent slopes**

#### ***Setting***

*Landform:* Stream terraces and outwash plains  
*Position on the landform:* Shoulders and summits

#### ***Map Unit Composition***

Kishwaukee and similar soils: 88 percent  
 Dissimilar soils: 12 percent

#### ***Components of Minor Extent***

##### *Similar soils:*

- Soils that have sand and gravel beginning at a depth of more than 70 inches
- Soils that have no subsurface layer

##### *Dissimilar soils:*

- The somewhat poorly drained Kane and Lahoguess soils on summits and footslopes

#### ***Properties and Qualities of the Kishwaukee Soil***

*Parent material:* Thin layer of loess over loamy and gravelly outwash  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Very rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 9.7 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 3.0 to 5.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

#### ***Interpretive Groups***

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

## ***La Hogue Series***

*Drainage class:* Somewhat poorly drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Outwash

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Aquic Argiudolls

### **Typical Pedon**

La Hogue loam, 0 to 2 percent slopes; at an elevation of 658 feet; 2,000 feet south and 545 feet west of the northeast corner of sec. 7, T. 27 N., R. 9 E.; Ford County, Illinois; USGS Piper City topographic quadrangle; lat. 40 degrees 49 minutes 46 seconds N. and long. 88 degrees 13 minutes 29 seconds W., NAD 27; UTM Zone 16, Easting 0396725, Northing 4520564, NAD 83:

- Ap—0 to 7 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; slightly acid; abrupt smooth boundary.
- A—7 to 13 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; moderate very fine and fine granular structure; friable; slightly acid; clear smooth boundary.
- AB—13 to 16 inches; very dark brown (10YR 2/2) loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure parting to moderate fine and medium granular; friable; slightly acid; clear smooth boundary.
- Bt1—16 to 24 inches; brown (10YR 4/3) clay loam; weak fine and medium prismatic structure parting to moderate fine and medium angular blocky; friable; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine faint grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.
- Bt2—24 to 32 inches; olive brown (2.5Y 4/4) clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; friable; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine prominent strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concretions throughout; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; neutral; clear smooth boundary.
- Bt3—32 to 39 inches; olive brown (2.5Y 4/4) sandy loam; weak medium prismatic structure parting to moderate medium angular blocky; friable; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; neutral; clear smooth boundary.
- BCt—39 to 48 inches; light olive brown (2.5Y 5/4) sandy loam; weak medium angular blocky structure; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.
- C—48 to 60 inches; light olive brown (2.5Y 5/4) sandy loam; massive; friable; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium distinct light brownish gray (2.5Y 6/2) and common fine prominent gray (N 6/) iron depletions in the matrix; slightly alkaline.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 10 to 20 inches

*Depth to carbonates:* More than 60 inches  
*Depth to the base of soil development:* 35 to 60 inches

*Ap or A horizon:*

Hue—10YR  
 Value—2 or 3  
 Chroma—1 or 2  
 Texture—loam

*Bt horizon:*

Hue—7.5YR, 10YR, or 2.5Y  
 Value—4 to 6  
 Chroma—2 to 6  
 Texture—clay loam, loam, sandy clay loam, or sandy loam  
 Content of gravel—less than 7 percent

*C or Cg horizon:*

Hue—7.5YR, 10YR, 2.5Y, or 5Y  
 Value—4 to 6  
 Chroma—1 to 8  
 Texture—loam, sandy loam, silt loam, or loamy sand; stratified in some pedons  
 Content of gravel—less than 15 percent

## **102A—La Hogue loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Outwash plains and stream terraces  
*Position on the landform:* Footslopes and summits

### ***Map Unit Composition***

La Hogue and similar soils: 90 percent  
 Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have no surface layer
- Soils that have carbonates at a depth of less than 60 inches
- Soils that have more sand and less silt and clay in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Selma soils on toeslopes

### ***Properties and Qualities of the La Hogue Soil***

*Parent material:* Outwash

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Lahoguess Series**

*Drainage class:* Somewhat poorly drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Outwash

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Aquic Argiudolls

### **Typical Pedon**

Lahoguess loam, 0 to 2 percent slopes; at an elevation of 835 feet; 475 feet north and 1,000 feet east of the southwest corner of sec. 23, T. 44 N., R. 6 E.; McHenry County, Illinois; USGS Marengo topographic quadrangle; lat. 42 degrees 16 minutes 15 seconds N. and long. 88 degrees 30 minutes 26 seconds W., NAD 27; UTM Zone 16, Easting 0375697, Northing 4680950, NAD 83:

Ap—0 to 9 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.

A—9 to 14 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium subangular blocky structure parting to moderate fine granular; friable; common very fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; neutral; clear smooth boundary.

AB—14 to 18 inches; very dark grayish brown (10YR 3/2) clay loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; friable; common very fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—18 to 29 inches; olive brown (2.5Y 4/4) clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; few distinct olive brown (2.5Y 4/3) and dark grayish brown (2.5Y 4/2) clay films on faces of peds; few distinct very dark grayish brown (2.5Y 3/2) organo-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.

Bt2—29 to 38 inches; light olive brown (2.5Y 5/4) clay loam; moderate medium subangular blocky structure; friable; common very fine roots; few distinct olive brown (2.5Y 4/3) clay films on faces of peds; common medium dark gray (10YR 4/1) and very dark gray (10YR 3/1) krotovinas; common fine and medium distinct yellowish brown (10YR 5/6) and prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; many fine and medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; 2 percent gravel; neutral; clear wavy boundary.

BCg—38 to 46 inches; grayish brown (2.5Y 5/2) sandy loam; weak medium subangular blocky structure; friable; common very fine roots; common medium dark gray (10YR 4/1) and very dark gray (10YR 3/1) krotovinas; common fine and

medium prominent brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; many fine and medium faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 2 percent gravel; neutral; abrupt smooth boundary.

2C—46 to 60 inches; 60 percent light olive brown (2.5Y 5/3) and 40 percent light yellowish brown (2.5Y 6/3), stratified loamy sand and sand; single grain; loose; 1 percent gravel; slightly alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 20 inches

*Depth to sandy outwash:* 35 to 55 inches

*Depth to the base of soil development:* 35 to 55 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—loam

*Bt horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—clay loam or loam

*BC or BCg horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—loam, sandy loam, or loamy sand

Content of gravel—less than 10 percent

*2C or 2Cg horizon:*

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—2 to 8

Texture—sand or loamy sand; stratified in some pedons

Content of gravel—less than 15 percent

## 528A—Lahoguess loam, 0 to 2 percent slopes

### Setting

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Footslopes and summits

### Map Unit Composition

Lahoguess and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have more silt and less sand in the upper and middle parts of the profile
- Soils that have sandy outwash beginning at a depth of less than 35 inches or more than 55 inches
- Soils that have no subsurface layer
- Soils that have more sand and less clay in the upper and middle parts of the profile

*Dissimilar soils:*

- The poorly drained Selmass soils on toeslopes

***Properties and Qualities of the Lahoguess Soil***

*Parent material:* Outwash

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

***Lamartine Series***

*Drainage class:* Somewhat poorly drained

*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 Aquollic Hapludalfs

***Typical Pedon***

Lamartine silt loam, 0 to 2 percent slopes; at an elevation of 800 feet; 2,525 feet north and 1,615 feet east of the southwest corner of sec. 22, T. 44 N., R. 4 E.; Boone County, Illinois; USGS Belvidere North topographic quadrangle; lat. 42 degrees 16 minutes 36 seconds N. and long. 88 degrees 45 minutes 29 seconds W., NAD 27; UTM Zone 16, Easting 0355023, Northing 4682000, NAD 83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 4/3) dry; weak medium subangular blocky structure parting to weak medium granular; friable; many very fine roots; neutral; abrupt smooth boundary.

Bt1—9 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; common fine dark brown (7.5YR 3/2) masses of manganese oxide accumulation throughout; common fine distinct yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine and medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

- Bt2**—21 to 25 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 and fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; common fine dark brown (7.5YR 3/2) masses of manganese oxide accumulation throughout; common fine and medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine and medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; 1 percent gravel; neutral; gradual wavy boundary.
- 2Bt3**—25 to 32 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; common fine and medium dark brown (7.5YR 3/2) masses of manganese oxide accumulation throughout; common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common fine and medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; 1 percent gravel; neutral; gradual wavy boundary.
- 2BCt**—32 to 39 inches; brown (10YR 5/3) loam; weak medium prismatic structure parting to weak medium and coarse subangular blocky; friable; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; common medium and coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common fine and medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.
- 2C**—39 to 60 inches; brown (10YR 5/3) loam; massive; friable; very few distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and pores; common medium prominent strong brown (7.5YR 5/8) and common medium and coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine and medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent gravel; strongly effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the loess or other silty material:* 20 to 36 inches

*Depth to carbonates:* 24 to 40 inches

*Depth to the base of soil development:* 24 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

*E horizon (where present):*

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

*Bt horizon:*

Hue—10YR or 2.5Y

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—clay loam or loam  
 Content of gravel—less than 10 percent

*2C horizon:*

Hue—7.5YR or 10YR  
 Value—4 to 6  
 Chroma—2 to 4  
 Texture—loam or sandy loam  
 Content of gravel—3 to 15 percent

**766A—Lamartine silt loam, 0 to 2 percent slopes*****Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Summits and footslopes

***Map Unit Composition***

Lamartine and similar soils: 92 percent

Dissimilar soils: 8 percent

***Components of Minor Extent****Similar soils:*

- Soils that have till beginning at a depth of more than 36 inches
- Soils that have 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 thicker surface layer

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

***Properties and Qualities of the Lamartine Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Not hydric

### ***Lisbon Series***

*Drainage class:* Somewhat poorly drained

*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 Aquic Argiudolls

### **Typical Pedon**

Lisbon silt loam, 0 to 2 percent slopes; 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.; Boone County, Illinois; USGS Riley topographic quadrangle; lat. 42 degrees 09 minutes 25 seconds N. and long. 88 degrees 43 minutes 26 seconds W., NAD 27; UTM Zone 16, Easting 0357574, Northing 4668632, NAD 83:

- 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 faint 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 distinct 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 the loess or other silty material:* 20 to 40 inches

*Depth to carbonates:* 20 to 40 inches

*Depth to the base of soil development:* 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

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

### Setting

*Landform:* Ground moraines and end moraines

*Position on the landform:* Summits and footslopes

### Map Unit Composition

Lisbon and similar soils: 92 percent

Dissimilar soils: 8 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have no subsurface layer

- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have more sand and less clay in the lower part of the profile
- 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

***Properties and Qualities of the Lisbon Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

***Lismod Series***

*Drainage class:* Somewhat poorly drained

*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***

Lismod silt loam, 0 to 2 percent slopes; at an elevation of about 841 feet; 2,580 feet south and 2,580 feet west of the northeast corner of sec. 35, T. 45 N., R. 4 E.; Boone County, Illinois; USGS Garden Prairie topographic quadrangle; lat. 42 degrees 20 minutes 07 seconds N. and long. 88 degrees 44 minutes 05 seconds W., NAD 27; UTM Zone 16, Easting 0357087, Northing 4688477, NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

AB—8 to 15 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; common fine roots; neutral; clear smooth boundary.

Bt1—15 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable;

few fine roots; few faint brown (10YR 4/3) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt2—19 to 26 inches; dark yellowish brown (10YR 4/4) 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 faces of peds; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; few fine faint brown (7.5YR 4/4) masses of iron accumulation in the matrix; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—26 to 31 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; common fine faint brown (7.5YR 4/4) masses of iron accumulation in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt4—31 to 35 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; common fine faint brown (7.5YR 4/4) masses of iron accumulation in the matrix; many medium faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt5—35 to 39 inches; brown (7.5YR 5/3) clay loam; moderate medium prismatic structure parting to weak medium angular blocky; friable; few fine roots; many faint brown (7.5YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine faint brown (7.5YR 5/2) iron depletions in the matrix; 2 percent pebbles 2 to 5 millimeters in diameter; neutral; clear smooth boundary.

2C1—39 to 48 inches; brown (7.5YR 5/4) loam; massive; friable; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine distinct gray (7.5YR 5/1) iron depletions in the matrix; 2 percent pebbles 1 to 5 millimeters in diameter; slightly effervescent; slightly alkaline; clear smooth boundary.

2C2—48 to 60 inches; brown (7.5YR 5/4) loam; massive; friable; few fine black (7.5YR 2.5/1) 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 pinkish gray (7.5YR 6/2) and few fine distinct gray (7.5YR 6/1) iron depletions in the matrix; 3 percent pebbles 1 to 5 millimeters in diameter; slightly effervescent; slightly alkaline; clear smooth boundary.

2C3—60 to 80 inches; brown (7.5YR 5/4) loam; massive; friable; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many medium distinct pinkish gray (7.5YR 6/2) and few fine distinct gray (7.5YR 6/1) iron depletions in the matrix; 3 percent pebbles 1 to 5 millimeters in diameter; violently effervescent; moderately alkaline.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 10 to 20 inches

*Thickness of the loess or other silty material:* 20 to 40 inches

*Depth to carbonates:* 20 to 40 inches

*Depth to the base of soil development:* 24 to 42 inches

*Ap, A, or AB horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 to 3

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—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—clay loam or loam

*2C horizon:*

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—loam or sandy loam

## **635A—Lismod silt loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Footslopes and summits

### ***Map Unit Composition***

Lismod and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have no subsurface layer
- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have carbonates beginning at a depth of more than 40 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

### ***Properties and Qualities of the Lismod Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **635B—Lismod silt loam, 2 to 4 percent slopes**

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Footslopes and backslopes

### ***Map Unit Composition***

Lismod and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have no subsurface layer
- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have carbonates beginning at a depth of more than 40 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

### ***Properties and Qualities of the Lismod Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Marshan Series**

*Drainage class:* Poorly drained

*Landform:* Stream terraces and outwash plains

*Parent material:* Loamy outwash over sandy and gravelly outwash

*Slope range:* 0 to 2 percent

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

### **Typical Pedon**

Marshan loam, 0 to 2 percent slopes; at an elevation of 772 feet; 1,500 feet north and 210 feet east of the southwest corner of sec. 1, T. 43 N., R. 4 E.; Boone County, Illinois; USGS Riley topographic quadrangle; lat. 42 degrees 13 minutes 50 seconds N. and long. 88 degrees 43 minutes 28 seconds W., NAD 27; UTM Zone 16, Easting 0357685, Northing 4676808, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; many fine roots; neutral; clear smooth boundary.

A—7 to 13 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; common fine roots; neutral; clear smooth boundary.

AB—13 to 17 inches; 70 percent very dark gray (10YR 3/1) and 30 percent grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; common fine roots; neutral; clear smooth boundary.

Bg1—17 to 20 inches; 70 percent olive gray (5Y 5/2) and 30 percent yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; friable; few fine roots; few very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bg2—20 to 24 inches; olive gray (5Y 5/2) loam; moderate fine and medium subangular blocky structure; friable; few fine roots; few fine prominent olive (5Y 5/6) masses of iron accumulation in the matrix; few fine distinct dark gray (10YR 4/1) iron depletions in the matrix; neutral; abrupt smooth boundary.

2C—24 to 60 inches; 70 percent pale olive (5Y 6/3) and 30 percent brownish yellow (10YR 6/6) coarse sand; single grain; loose; 5 percent gravel; neutral.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 12 to 24 inches

*Depth to sandy and gravelly outwash:* 20 to 40 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 24 to 40 inches

*Ap or A horizon:*

Hue—10YR, 2.5Y, 5Y, or N

Value—2 to 3

Chroma—0 to 2

Texture—loam

*B<sub>g</sub>* horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 8

Texture—loam, clay loam, sandy loam, silty clay loam, or silt loam

*2C* or *2C<sub>g</sub>* horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 6

Texture—sand, loamy sand, coarse sand, or loamy coarse sand or the gravelly analogs of these textures

Content of gravel—5 to 30 percent

**772A—Marshan loam, 0 to 2 percent slopes*****Setting****Landform:* Stream terraces and outwash plains*Position on the landform:* Toeslopes***Map Unit Composition***

Marshan and similar soils: 88 percent

Dissimilar soils: 12 percent

***Components of Minor Extent****Similar soils:*

- Soils that have sandy and gravelly outwash beginning at a depth of more than 40 inches
- Soils in which the content of clay increases significantly from the surface layer to the subsoil
- Soils that have more sand and less clay in the subsoil

*Dissimilar soils:*

- The very poorly drained Adrian soils on toeslopes

***Properties and Qualities of the Marshan Soil****Parent material:* Loamy outwash over sandy and gravelly outwash*Drainage class:* Poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 6.5 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 4.0 to 6.0 percent*Shrink-swell potential:* Moderate*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and moderate for concrete*Surface runoff class:* Negligible*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Hydric

### ***Martinsville Series***

*Drainage class:* Well drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash

*Slope range:* 0 to 12 percent

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

### **Typical Pedon**

Martinsville silt loam, 2 to 4 percent slopes; 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.; Kane County, Illinois; USGS Pingree Grove topographic quadrangle; lat. 42 degrees 07 minutes 26 seconds N. and long. 88 degrees 24 minutes 14 seconds W., NAD 27; UTM Zone 16, Easting 0383942, Northing 4664491, NAD 83:

- 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/) 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) silt coatings on faces of peds; common fine and medium black (N 2.5/) 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) silt coatings along cleavage planes; common fine and medium black (N 2.5/) very weakly cemented iron and manganese oxide concretions throughout; 1 percent gravel; slightly acid.

### Range in Characteristics

*Thickness of the loess or other silty material:* Less than 20 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 40 to 70 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt loam

*E horizon (where present):*

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, silt loam, or sandy loam

Content of gravel—less than 10 percent

*C horizon:*

Hue—10YR

Value—4 to 6

Chroma—3 to 6

Texture—stratified sand to silt loam

Content of gravel—less than 10 percent

## 570A—Martinsville silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits

### Map Unit Composition

Martinsville and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a darker surface layer
- Soils that have sandy and gravelly outwash in the lower part of the profile
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Selma soils on toeslopes

### ***Properties and Qualities of the Martinsville Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **570B—Martinsville silt loam, 2 to 4 percent slopes**

### ***Setting***

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits and backslopes

### ***Map Unit Composition***

Martinsville and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a thicker, darker surface layer
- Soils that have sandy and gravelly outwash in the lower part of the profile
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Pella and Selma soils on toeslopes

### ***Properties and Qualities of the Martinsville Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

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

#### ***Interpretive Groups***

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

### **570C2—Martinsville silt loam, 4 to 6 percent slopes, eroded**

#### ***Setting***

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

#### ***Map Unit Composition***

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

#### ***Components of Minor Extent***

##### *Similar soils:*

- Soils that have a darker surface layer
- Soils that have sandy and gravelly outwash in the lower part of the profile
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

##### *Dissimilar soils:*

- The poorly drained Pella and Selma soils on toeslopes

#### ***Properties and Qualities of the Martinsville Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderate or moderately rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 10.6 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 2.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

#### ***Interpretive Groups***

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

## **570D2—Martinsville silt loam, 6 to 12 percent slopes, eroded**

### ***Setting***

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Martinsville and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a darker surface layer
- Soils that have sandy and gravelly outwash in the lower part of the profile
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Beardstown soils on summits
- The somewhat poorly drained La Hogue soils on summits and footslopes

### ***Properties and Qualities of the Martinsville Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## ***McHenry Series***

*Drainage class:* Well drained

*Landform:* Ground moraines and end moraines

*Parent material:* Loess or other silty material and the underlying till

*Slope range:* 2 to 12 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Hapludalfs

### Typical Pedon

McHenry silt loam, 2 to 4 percent slopes; at an elevation of about 860 feet; 60 feet south and 900 feet east of the northwest corner of sec. 17, T. 45 N., R. 8 E.; McHenry County, Illinois; USGS Richmond topographic quadrangle; lat. 42 degrees 23 minutes 07 seconds N. and long. 88 degrees 19 minutes 56 seconds W., NAD 27; UTM Zone 16, Easting 0390337, Northing 4693425, NAD 83:

- A—0 to 5 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine and medium granular structure; friable; common very fine and fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; slightly acid; abrupt smooth boundary.
- E—5 to 10 inches; brown (10YR 4/3) silt loam; weak thin platy structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) organic coatings on faces of peds and in pores; slightly acid; abrupt smooth boundary.
- BE—10 to 14 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) organic coatings on faces of peds and in pores; slightly acid; clear smooth boundary.
- Bt1—14 to 22 inches; dark yellowish brown (10YR 4/4) silty 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; slightly acid; clear smooth boundary.
- 2Bt2—22 to 32 inches; dark yellowish brown (10YR 4/4) loam; moderate medium subangular blocky structure; firm; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; 4 percent gravel; strongly acid; clear smooth boundary.
- 2Bt3—32 to 37 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few distinct dark brown (10YR 3/3) organo-clay films on faces of peds and in pores; 8 percent gravel; neutral; clear smooth boundary.
- 2C—37 to 60 inches; yellowish brown (10YR 5/4) gravelly sandy loam; massive; friable; common medium strong brown (7.5YR 5/6) very weakly cemented iron oxide concretions throughout; 21 percent gravel; violently effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the loess or other silty material:* 15 to 30 inches

*Depth to carbonates:* 30 to 50 inches

*Depth to the base of soil development:* 30 to 50 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—1 to 3

Texture—silt loam

*E horizon (where present):*

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

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 8  
Texture—clay loam, sandy clay loam, loam, sandy loam, or fine sandy loam  
Content of gravel—3 to 15 percent

*2C horizon:*

Hue—7.5YR or 10YR  
Value—4 to 6  
Chroma—3 to 8  
Texture—sandy loam, fine sandy loam, gravelly sandy loam, or gravelly fine sandy loam  
Content of gravel—10 to 30 percent

## **310B—McHenry silt loam, 2 to 4 percent slopes**

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and summits

### ***Map Unit Composition***

McHenry and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that formed in a reddish paleosol
- Soils that have till beginning at a depth of less than 15 inches or more than 30 inches
- Soils that have carbonates beginning at a depth of less than 30 inches or more than 50 inches

*Dissimilar soils:*

- The somewhat poorly drained Kendall and Stronghurst soils on summits and footslopes

### ***Properties and Qualities of the McHenry Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **310C2—McHenry silt loam, 4 to 6 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Shoulders and backslopes

### ***Map Unit Composition***

McHenry and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that formed in a reddish paleosol
- Soils that have till beginning at a depth of less than 15 inches or more than 30 inches
- Soils that have carbonates beginning at a depth of less than 30 inches or more than 50 inches

*Dissimilar soils:*

- The somewhat poorly drained Kendall and Stronghurst soils on summits and footslopes

### ***Properties and Qualities of the McHenry Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## 310D2—McHenry silt loam, 6 to 12 percent slopes, eroded

### **Setting**

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes

### **Map Unit Composition**

McHenry and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that formed in a reddish paleosol
- Soils that have till beginning at a depth of less than 15 inches or more than 30 inches
- Soils that have carbonates beginning at a depth of less than 30 inches or more than 50 inches

#### *Dissimilar soils:*

- The somewhat poorly drained Kendall and Stronghurst soils on summits and footslopes

### **Properties and Qualities of the McHenry Soil**

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Millbrook Series**

*Drainage class:* Somewhat poorly drained

*Landform:* Stream terraces and outwash plains

*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

Millbrook silt loam, 0 to 2 percent slopes; 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.; De Kalb County, Illinois; USGS Marengo South topographic quadrangle; lat. 42 degrees 08 minutes 19 seconds N. and long. 88 degrees 36 minutes 09 seconds W., NAD 27; UTM Zone 16, Easting 0367561, Northing 4666402, NAD 83:

- 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.
- Bt—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.
- Btg1—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 prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.
- 2Btg2—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.
- 2Btg3—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.
- 2Cg1—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.
- 2Cg2—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 the loess or other silty material:* 24 to 40 inches  
*Depth to carbonates:* More than 40 inches  
*Depth to the base of soil development:* 40 to 65 inches

*Ap or A 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 or Btg horizon:*

Hue—10YR or 2.5Y  
 Value—4 to 6  
 Chroma—1 to 6  
 Texture—silty clay loam or silt loam

*2Bt or 2Btg horizon:*

Hue—10YR or 2.5Y  
 Value—4 to 6  
 Chroma—1 to 6  
 Texture—sandy loam, loam, or clay loam  
 Content of gravel—less than 10 percent

*2Cg or 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

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

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Footslopes and summits

***Map Unit Composition***

Millbrook and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a darker subsurface layer
- Soils that have more sand and less clay in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

*Dissimilar soils:*

- The poorly drained Drummer and Pella soils on toeslopes

***Properties and Qualities of the Millbrook Soil***

*Parent material:* Loess or other silty material and the underlying outwash

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 0.5 foot to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Not hydric

## **Millington Series**

*Drainage class:* Poorly drained

*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**

Millington silt loam, 0 to 2 percent slopes, occasionally flooded; at an elevation of 650 feet; 590 feet north and 272 feet east of the southwest corner of sec. 27, T. 39 N., R. 8 E.; Kane County, Illinois; USGS Aurora North topographic quadrangle; lat. 41 degrees 49 minutes 37 seconds N. and long. 88 degrees 19 minutes 12 seconds W., NAD 27; UTM Zone 16, Easting 0390381, Northing 4631411, NAD 83:

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 36 inches

*Depth to carbonates:* Less than 10 inches

*Depth to the base of soil development:* 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 or 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—stratified loam, silt loam, sandy loam, silty clay loam, or clay loam

Content of gravel—less than 15 percent

## 1082A—Millington silt loam, undrained, 0 to 2 percent slopes, occasionally flooded

### Setting

*Landform:* Flood plains

### Map Unit Composition

Millington and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a thinner surface soil
- Soils that have more silt and less sand in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile

*Dissimilar soils:*

- The poorly drained, noncalcareous Comfrey and Sawmill soils on flood plains

***Properties and Qualities of the Millington Soil***

*Parent material:* Calcareous alluvium

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 6.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 0.5 foot below the surface, November through June

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, November through June

*Flooding (frequency, months):* Occasional, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 5w

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Hydric

**3082A—Millington silt loam, 0 to 2 percent slopes, frequently flooded*****Setting***

*Landform:* Flood plains

***Map Unit Composition***

Millington and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a thinner surface soil
- Soils that have more silt and less sand in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile

*Dissimilar soils:*

- The poorly drained, noncalcareous Comfrey and Sawmill soils on flood plains

***Properties and Qualities of the Millington Soil***

*Parent material:* Calcareous alluvium

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 12.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 6.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding (frequency, months):* Frequent, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3w

*Prime farmland category:* Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season

*Hydric soil status:* Hydric

## **8082A—Millington silt loam, 0 to 2 percent slopes, occasionally flooded**

### ***Setting***

*Landform:* Flood plains

### ***Map Unit Composition***

Millington and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a thinner surface soil
- Soils that have more silt and less sand in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile

*Dissimilar soils:*

- The poorly drained, noncalcareous Comfrey and Sawmill soils on flood plains

### ***Properties and Qualities of the Millington Soil***

*Parent material:* Calcareous alluvium

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 6.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding (frequency, months):* Occasional, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

## **Muscature Series**

*Drainage class:* Somewhat poorly drained  
*Landform:* Ground moraines  
*Parent material:* Loess  
*Slope range:* 0 to 2 percent  
*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Aquic Argiudolls

### **Typical Pedon**

Muscature silt loam, 0 to 2 percent slopes; at an elevation of 879 feet; 2,240 feet north and 2,500 feet west of the southeast corner of sec. 29, T. 9 N., R. 1 W.; Warren County, Illinois; USGS Greenbush topographic quadrangle; lat. 40 degrees 44 minutes 11 seconds N. and long. 90 degrees 31 minutes 46 seconds W., NAD 27; UTM Zone 15, Easting 0708613, Northing 4512431, NAD 83:

- Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; very friable; common very fine and fine roots throughout; neutral; abrupt smooth boundary.
- A—7 to 13 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; very friable; common very fine and fine roots throughout; neutral; clear smooth boundary.
- AB—13 to 20 inches; mixed very dark grayish brown (10YR 3/2) and brown (10YR 4/3) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure parting to weak fine granular; friable; common very fine roots throughout; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear smooth boundary.
- Bt1—20 to 28 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots between peds; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common dark brown (7.5YR 3/2) iron and manganese oxide stains in the matrix; neutral; clear smooth boundary.
- Bt2—28 to 38 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots between peds; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) and faint pale brown (10YR 6/3) masses of iron accumulation in the matrix; common dark brown (7.5YR 3/2) iron and manganese oxide stains in the matrix; neutral; clear smooth boundary.
- Btg—38 to 50 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots between peds; common prominent grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; common dark brown (7.5YR 3/2) iron and manganese oxide stains in the matrix; slightly acid; clear smooth boundary.

BCg—50 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium subangular blocky structure; friable; common medium prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; common dark brown (7.5YR 3/2) iron and manganese oxide stains in the matrix; slightly acid; clear smooth boundary.

Cg—60 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; few fine rounded very dark brown (10YR 2/2) weakly cemented iron and manganese oxide nodules in the matrix; neutral.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 20 inches

*Thickness of the loess:* More than 60 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 40 to 64 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

*C horizon:*

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—silt loam or silty clay loam

## 51A—Muscatune silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Ground moraines

*Position on the landform:* Summits

### Map Unit Composition

Muscatune and similar soils: 95 percent

Dissimilar soils: 5 percent

### Components of Minor Extent

*Similar soils:*

- 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
- Soils that have outwash or till in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Drummer and Sable soils on toeslopes
- The well drained Osco soils on summits and shoulders

### ***Properties and Qualities of the Muscatune Soil***

*Parent material:* Loess

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 12.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.5 to 5.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

### ***NewGlarus Series***

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Loess over clayey pedis sediment over dolomite

*Slope range:* 2 to 15 percent

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

### ***Typical Pedon***

NewGlarus silt loam, in an area of Whalan and NewGlarus silt loams, 5 to 10 percent slopes, eroded; at an elevation of 885 feet; 1,150 feet north and 408 feet east of the center of sec. 34, T. 28 N., R. 10 E.; Winnebago County, Illinois; USGS Durand topographic quadrangle; lat. 42 degrees 23 minutes 10 seconds N. and long. 89 degrees 19 minutes 44 seconds W., NAD 27; UTM Zone 16, Easting 0308293, Northing 4695264, NAD 83:

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure parting to weak fine and medium granular; friable; common fine roots; neutral; abrupt smooth boundary.

Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 4/2) clay films on faces of peds; neutral; clear smooth boundary.

Bt2—13 to 18 inches; brown (7.5YR 4/4) silty clay loam; strong fine angular blocky structure; friable; few fine roots; common distinct brown (7.5YR 4/2) clay films on faces of peds; neutral; abrupt smooth boundary.

Bt3—18 to 23 inches; brown (7.5YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine angular and subangular blocky; firm; few fine roots; common distinct brown (7.5YR 4/2) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt4—23 to 30 inches; reddish brown (5YR 4/4) clay; moderate medium prismatic structure parting to moderate medium angular and subangular blocky; firm; few fine roots; common distinct reddish brown (5YR 4/3) clay films on faces of peds; common dark brown (7.5YR 3/2) soft masses of iron and manganese oxides in the matrix; few chert pebbles; neutral; clear smooth boundary.

2Bt5—30 to 36 inches; strong brown (7.5YR 5/6) clay; moderate coarse prismatic structure parting to moderate medium angular and subangular blocky; firm; few fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds; few dark brown (7.5YR 3/2) fillings in root channels; few medium distinct brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; few chert pebbles; neutral; abrupt smooth boundary.

2R—36 inches; fractured dolomite bedrock.

### Range in Characteristics

*Thickness of the loess:* 12 to 34 inches

*Depth to lithic contact:* 20 to 40 inches

*Depth to the base of soil development:* 20 to 40 inches

*Ap or horizon:*

Hue—10YR

Value—3 or 4

Chroma—1 or 2

Texture—silt loam

*Bt horizon:*

Hue—10YR or 7.5YR

Value—3 to 5

Chroma—3 or 4

Texture—silt loam or silty clay loam

*2Bt horizon:*

Hue—7.5YR or 5YR

Value—3 to 6

Chroma—3 to 6

Texture—silty clay loam, silty clay, or clay or the channery analogs of these textures

Content of rock fragments—2 to 35 percent

## 561B—Whalan and NewGlarus silt loams, 2 to 5 percent slopes

### Setting

*Landform:* Ground moraines

*Position on the landform:* Shoulders and summits

### Map Unit Composition

Whalan and similar soils: 46 percent

NewGlarus and similar soils: 44 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that are shallow or deep to bedrock

- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that are moderately eroded
- Soils that have less sand and more silt in the upper one-half of the subsoil

*Dissimilar soils:*

- The well drained Pecatonica and Westville soils, which are very deep to bedrock; on summits and shoulders

***Properties and Qualities of the Whalan Soil***

*Parent material:* Till over residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 7.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

***Properties and Qualities of the NewGlarus Soil***

*Parent material:* Loess over clayey pedisidiment over dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 6.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Whalan—not hydric; NewGlarus—not hydric

**561C2—Whalan and NewGlarus silt loams, 5 to 10 percent slopes, eroded**

***Setting***

*Landform:* Ground moraines

*Position on the landform:* Backslopes and shoulders

### **Map Unit Composition**

Whalan and similar soils: 46 percent  
 NewGlarus and similar soils: 44 percent  
 Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that are shallow or deep to bedrock
- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 5 percent or more than 10 percent

#### *Dissimilar soils:*

- The well drained Pecatonica and Westville soils, which are very deep to bedrock; on shoulders

### **Properties and Qualities of the Whalan Soil**

*Parent material:* Till over residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 6.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Properties and Qualities of the NewGlarus Soil**

*Parent material:* Loess over clayey pedis sediment over dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 6.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland  
*Hydric soil status:* Whalan—not hydric; NewGlarus—not hydric

## **561D2—Whalan and NewGlarus silt loams, 10 to 15 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines  
*Position on the landform:* Backslopes

### ***Map Unit Composition***

Whalan and similar soils: 46 percent  
 NewGlarus and similar soils: 44 percent  
 Dissimilar soils: 10 percent

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that are shallow or deep to bedrock
- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 10 percent or more than 15 percent

#### *Dissimilar soils:*

- The well drained Pecatonica and Westville soils, which are very deep to bedrock; on shoulders and backslopes

### ***Properties and Qualities of the Whalan Soil***

*Parent material:* Till over residuum derived from limestone and dolomite  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Slow  
*Permeability below a depth of 60 inches:* Moderately rapid or rapid  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Available water capacity:* About 5.2 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 2.0 percent  
*Shrink-swell potential:* High  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* High  
*Susceptibility to wind erosion:* Low

### ***Properties and Qualities of the NewGlarus Soil***

*Parent material:* Loess over clayey pedis sediment over dolomite  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Slow  
*Permeability below a depth of 60 inches:* Slow to moderate  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Available water capacity:* About 5.5 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 2.0 percent  
*Shrink-swell potential:* High  
*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 4e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Whalan—not hydric; NewGlarus—not hydric

## **Ockley Series**

*Drainage class:* Well drained

*Landform:* Outwash plains and stream terraces

*Parent material:* Thin layer of loess over loamy outwash over calcareous stratified sandy and gravelly outwash

*Slope range:* 0 to 5 percent

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

### **Typical Pedon**

Ockley silt loam, 2 to 5 percent slopes; at an elevation of 718 feet; 2,543 feet south and 140 feet east of the northwest corner of sec. 6, T. 22 N., R. 14 W.; Champaign County, Illinois; USGS Rankin topographic quadrangle; lat. 40 degrees 23 minutes 32 seconds N. and long. 87 degrees 59 minutes 23 seconds W., NAD 27; UTM 16, Easting 0415999, Northing 4471766, NAD 83:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to moderate fine granular; friable; few faint brown (10YR 5/3) (dry) silt coatings on faces of peds; slightly acid; abrupt smooth boundary.

Bt1—10 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt2—19 to 24 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt3—24 to 35 inches; dark yellowish brown (10YR 4/4) clay loam; moderate coarse prismatic structure; firm; many distinct brown (10YR 4/3) clay films on faces of peds; few medium distinct yellowish brown (10YR 5/6) and prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

2Bt4—35 to 45 inches; brown (10YR 4/3) and dark yellowish brown (10YR 4/4) gravelly clay loam; weak medium subangular blocky structure; friable; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) and prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 25 percent gravel; neutral; clear smooth boundary.

3C1—45 to 53 inches; brown (10YR 4/3) gravelly loamy sand; massive; very friable; 30 percent gravel; slightly effervescent; slightly alkaline; abrupt smooth boundary.

3C2—53 to 60 inches; brown (10YR 5/3), stratified sand and gravel; single grain; loose; strongly effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the loess:* Less than 20 inches

*Depth to sandy and gravelly outwash:* 40 to 60 inches

*Depth to the base of soil development:* 40 to 60 inches

*Ap or A horizon:*

Hue—10YR

Value—3 to 5

Chroma—2 to 4

Texture—silt loam

*Bt horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—silty clay loam or silt loam

*2Bt horizon:*

Hue—10YR, 7.5YR, or 5YR

Value—3 to 5

Chroma—2 to 6

Texture—clay loam, sandy clay loam, or loam or the gravelly analogs of these textures

Content of gravel—0 to 35 percent

*3C horizon:*

Hue—10YR

Value—4 to 6

Chroma—3 or 4

Texture—stratified very gravelly coarse sand to gravelly loamy sand or stratified sand and gravel

Content of gravel—20 to 60 percent

## 387A—Ockley silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits

### Map Unit Composition

Ockley and similar soils: 88 percent

Dissimilar soils: 12 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly outwash beginning at a depth of less than 40 inches or more than 60 inches

*Dissimilar soils:*

- The excessively drained Hononegah soils on summits
- The somewhat poorly drained Hayfield and Kane soils on summits and footslopes

### ***Properties and Qualities of the Ockley Soil***

*Parent material:* Thin layer of loess over loamy outwash over calcareous stratified sandy and gravelly outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 0.5 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and high for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **387B—Ockley silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits and shoulders

### ***Map Unit Composition***

Ockley and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly outwash beginning at a depth of less than 40 inches or more than 60 inches

*Dissimilar soils:*

- The excessively drained Hononegah soils on summits
- The somewhat poorly drained Hayfield and Kane soils on summits and footslopes

### ***Properties and Qualities of the Ockley Soil***

*Parent material:* Thin layer of loess over loamy outwash over calcareous stratified sandy and gravelly outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 0.5 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and high for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Odell Series**

*Drainage class:* Somewhat poorly drained

*Landform:* Ground moraines

*Parent material:* Thin layer of loess over till

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Aquic Argiudolls

### **Typical Pedon**

Odell silt loam, 0 to 2 percent slopes; at an elevation of 835 feet; 2,350 feet north and 1,650 feet west of the southeast corner of sec. 32, T. 21 N., R. 10 E.; Lee County, Illinois; USGS Franklin Grove quadrangle; lat. 41 degrees 45 minutes 51 seconds N. and long. 89 degrees 22 minutes 04 seconds W., NAD 27; UTM Zone 16, Easting 0303169, Northing 4626306, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.

A—7 to 11 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; slightly acid; clear smooth boundary.

AB—11 to 15 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure parting to moderate fine granular; friable; common fine roots; slightly acid; clear smooth boundary.

2Bt1—15 to 20 inches; brown (10YR 4/3) clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

2Bt2—20 to 29 inches; brown (10YR 4/3) clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

2BC—29 to 40 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable; few fine roots; few fine prominent grayish brown (10YR 5/2) and common medium distinct brown (10YR 5/3) iron depletions in the matrix; strongly effervescent; slightly alkaline; clear smooth boundary.

2C—40 to 69 inches; yellowish brown (10YR 5/4) loam; massive; friable; few fine distinct grayish brown (10YR 5/2) and common medium faint brown (10YR 5/3) iron depletions in the matrix; strongly effervescent; slightly alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 20 inches

*Thickness of the loess:* Less than 18 inches

*Depth to carbonates:* 24 to 40 inches

*Depth to the base of soil development:* 24 to 42 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

*2Bt horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—3 to 6

Texture—loam, clay loam, or silty clay loam

Content of gravel—less than 12 percent

*2C horizon:*

Hue—7.5YR to 2.5Y

Value—4 to 7

Chroma—2 to 4

Texture—loam or fine sandy loam

Content of gravel—less than 15 percent

## 490A—Odell silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Ground moraines

*Position on the landform:* Footslopes

### Map Unit Composition

Odell and similar soils: 95 percent

Dissimilar soils: 5 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have no subsurface layer
- Soils that have carbonates beginning at a depth of more than 40 inches
- Soils that have 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 2 feet

*Dissimilar soils:*

- The poorly drained Selma soils on toeslopes

### Properties and Qualities of the Odell Soil

*Parent material:* Thin layer of loess over till

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Ogle Series**

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Loess over a paleosol that formed in till

*Slope range:* 2 to 5 percent

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Typic Argiudolls

### **Typical Pedon**

Ogle silt loam, 2 to 5 percent slopes; at an elevation of 917 feet; 2,110 feet south and 175 feet east of the northwest corner of sec. 22, T. 28 N., R. 8 E.; Stephenson County, Illinois; USGS Dakota topographic quadrangle; lat. 42 degrees 24 minutes 41 seconds N. and long. 89 degrees 34 minutes 26 seconds W., NAD 27; UTM Zone 16, Easting 0288199, Northing 4698666, NAD 83:

Ap—0 to 11 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; slightly acid; gradual smooth boundary.

Bt1—11 to 17 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few very dark grayish brown (10YR 3/2) wormcasts; slightly acid; gradual smooth boundary.

Bt2—17 to 33 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt3—33 to 52 inches; yellowish red (5YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common distinct yellowish red (5YR 4/6) clay films on faces of peds; moderately acid; clear wavy boundary.

2Bt4—52 to 72 inches; reddish brown (5YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular and angular blocky; firm; common distinct reddish brown (5YR 4/3) clay films on faces of peds; strongly acid; gradual wavy boundary.

2BCt—72 to 80 inches; yellowish red (5YR 4/6) silty clay loam; weak medium prismatic structure; firm; few distinct reddish brown (5YR 4/4) clay films on faces of peds; moderately acid.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 18 inches

*Thickness of the loess:* 30 to 50 inches

*Depth to the base of soil development:* More than 60 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

*Bt horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silt loam

*2Bt horizon:*

Hue—2.5YR, 5YR, or 7.5YR

Value—4 to 6

Chroma—4 to 6

Texture—silty clay loam, clay loam, or sandy clay loam

## 412B—Ogle silt loam, 2 to 5 percent slopes

### Setting

*Landform:* Ground moraines

*Position on the landform:* Summits and shoulders

### Map Unit Composition

Ogle and similar soils: 95 percent

Dissimilar soils: 5 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a thinner surface layer
- Soils that have a paleosol beginning at a depth of less than 30 inches or more than 50 inches
- Soils that have bedrock within a depth of 60 inches
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have outwash in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Elburn soils on summits and footslopes
- The somewhat poorly drained Muscatune soils on summits

### Properties and Qualities of the Ogle Soil

*Parent material:* Loess over a paleosol that formed in till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

## **Orion Series**

*Drainage class:* Somewhat poorly drained  
*Landform:* Flood plains  
*Parent material:* Alluvium  
*Slope range:* 0 to 2 percent  
*Taxonomic classification:* Coarse-silty, mixed, superactive, nonacid, mesic Aquic Udifluvents

### **Typical Pedon**

Orion silt loam, 0 to 2 percent slopes, frequently flooded; 270 feet south and 1,000 feet east of the northwest corner of sec. 17, T. 22 N., R. 6 E.; Whiteside County, Illinois; USGS Milledgeville topographic quadrangle; lat. 41 degrees 54 minutes 06 seconds N. and long. 89 degrees 50 minutes 13 seconds W., NAD 27; UTM Zone 16, Easting 0264670, Northing 4642754, NAD 83:

- A—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; massive; friable; many thin strata of brown (10YR 4/3) and very dark gray (10YR 3/1) silt loam; neutral; abrupt smooth boundary.
- C1—5 to 15 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; many thin strata of pale brown (10YR 6/3) and yellowish brown (10YR 5/4) silt loam; few fine distinct brown (7.5YR 4/4) masses of iron accumulation in the matrix; neutral; clear wavy boundary.
- C2—15 to 29 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; many thin strata of dark yellowish brown (10YR 4/4), yellowish brown (10YR 5/6), and pale brown (10YR 6/3) silt loam; few very dark gray (10YR 3/1) wormcasts; few fine distinct brown (7.5YR 4/4) masses of iron accumulation in the matrix; neutral; abrupt wavy boundary.
- Ab1—29 to 39 inches; black (2.5Y 2.5/1) silt loam; weak thick platy structure parting to weak medium and fine subangular blocky; friable; neutral; clear smooth boundary.
- Ab2—39 to 51 inches; black (2.5Y 2.5/1) silty clay loam; strong medium and fine angular blocky structure; friable; neutral; clear smooth boundary.
- Ab3—51 to 60 inches; very dark gray (10YR 3/1) silty clay loam; moderate medium and fine subangular blocky structure; friable; neutral.

### **Range in Characteristics**

*Depth to buried soil:* 20 to 40 inches

*Ap or A horizon:*  
 Hue—10YR  
 Value—3 to 6

Chroma—2 or 3  
Texture—silt loam

*C horizon:*

Hue—10YR  
Value—3 to 5  
Chroma—2 or 3  
Texture—silt loam; stratified with coarser textures in some pedons

*Ab horizon:*

Hue—10YR or 2.5Y  
Value—2 or 3  
Chroma—1 or 2  
Texture—silty clay loam or silt loam

### **3415A—Orion silt loam, 0 to 2 percent slopes, frequently flooded**

#### ***Setting***

*Landform:* Flood plains

#### ***Map Unit Composition***

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

#### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a buried soil that consists of muck
- Soils that have a buried soil that is lighter colored
- Soils that have more sand and less silt in the upper part of the profile
- Soils that have a buried soil beginning at a depth of more than 40 inches

*Dissimilar soils:*

- The poorly drained Comfrey and Sawmill soils on flood plains

#### ***Properties and Qualities of the Orion Soil***

*Parent material:* Alluvium

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 12.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Low

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding (frequency, months):* Frequent, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3w

*Prime farmland category:* Prime farmland where protected from flooding or not frequently flooded during the growing season

*Hydric soil status:* Not hydric

## **802B—Orthents, loamy, undulating**

This map unit consists of areas of disturbed soil material. The soils are classified as fine-loamy, mixed, active, nonacid, mesic Oxyaquic Udorthents. The surface layer is very dark grayish brown, friable silt loam about 6 inches thick. The upper part of the underlying material is brown and dark yellowish brown, firm clay loam and loam. The lower part to a depth of 60 inches is mottled yellowish brown and brown, firm loam.

### ***Setting***

*Landform:* Outwash plains, leveled areas, and ground moraines

*Position on the landform:* Summits and backslopes

### ***Map Unit Composition***

Orthents, loamy, and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more silt and less sand in the profile
- Soils that have more than 15 percent gravel in the lower one-half of the profile
- Soils that have carbonates at or near the surface
- Soils that have a seasonal high water table at a depth of less than 3.5 feet

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes
- The very poorly drained Houghton soils on toeslopes

### ***Properties and Qualities of the Orthents***

*Parent material:* Earthy fill

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 0.5 to 2.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 3.5 to 5.0 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Oscos Series**

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Loess

*Slope range:* 0 to 5 percent

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Typic Argiudolls

### **Typical Pedon**

Oscos silt loam, 2 to 5 percent slopes; at an elevation of 858 feet; 316 feet north and 88 feet west of the southeast corner of sec. 23, T. 24 N., R. 6 E.; Carroll County, Illinois; USGS Lanark topographic quadrangle; lat. 42 degrees 03 minutes 13.4 seconds N. and long. 89 degrees 45 minutes 48.2 seconds W., NAD 27; UTM Zone 16, Easting 0271326, Northing 4659436, NAD 83:

- Ap—0 to 10 inches; very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.
- A—10 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium and coarse granular structure; friable; common fine roots; strongly acid; clear smooth boundary.
- BA—14 to 20 inches; dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) silt loam; weak fine subangular blocky structure; friable; common fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
- Bt1—20 to 26 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; few distinct gray (10YR 6/1) (dry) silt coatings on faces of peds; common faint dark brown (10YR 3/3) clay films on faces of peds; strongly acid; clear smooth boundary.
- Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; many fine very dark gray (N 3/) and dark brown (7.5YR 3/2) iron and manganese oxide concretions in the matrix; common fine faint brown (10YR 5/3) and common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.
- Bt3—37 to 45 inches; light yellowish brown (10YR 6/4) silty clay loam; moderate coarse subangular blocky structure; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; few medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; strongly acid; gradual smooth boundary.
- BC—45 to 55 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silty clay loam; weak coarse angular blocky structure; friable; few fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual smooth boundary.
- C—55 to 60 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silt loam; massive; friable; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 18 inches

*Depth to carbonates:* More than 48 inches

*Depth to the base of soil development:* 40 to more than 60 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

*Bt horizon:*

Hue—10YR

Value—4 to 6

Chroma—3 or 4

Texture—silty clay loam or silt loam

*C horizon:*

Hue—10YR

Value—4 or 5

Chroma—2 to 6

Texture—silt loam or silty clay loam

## 86A—Osco silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Ground moraines

*Position on the landform:* Summits

### Map Unit Composition

Osco and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have outwash or till in the lower part of the profile
- Soils that have a thinner surface soil

*Dissimilar soils:*

- The poorly drained Sable soils on toeslopes
- The somewhat poorly drained Muscatune soils on summits

### Properties and Qualities of the Osco Soil

*Parent material:* Loess

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 4.0 to 6.0 feet, February through April

*Ponding:* None

*Flooding:* None

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

#### ***Interpretive Groups***

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

### **86B—Osco silt loam, 2 to 5 percent slopes**

#### ***Setting***

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

#### ***Map Unit Composition***

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

#### ***Components of Minor Extent***

##### *Similar soils:*

- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have outwash or till in the lower part of the profile
- Soils that have a thinner surface soil

##### *Dissimilar soils:*

- The poorly drained Sable soils on toeslopes
- The somewhat poorly drained Muscatune soils on summits

#### ***Properties and Qualities of the Osco Soil***

*Parent material:* Loess  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 11.9 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 3.0 to 4.0 percent  
*Shrink-swell potential:* Moderate  
*Apparent seasonal high water table (depth, months):* 4.0 to 6.0 feet, February through April  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

#### ***Interpretive Groups***

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

## ***Palms Series***

*Drainage class:* Very poorly drained

*Landform:* Outwash plains, end moraines, ground moraines, flood plains, and depressions

*Parent material:* Herbaceous organic material over loamy material or alluvium

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Loamy, mixed, euic, mesic Terric Haplosaprists

### **Typical Pedon**

Palms muck, 0 to 2 percent slopes; at an elevation of 875 feet; 115 feet south and 1,020 feet east of the northwest corner of sec. 15, T. 45 N., R. 4 E.; Boone County, Illinois; USGS Belvidere topographic quadrangle; lat. 42 degrees 23 minutes 08 seconds N. and long. 88 degrees 45 minutes 37 seconds W., NAD 27; UTM Zone 16, Easting 0355084, Northing 4694094, NAD 83:

Oap—0 to 6 inches; muck (sapric material), black (N 2.5/) broken face and rubbed, black (10YR 2/1) dry; about 25 percent fiber, less than 5 percent rubbed; moderate fine granular structure; friable; about 10 percent mineral material; neutral; clear smooth boundary.

Oa1—6 to 10 inches; muck (sapric material), black (N 2.5/) broken face and rubbed; about 7 percent fiber, less than 5 percent rubbed; moderate fine angular blocky structure; friable; about 15 percent mineral material; neutral; clear smooth boundary.

Oa2—10 to 32 inches; muck (sapric material), black (N 2.5/) broken face and rubbed; about 5 percent fiber, less than 5 percent rubbed; massive; friable; about 10 percent mineral material; neutral; clear smooth boundary.

Cg—32 to 60 inches; 60 percent greenish gray (5G 5/1) and 40 percent gray (5Y 5/1) silty clay loam; massive; friable; slightly alkaline.

### **Range in Characteristics**

*Thickness of organic deposits:* 16 to 51 inches

#### *Surface tier:*

Hue—7.5YR, 10YR, or N

Value—2 to 3

Chroma—0 to 2

Texture—muck (sapric material)

#### *Subsurface tier:*

Hue—7.5YR, 10YR, or N

Value—2 to 4

Chroma—0 to 3

Texture—muck (sapric material)

#### *Cg horizon:*

Hue—10YR, 2.5Y, 5Y, 5GY, 5G, or N

Value—4 to 6

Chroma—0 to 3

Texture—silt loam, loam, silty clay loam, sandy loam, or clay loam or the gravelly analogs of these textures

Content of gravel—less than 20 percent

## 100A—Palms muck, 0 to 2 percent slopes

### *Setting*

*Landform:* Outwash plains, end moraines, and ground moraines

*Position on the landform:* Toeslopes

### *Map Unit Composition*

Palms and similar soils: 88 percent

Dissimilar soils: 12 percent

### *Components of Minor Extent*

#### *Similar soils:*

- Soils that have organic deposits more than 51 inches thick
- Soils that have a lower content of organic matter in the surface tier
- Soils that have more sand and less clay or silt in the lower part of the profile
- Soils that have carbonates at or near the surface

#### *Dissimilar soils:*

- The poorly drained Drummer and Selma soils on toeslopes

### *Properties and Qualities of the Palms Soil*

*Parent material:* Herbaceous organic material over loamy material

*Drainage class:* Very poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow or moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 17.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 75.0 to 99.0 percent

*Shrink-swell potential:* Low

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, November through June

*Ponding (depth, months):* At the surface to 1.0 foot above the surface, November through June

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* High

### *Interpretive Groups*

*Land capability classification:* 3w

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Hydric

## 1100A—Palms muck, undrained, 0 to 2 percent slopes, frequently flooded

### *Setting*

*Landform:* Flood plains and depressions

*Position on the landform:* Toeslopes

### **Map Unit Composition**

Palms and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have organic deposits more than 51 inches thick
- Soils that have a lower content of organic matter in the surface tier
- Soils that have more sand and less clay or silt in the lower part of the profile
- Soils that have carbonates at or near the surface

#### *Dissimilar soils:*

- The poorly drained Comfrey and Sawmill soils on flood plains

### **Properties and Qualities of the Palms Soil**

*Parent material:* Herbaceous organic material over loamy alluvium

*Drainage class:* Very poorly drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow or moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 18.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 75.0 to 99.0 percent

*Shrink-swell potential:* Low

*Apparent seasonal high water (depth, months):* At the surface to 0.5 foot below the surface, January through December

*Ponding (depth, months):* At the surface to 1.0 foot above the surface, January through December

*Flooding (frequency, months):* Frequent, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* High

### **Interpretive Groups**

*Land capability classification:* 5w

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Hydric

### **Parmod Series**

*Drainage class:* Well drained

*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, superactive, mesic Typic Argiudolls

*Taxadjunct features:* The Parmod soil in map unit 636C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, superactive, mesic Mollic Hapludalf.

### **Typical Pedon**

Parmod silt loam, 2 to 5 percent slopes; at an elevation of 854 feet; 405 feet north and 850 feet west of the southeast corner of sec. 35, T. 45 N., R. 4 E.; Boone County,

Illinois; USGS Garden Prairie topographic quadrangle; lat. 42 degrees 19 minutes 44 seconds N. and long. 88 degrees 43 minutes 42 seconds W., NAD 27; UTM Zone 16, Easting 0357595, Northing 4687739, NAD 83:

- Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine and fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.
- AB—7 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine and fine subangular blocky structure parting to weak fine granular; friable; common very fine roots; neutral; clear smooth boundary.
- Bt1—12 to 19 inches; brown (10YR 4/3) 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 and in pores; few distinct dark brown (10YR 3/3) clay films on faces of peds; neutral; clear smooth boundary.
- 2Bt2—19 to 26 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 very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; few distinct brown (7.5YR 4/3) and dark brown (7.5YR 3/3) clay films on faces of peds; 2 percent gravel; neutral; clear smooth boundary.
- 2Bt3—26 to 34 inches; brown (7.5YR 4/4) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; very few very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and in pores; few distinct brown (7.5YR 4/3) clay films on faces of peds; 2 percent gravel; neutral; clear smooth boundary.
- 2BC—34 to 38 inches; brown (7.5YR 5/4) loam; weak medium and coarse subangular blocky structure; firm; common very fine roots; very few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and in pores; 5 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.
- 2C—38 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; common very fine roots; few fine and medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 6 percent gravel; very strongly effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon or dark surface layer:* 7 to 18 inches

*Thickness of the loess or other silty material:* Less than 20 inches

*Depth to carbonates:* 20 to 40 inches

*Depth to the base of soil development:* 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 to 6

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 to 6  
 Texture—loam or sandy loam  
 Content of gravel—3 to 15 percent

## **636B—Parmod silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and summits

### ***Map Unit Composition***

Parmod and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have no subsurface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have less sand and more silt in the middle part of the subsoil

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Parmod Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **636C2—Parmod silt loam, 5 to 10 percent slopes, eroded**

### ***Setting***

*Landform:* End moraines and ground moraines

*Position on the landform:* Backslopes and shoulders

### **Map Unit Composition**

Parmod and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have carbonates beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have less sand and more silt in the middle part of the subsoil

#### *Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### **Properties and Qualities of the Parmod Soil**

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

### **Parr Series**

*Drainage class:* Moderately well drained

*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 soil in map unit 221C2 has a thinner dark surface soil than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, active, mesic Mollic Oxyaquic Hapludalf.

### **Typical Pedon**

Parr silt loam, 2 to 5 percent slopes; 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.; McHenry County, Illinois; USGS Marengo North topographic quadrangle; lat. 42 degrees 16 minutes 31

seconds N. and long. 88 degrees 30 minutes 04 seconds W., NAD 27; UTM Zone 16, Easting 0376210, Northing 4681447, NAD 83:

- 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 the mollic epipedon or dark surface layer:* 7 to 18 inches

*Thickness of the loess or other silty material:* Less than 18 inches

*Depth to carbonates:* 20 to 40 inches

*Depth to the base of soil development:* 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

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

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and summits

### ***Map Unit Composition***

Parr and similar soils: 92 percent

Dissimilar soils: 8 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that are moderately eroded
- Soils that have till beginning at a depth of more than 18 inches
- Soils that have more clay in the subsoil

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Parr Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

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

### ***Setting***

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

### ***Map Unit Composition***

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

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that have till beginning at a depth of more than 18 inches
- Soils that have more clay in the subsoil

#### *Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### ***Properties and Qualities of the Parr Soil***

*Parent material:* Thin mantle of loess or other silty material and the underlying till  
*Drainage class:* Moderately well drained  
*Slowest permeability within a depth of 40 inches:* Moderately slow  
*Permeability below a depth of 60 inches:* Moderately slow  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 8.2 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* High for steel and moderate for concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

## ***Pecatonica Series***

*Drainage class:* Well drained  
*Landform:* Ground moraines  
*Parent material:* Thin layer of loess over a paleosol that formed in loamy till

*Slope range:* 2 to 10 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Hapludalfs

### Typical Pedon

Pecatonica silt loam, 2 to 5 percent slopes; at an elevation of about 800 feet; 800 feet north and 50 feet west of the southeast corner of sec. 25, T. 26 N., R. 11 E.; Winnebago County, Illinois; USGS Kishwaukee topographic quadrangle; lat. 42 degrees 13 minutes 15 seconds N. and long. 89 degrees 10 minutes 24 seconds W., NAD 27; UTM Zone 16, Easting 0320629, Northing 4676582, NAD 83:

- A—0 to 3 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.
- E1—3 to 5 inches; dark grayish brown (10YR 4/2) silt loam; moderate thin platy structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and worm channel linings; slightly acid; clear smooth boundary.
- E2—5 to 10 inches; yellowish brown (10YR 5/4) silt loam; moderate medium platy structure; friable; common very fine roots; few distinct light gray (10YR 7/1) (dry) silt coatings and dark brown (10YR 3/3) organic coatings on faces of peds; moderately acid; clear smooth boundary.
- BE—10 to 18 inches; brown (7.5YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
- 2Bt1—18 to 26 inches; brown (7.5YR 4/4) clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots; common distinct reddish brown (5YR 4/4) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; 10 percent pebbles; strongly acid; clear smooth boundary.
- 2Bt2—26 to 46 inches; red (2.5YR 4/6) sandy clay loam; moderate medium and coarse angular blocky structure; firm; few very fine roots; common distinct dark reddish brown (2.5YR 3/4) clay films on faces of peds; 6 percent pebbles; strongly acid; clear smooth boundary.
- 2Bt3—46 to 64 inches; sandy clay loam, 65 percent red (2.5YR 4/6), 30 percent dark reddish brown (2.5YR 3/4), and 5 percent pockets of yellowish brown (10YR 5/4); weak coarse angular blocky structure; firm; common distinct dark reddish brown (2.5YR 3/4) clay films on faces of peds; 6 percent pebbles; moderately acid; clear smooth boundary.
- 2Bt4—64 to 68 inches; brown (7.5YR 4/4) sandy clay loam; weak coarse angular blocky structure; firm; few very fine roots; common distinct dark brown (7.5YR 3/2) clay films on faces of peds; 6 percent pebbles; slightly acid; clear smooth boundary.
- 2C—68 to 80 inches; yellowish brown (10YR 5/4) loam; massive; friable; few very fine roots; 8 percent pebbles; strongly effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the loess:* 15 to 25 inches

*Depth to the base of soil development:* More than 48 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4; 2 in pedons in uncultivated areas

Chroma—2 or 3

Texture—silt loam

*E horizon:*

Hue—10YR  
 Value—4 to 6  
 Chroma—2 or 3  
 Texture—silt loam

*Bt horizon:*

Hue—10YR or 7.5YR  
 Value—4 or 5  
 Chroma—4 to 6  
 Texture—silt loam or silty clay loam

*2Bt horizon:*

Hue—7.5YR, 5YR, or 2.5YR  
 Value—4 to 6  
 Chroma—4 to 6  
 Texture—clay loam, sandy clay loam, loam, or sandy loam or the gravelly analogs of these textures  
 Content of gravel—less than 25 percent

*2C horizon (where present):*

Hue—10YR or 7.5YR  
 Value—4 to 6  
 Chroma—4 to 6  
 Texture—sandy loam, loam, gravelly sandy loam, or gravelly loam  
 Content of gravel—less than 25 percent

**21B—Pecatonica silt loam, 2 to 5 percent slopes*****Setting***

*Landform:* Ground moraines

*Position on the landform:* Summits and shoulders

***Map Unit Composition***

Pecatonica and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a paleosol beginning at a depth of less than 15 inches or more than 25 inches
- Soils that have more clay in the subsoil
- Soils that are moderately eroded

*Dissimilar soils:*

- The somewhat poorly drained Kendall soils on summits and footslopes

***Properties and Qualities of the Pecatonica Soil***

*Parent material:* Thin layer of loess over a paleosol that formed in loamy till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **21C2—Pecatonica silt loam, 5 to 10 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Backslopes and shoulders

### ***Map Unit Composition***

Pecatonica and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a paleosol beginning at a depth of less than 15 inches or more than 25 inches
- Soils that have more clay in the subsoil

*Dissimilar soils:*

- The somewhat poorly drained Kendall soils on summits and footslopes

### ***Properties and Qualities of the Pecatonica Soil***

*Parent material:* Thin layer of loess over a paleosol that formed in loamy till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

### **Pella Series**

*Drainage class:* Poorly drained

*Landform:* Lake plains, ground moraines, and outwash plains

*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**

Pella silty clay loam, 0 to 2 percent slopes; at an elevation of 658 feet; 190 feet north and 2,225 feet west of the southeast corner of sec. 14, T. 27 N., R. 9 E.; Ford County, Illinois; USGS Piper City topographic quadrangle; lat. 40 degrees 48 minutes 27 seconds N. and long. 88 degrees 09 minutes 13 seconds W., NAD 27; UTM Zone 16, Easting 0402698, Northing 4518025, NAD 83:

- Ap—0 to 7 inches; black (N 2.5/) silty clay loam, dark gray (N 4/) dry; moderate very fine and fine granular structure; friable; slightly acid; abrupt smooth boundary.
- A—7 to 12 inches; black (N 2.5/) silty clay loam, dark gray (N 4/) dry; moderate fine and very fine granular structure; friable; neutral; clear smooth boundary.
- Bg1—12 to 20 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine and medium prismatic structure parting to moderate fine and very fine angular blocky; friable; few fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; neutral; clear smooth boundary.
- Bg2—20 to 27 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine and medium prismatic structure parting to moderate fine and medium angular blocky; friable; common medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.
- Bg3—27 to 33 inches; gray (5Y 6/1) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; friable; few very dark gray (10YR 3/1) krotovinas; many medium prominent light olive brown (2.5Y 5/4) and common fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline; gradual wavy boundary.
- 2BCg—33 to 42 inches; gray (5Y 6/1) silt loam with a high content of sand; weak medium prismatic structure; friable; moderate medium prominent light olive brown (2.5Y 5/4) and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly effervescent; moderately alkaline; gradual wavy boundary.
- 2Cg—42 to 60 inches; gray (5Y 6/1), stratified silt loam, loam, and sandy loam; massive; friable; many medium prominent light olive brown (2.5Y 5/4) and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly effervescent; moderately alkaline.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 10 to 24 inches

*Thickness of the loess or other silty material:* 20 to 40 inches

*Depth to carbonates:* 16 to 40 inches

*Depth to the base of soil development:* 30 to 50 inches

*Ap or A horizon:*

Hue—10YR, 2.5Y, or N

Value—2 to 3  
 Chroma—0 to 2  
 Texture—silty clay loam

*Bg horizon:*

Hue—10YR, 2.5Y, or 5Y  
 Value—4 to 6  
 Chroma—1 or 2  
 Texture—silty clay loam

*2Bg or 2BCg horizon:*

Hue—10YR, 2.5Y, or 5Y  
 Value—5 or 6  
 Chroma—1 to 6  
 Texture—silt loam, loam, sandy loam, silty clay loam, or clay loam  
 Content of gravel—less than 10 percent

*2Cg horizon:*

Hue—10YR, 2.5Y, or 5Y  
 Value—5 or 6  
 Chroma—1 to 8  
 Texture—stratified loamy sand to silty clay loam  
 Content of gravel—less than 15 percent

## **153A—Pella silty clay loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Lake plains, ground moraines, and outwash plains

*Position on the landform:* Toeslopes

### ***Map Unit Composition***

Pella and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have till in the lower part of the profile
- Soils that have sandy and gravelly deposits in the lower part of the profile
- Soils that have loamy outwash beginning at a depth of more than 40 inches
- Soils that are overlain by recent, light-colored deposition

*Dissimilar soils:*

- The very poorly drained Houghton soils on toeslopes

### ***Properties and Qualities of the Pella Soil***

*Parent material:* Loess or other silty material and the underlying outwash

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 12.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 6.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Hydric

## **Piscasaw Series**

*Drainage class:* Well drained

*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-silty, mixed, superactive, mesic Typic Hapludalfs

### **Typical Pedon**

Piscasaw silt loam, 2 to 4 percent slopes; at an elevation of 938 feet; 2,350 feet north and 900 feet east of the southwest corner of sec. 20, T. 46 N., R. 5 E.; McHenry County, Illinois; USGS Capron topographic quadrangle; lat. 42 degrees 27 minutes 01 second N. and long. 88 degrees 41 minutes 02 seconds W., NAD 27; UTM Zone 16, Easting 0361511, Northing 4701166, NAD 83:

- Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds; neutral; abrupt smooth boundary.
- EB—9 to 12 inches; 70 percent brown (10YR 4/3) and 30 percent dark yellowish brown (10YR 4/4) silt loam; moderate medium platy structure parting to weak fine subangular blocky; friable; common very fine roots; few distinct dark brown (10YR 3/3) organic coatings on faces of peds; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; neutral; clear smooth boundary.
- Bt1—12 to 17 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films and light gray (10YR 7/2) (dry) silt coatings on faces of peds and in pores; slightly acid; clear smooth boundary.
- Bt2—17 to 26 inches; dark yellowish brown (10YR 4/4) silty 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 and in pores; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds and in pores; strongly acid; clear smooth boundary.
- 2Bt3—26 to 36 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct brown (7.5YR 4/3) clay films and very pale brown (10YR 7/3) (dry) silt coatings on faces of peds and in pores; 2 percent gravel; moderately acid; gradual smooth boundary.
- 2Bt4—36 to 46 inches; brown (7.5YR 4/4) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds and in pores; few distinct

very pale brown (10YR 7/3) (dry) silt coatings on faces of peds and in pores; 3 percent gravel; slightly acid; gradual smooth boundary.

2BC—46 to 51 inches; brown (7.5YR 5/4) loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; few very fine roots; few distinct brown (7.5YR 4/3) clay films in root channels and in pores; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; 4 percent gravel; slightly alkaline; gradual smooth boundary.

2C—51 to 62 inches; brown (7.5YR 5/4) loam; massive; firm; few distinct brown (7.5YR 4/3) linings in root channels and in pores; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; 8 percent gravel; slightly effervescent; slightly alkaline.

### Range in Characteristics

*Thickness of the loess or other silty material:* 22 to 40 inches

*Depth to carbonates:* 36 to 60 inches

*Depth to the base of soil development:* 40 to 60 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt loam

*E horizon (where present):*

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam

*Bt horizon:*

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silt loam

*2Bt or 2BC horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—clay loam, sandy clay loam, or loam

Content of gravel—2 to 10 percent

*2C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—loam, sandy loam, or fine sandy loam

Content of gravel—3 to 15 percent

## 543B—Piscasaw silt loam, 2 to 4 percent slopes

### Setting

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and summits

### **Map Unit Composition**

Piscasaw and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have till beginning at a depth of less than 22 inches or more than 40 inches
- Soils that contain carbonates at a depth of less than 36 inches
- Soils that have a darker surface layer
- Soils that have a seasonal high water table within a depth of 6 feet

#### *Dissimilar soils:*

- The poorly drained Pella soils on toeslopes
- The somewhat poorly drained Torox soils on footslopes and summits

### **Properties and Qualities of the Piscasaw Soil**

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **864—Pits, quarry**

This map unit is in nearly level and 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.

### **Map Unit Composition**

Pits, quarry: 92 percent

Dissimilar components: 8 percent

### **Components of Minor Extent**

#### *Dissimilar components:*

- The well drained, loamy Orthents on summits and backslopes

### ***Interpretive Groups***

*Land capability classification:* None assigned

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not applicable

## **865—Pits, gravel**

This map unit is in nearly level and 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.

### ***Map Unit Composition***

Pits, gravel: 92 percent

Dissimilar components: 8 percent

### ***Components of Minor Extent***

*Dissimilar components:*

- The well drained, loamy Orthents on summits and backslopes
- The poorly drained Dunham soils on toeslopes

### ***Interpretive Groups***

*Land capability classification:* None assigned

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not applicable

## ***Plano Series***

*Drainage class:* Well drained

*Landform:* Stream terraces and outwash plains

*Parent material:* Loess over outwash

*Slope range:* 0 to 10 percent

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Typic Argiudolls

*Taxadjunct features:* The Plano soil in map unit 199C2 has a thinner dark surface soil than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

### ***Typical Pedon***

Plano silt loam, 0 to 2 percent slopes; at an elevation of 715 feet; 1,200 feet south and 1,920 feet east of the northwest corner of sec. 13, T. 12 N., R. 7 E.; Stark County, Illinois; USGS Castleton topographic quadrangle; lat. 41 degrees 01 minute 45 seconds N. and long. 89 degrees 39 minutes 00 seconds W., NAD 27; UTM Zone 16, Easting 0277210, Northing 4545382, NAD 83:

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

A—9 to 14 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.

Bt1—14 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct dark

- brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.
- Bt2—19 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
- Bt3—31 to 43 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; common distinct very pale brown (10YR 7/3) (dry) silt coatings on faces of peds; few fine faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.
- Bt4—43 to 49 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium prismatic structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct very pale brown (10YR 7/3) (dry) silt coatings on faces of peds; slightly acid; clear smooth boundary.
- 2Bt5—49 to 53 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure; friable; few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.
- 2BC—53 to 60 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; many distinct dark yellowish brown (10YR 3/4) clay bridges between sand grains; about 5 percent gravel; neutral; gradual smooth boundary.
- 2C—60 to 72 inches; stratified yellowish brown (10YR 5/6) and brown (7.5YR 4/4) sandy loam, loam, and loamy sand; massive; friable; about 12 percent gravel; neutral.

### Range in Characteristics

*Thickness of the mollic epipedon or dark surface layer:* 7 to 20 inches

*Thickness of the loess:* 40 to 60 inches

*Depth to the base of soil development:* 44 to 70 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—silt loam or silty clay loam

*2Bt or 2BC horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture—loam, sandy loam, or clay loam

*2C horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture—stratified loam, loamy sand, sandy loam, or silt loam

## 199A—Plano silt loam, 0 to 2 percent slopes

### *Setting*

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits

### *Map Unit Composition*

Plano and similar soils: 94 percent

Dissimilar soils: 6 percent

### *Components of Minor Extent*

#### *Similar soils:*

- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have no subsurface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

#### *Dissimilar soils:*

- The poorly drained Drummer and Sable soils on toeslopes
- The somewhat poorly drained Elburn soils on summits and footslopes

### *Properties and Qualities of the Plano Soil*

*Parent material:* Loess over outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### *Interpretive Groups*

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## 199B—Plano silt loam, 2 to 5 percent slopes

### *Setting*

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Summits and shoulders

### *Map Unit Composition*

Plano and similar soils: 91 percent

Dissimilar soils: 9 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have no subsurface layer
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

#### *Dissimilar soils:*

- The poorly drained Drummer and Sable soils on toeslopes
- The somewhat poorly drained Elburn soils on summits and footslopes

### **Properties and Qualities of the Plano Soil**

*Parent material:* Loess over outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **199C2—Plano silt loam, 5 to 10 percent slopes, eroded**

### **Setting**

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Shoulders and backslopes

### **Map Unit Composition**

Plano and similar soils: 91 percent

Dissimilar soils: 9 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have till in the lower part of the profile

#### *Dissimilar soils:*

- The somewhat poorly drained Atterberry and Muscatune soils on summits
- The poorly drained Drummer and Sable soils on toeslopes
- The somewhat poorly drained Elburn and Kendall soils on summits and footslopes

### ***Properties and Qualities of the Plano Soil***

*Parent material:* Loess over outwash  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderately rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 10.8 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 4.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

### ***Proctor Series***

*Drainage class:* Well drained  
*Landform:* Stream terraces and outwash plains  
*Parent material:* Loess or other silty material and the underlying outwash  
*Slope range:* 0 to 5 percent  
*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Typic Argiudolls

### ***Typical Pedon***

Proctor silt loam, 0 to 2 percent slopes; 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.; De Kalb County, Illinois; USGS Marengo South topographic quadrangle; lat. 42 degrees 07 minutes 32 seconds N. and long. 88 degrees 36 minutes 08 seconds W., NAD 27; UTM Zone 16, Easting 0367565, Northing 4664960, NAD 83:

- 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 the loess or other silty material:* 20 to 40 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 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, or 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—stratified loam, sandy loam, or loamy sand

Content of gravel—1 to 15 percent

## 148A—Proctor silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits

### **Map Unit Composition**

Proctor and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a thinner surface layer
- Soils that have outwash beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have sandy and gravelly deposits in the lower part of the profile

#### *Dissimilar soils:*

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

### **Properties and Qualities of the Proctor Soil**

*Parent material:* Loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

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

### **Setting**

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits and backslopes

### **Map Unit Composition**

Proctor and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a thinner surface layer
- Soils that have outwash beginning at a depth of less than 20 inches or more than 40 inches

- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have sandy and gravelly deposits in the lower part of the profile

*Dissimilar soils:*

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

***Properties and Qualities of the Proctor Soil***

*Parent material:* Loess or other silty material and the underlying outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

**3800A—Psamments, 0 to 2 percent slopes, frequently flooded**

***Setting***

*Landform:* Flood plains

***Map Unit Composition***

Psamments and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent***

*Similar soils:*

- Soils that have less sand and more silt and clay in the profile
- Soils that have a seasonal high water table at a depth of less than 4 feet

*Dissimilar soils:*

- The poorly drained Comfrey soils on flood plains

***Properties and Qualities of the Psamments***

*Parent material:* Outwash and sandy alluvium

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Rapid

*Permeability below a depth of 60 inches:* Rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 4.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 0.0 to 0.5 percent

*Shrink-swell potential:* Low

*Apparent seasonal high water table (depth, months):* 4.0 to 6.0 feet, February through April

*Ponding:* None

*Flooding (frequency, months):* Frequent, November through June

*Potential for frost action:* Low

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Very high

### **Interpretive Groups**

*Land capability classification:* 4s

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **Ringwood Series**

*Drainage class:* Well drained

*Landform:* Ground moraines and end moraines

*Parent material:* Loess or other silty material and the underlying till

*Slope range:* 2 to 12 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Argiudolls

*Taxadjunct features:* The Ringwood soils in map units 297C2 and 297D2 have a thinner dark surface soil than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-loamy, mixed, superactive, mesic Mollic Hapludalfs.

### **Typical Pedon**

Ringwood silt loam, 2 to 4 percent slopes; 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.; McHenry County, Illinois; USGS Richmond topographic quadrangle; lat. 42 degrees 24 minutes 54 seconds N. and long. 88 degrees 16 minutes 33 seconds W., NAD 27; UTM Zone 16, Easting 0395028, Northing 4696654, NAD 83:

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 or dark surface layer:* 7 to 18 inches

*Thickness of the loess or other silty material:* 15 to 30 inches

*Depth to carbonates:* 27 to 50 inches

*Depth to the base of soil development:* 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

*2BC horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—sandy loam, fine sandy loam, or loam or the gravelly analogs of these textures

Content of gravel—3 to 20 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

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

### *Setting*

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and summits

### *Map Unit Composition*

Ringwood and similar soils: 90 percent

Dissimilar soils: 10 percent

### *Components of Minor Extent*

#### *Similar soils:*

- Soils that have no subsurface layer
- Soils that have till beginning at a depth of less than 15 inches or more than 30 inches
- Soils that have more clay in the lower part of the profile
- Soils that have carbonates beginning at a depth of less than 27 inches or more than 50 inches

#### *Dissimilar soils:*

- The somewhat poorly drained Elburn soils on summits and footslopes

### *Properties and Qualities of the Ringwood Soil*

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### *Interpretive Groups*

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## 297C2—Ringwood silt loam, 4 to 6 percent slopes, eroded

### *Setting*

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and shoulders

### *Map Unit Composition*

Ringwood and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have till beginning at a depth of less than 15 inches or more than 30 inches
- Soils that have more clay in the lower part of the profile
- Soils that have carbonates beginning at a depth of less than 27 inches or more than 50 inches
- Soils that have slopes of more than 6 percent

*Dissimilar soils:*

- The somewhat poorly drained Elburn soils on summits and footslopes
- The well drained Rockton and Dodgeville soils, which are moderately deep to bedrock; on backslopes and shoulders

### ***Properties and Qualities of the Ringwood Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **297D2—Ringwood silt loam, 6 to 12 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Ringwood and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have till beginning at a depth of less than 15 inches or more than 30 inches
- Soils that have more clay in the lower part of the profile

- Soils that have carbonates beginning at a depth of less than 27 inches or more than 50 inches
- Soils that have slopes of less than 6 percent

*Dissimilar soils:*

- The somewhat poorly drained Elburn soils on summits and footslopes
- The well drained Rockton and Dodgeville soils, which are moderately deep to bedrock; on backslopes and shoulders

***Properties and Qualities of the Ringwood Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 8.9 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

***Rockton Series***

*Drainage class:* Well drained

*Landform:* Ground moraines, outwash plains, and hillslopes

*Parent material:* Loamy drift over clayey residuum derived from limestone and dolomite

*Slope range:* 2 to 15 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Argiudolls

***Typical Pedon***

Rockton silt loam, 2 to 6 percent slopes; at an elevation of about 797 feet; 1,635 feet south and 195 feet east of the northwest corner of sec. 31, T. 44 N., R. 5 E.; McHenry County, Illinois; USGS Garden Prairie topographic quadrangle; lat. 42 degrees 17 minutes 03 seconds N. and long. 88 degrees 42 minutes 15 seconds W., NAD 27; UTM Zone 16, Easting 0359370, Northing 4679938, NAD 83:

Ap—0 to 8 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; neutral; clear smooth boundary.

A—8 to 11 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine and medium subangular blocky structure parting to moderate fine granular; friable; common very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; neutral; abrupt smooth boundary.

- BA—11 to 14 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; 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—14 to 18 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; 1 percent gravel; neutral; abrupt smooth boundary.
- Bt2—18 to 24 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; 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; neutral; clear smooth boundary.
- Bt3—24 to 31 inches; dark yellowish brown (10YR 4/4) sandy clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; 5 percent gravel; neutral; abrupt smooth boundary.
- 2BC—31 to 35 inches; 60 percent yellowish brown (10YR 5/6) and 40 percent brownish yellow (10YR 6/6) clay loam; weak medium subangular blocky structure; firm; common very fine roots; 10 percent gravel; strongly effervescent; slightly alkaline; abrupt smooth boundary.
- 2R—35 inches; limestone bedrock.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 18 inches

*Depth to lithic contact:* 20 to 40 inches

*Depth to the base of soil development:* 20 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, or sandy clay loam

*2BC horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—clay loam, silty clay, or clay

## 503B—Rockton silt loam, 2 to 6 percent slopes

### Setting

*Landform:* Ground moraines and outwash plains

*Position on the landform:* Backslopes and summits

### **Map Unit Composition**

Rockton and similar soils: 95 percent

Dissimilar soils: 5 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that are moderately eroded
- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 2 percent or more than 6 percent
- Soils that are shallow or deep to bedrock

#### *Dissimilar soils:*

- Well drained soils that are very deep to bedrock; on summits and backslopes

### **Properties and Qualities of the Rockton Soil**

*Parent material:* Loamy drift over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 6.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **566B—Rockton and Dodgeville soils, 2 to 5 percent slopes**

### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Shoulders and summits

### **Map Unit Composition**

Rockton and similar soils: 46 percent

Dodgeville and similar soils: 44 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that are moderately eroded
- Soils that have less sand and more silt in the upper one-half of the subsoil

- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that are shallow or deep to bedrock

*Dissimilar soils:*

- The well drained Argyle and Winnebago soils, which are very deep to bedrock; on summits and shoulders

***Properties and Qualities of the Rockton Soil***

*Parent material:* Loamy drift over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 4.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

***Properties and Qualities of the Dodgeville Soil***

*Parent material:* Thin layer of loess over clayey residuum derived from dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 5.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Rockton—not hydric; Dodgeville—not hydric

**566C2—Rockton and Dodgeville soils, 5 to 10 percent slopes, eroded**

***Setting***

*Landform:* Hillslopes

*Position on the landform:* Backslopes and shoulders

### **Map Unit Composition**

Rockton and similar soils: 46 percent  
 Dodgeville and similar soils: 44 percent  
 Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that are shallow or deep to bedrock

#### *Dissimilar soils:*

- The well drained Argyle and Winnebago soils, which are very deep to bedrock; on shoulders

### **Properties and Qualities of the Rockton Soil**

*Parent material:* Loamy drift over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 4.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Properties and Qualities of the Dodgeville Soil**

*Parent material:* Thin layer of loess over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 5.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Rockton—not hydric; Dodgeville—not hydric

## **566D2—Rockton and Dodgeville soils, 10 to 15 percent slopes, eroded**

### ***Setting***

*Landform:* Hillslopes

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Rockton and similar soils: 46 percent

Dodgeville and similar soils: 44 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that are shallow or deep to bedrock
- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 10 percent or more than 15 percent

*Dissimilar soils:*

- The well drained Winnebago soils, which are very deep to bedrock; on shoulders and backslopes

### ***Properties and Qualities of the Rockton Soil***

*Parent material:* Loamy drift over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 4.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### ***Properties and Qualities of the Dodgeville Soil***

*Parent material:* Thin layer of loess over clayey residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 3.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* High

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 4e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Rockton—not hydric; Dodgeville—not hydric

## **Rodman Series**

*Drainage class:* Excessively drained

*Landform:* Kames, stream terraces, and outwash plains

*Parent material:* Sandy and gravelly glaciofluvial deposits

*Slope range:* 4 to 20 percent

*Taxonomic classification:* Sandy-skeletal, mixed, mesic Typic Hapludolls

### **Typical Pedon**

Rodman gravelly loam, in an area of Rodman-Warsaw complex, 6 to 12 percent slopes, eroded; at an elevation of 815 feet; 1,420 feet north and 840 feet west of the center of sec. 32, T. 43 N., R. 3 E.; Boone County, Illinois; USGS Cherry Valley topographic quadrangle; lat. 42 degrees 09 minutes 50 seconds N. and long. 88 degrees 54 minutes 48 seconds W., NAD 27; UTM Zone 16, Easting 0341937, Northing 4669740, NAD 83:

A—0 to 7 inches; very dark brown (10YR 2/2) gravelly loam, brown (10YR 4/3) dry; moderate medium granular structure; friable; many fine roots; neutral; clear wavy boundary.

Bw—7 to 13 inches; brown (10YR 4/3) gravelly loam; moderate very fine subangular blocky structure parting to moderate very fine granular; friable; many fine roots; neutral; clear wavy boundary.

C—13 to 60 inches; dark yellowish brown (10YR 4/4) gravel and sand; single grain; loose; slightly effervescent; slightly alkaline.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 6 to 15 inches

*Depth to carbonates:* 10 to 20 inches

*Depth to the base of soil development:* 10 to 20 inches

*Ap or A horizon:*

Hue—7.5YR or 10YR

Value—2 to 3

Chroma—1 or 2

Texture—gravelly loam

Content of gravel—15 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—13 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; stratified in some pedons

Content of gravel—35 to 70 percent

**939C2—Rodman-Warsaw complex, 4 to 6 percent slopes, eroded*****Setting****Landform:* Kames, stream terraces, and outwash plains*Position on the landform:* Backslopes and shoulders***Map Unit Composition***

Rodman and similar soils: 50 percent

Warsaw and similar soils: 40 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have calcareous sand and gravel at the surface
- Soils that have more sand and less silt in the surface layer
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Kane soils on footslopes

***Properties and Qualities of the Rodman Soil****Parent material:* Sandy and gravelly glaciofluvial deposits*Drainage class:* Excessively drained*Slowest permeability within a depth of 40 inches:* Moderately rapid*Permeability below a depth of 60 inches:* Very rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 2.9 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 2.0 to 3.0 percent*Shrink-swell potential:* Low*Ponding:* None*Flooding:* None*Accelerated erosion:* The surface layer has been thinned by erosion.*Potential for frost action:* Low*Hazard of corrosion:* Low for steel and concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Moderate*Susceptibility to wind erosion:* Negligible

### ***Properties and Qualities of the Warsaw Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* Rodman—4s; Warsaw—2e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Rodman—not hydric; Warsaw—not hydric

## **939D2—Rodman-Warsaw complex, 6 to 12 percent slopes, eroded**

### ***Setting***

*Landform:* Stream terraces, outwash plains, and kames

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Rodman and similar soils: 55 percent

Warsaw and similar soils: 30 percent

Dissimilar soils: 15 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have calcareous sand and gravel at the surface
- Soils that have more sand and less silt in the surface layer
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Kane soils on footslopes

### ***Properties and Qualities of the Rodman Soil***

*Parent material:* Sandy and gravelly glaciofluvial deposits

*Drainage class:* Excessively drained

*Slowest permeability within a depth of 40 inches:* Moderately rapid

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 2.8 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 3.0 percent

*Shrink-swell potential:* Low

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Low

*Hazard of corrosion:* Low for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Negligible

### ***Properties and Qualities of the Warsaw Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* Rodman—4s; Warsaw—3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Rodman—not hydric; Warsaw—not hydric

## **969E2—Casco-Rodman complex, 12 to 20 percent slopes, eroded**

### ***Setting***

*Landform:* Kames, outwash plains, and end moraines

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Casco and similar soils: 50 percent

Rodman and similar soils: 40 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have sandy and gravelly deposits beginning at a depth of more than 20 inches
- Soils that have carbonates at or near the surface
- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that have till in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Kane soils on footslopes

***Properties and Qualities of the Casco Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Drainage class:* Somewhat excessively drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 4.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and low for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

***Properties and Qualities of the Rodman Soil***

*Parent material:* Sandy and gravelly glaciofluvial deposits

*Drainage class:* Excessively drained

*Slowest permeability within a depth of 40 inches:* Moderately rapid

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 2.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 3.0 percent

*Shrink-swell potential:* Low

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Low

*Hazard of corrosion:* Low for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Negligible

***Interpretive Groups***

*Land capability classification:* Casco—6e; Rodman—6s

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Casco—not hydric; Rodman—not hydric

***Rozetta Series***

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Loess

*Slope range:* 0 to 2 percent

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

### Typical Pedon

Rozetta silt loam, 0 to 2 percent slopes; at an elevation of 890 feet; 150 feet south and 500 feet east of the center of sec. 18, T. 27 N., R. 6 E.; Stephenson County, Illinois; USGS Pearl City topographic quadrangle; lat. 42 degrees 20 minutes 00 seconds N. and long. 89 degrees 51 minutes 19 seconds W., NAD 27; UTM Zone 16, Easting 0264762, Northing 4690736, NAD 83:

- A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 6/1) dry; weak medium granular structure; friable; many fine roots; moderately acid; clear wavy boundary.
- E—4 to 11 inches; dark grayish brown (10YR 4/2) silt loam; weak medium platy structure; friable; many fine roots; strongly acid; clear smooth boundary.
- BE—11 to 14 inches; brown (10YR 4/3) silty clay loam; weak medium subangular blocky structure; firm; many fine roots; few faint brown (10YR 5/3) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
- Bt1—14 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; many fine roots; many faint brown (10YR 5/3) clay films on faces of peds; strongly acid; clear smooth boundary.
- Bt2—21 to 39 inches; brown (10YR 5/3) silty clay loam; moderate medium and coarse subangular blocky structure; firm; common fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common faint pale brown (10YR 6/3) (dry) silt coatings on faces of peds; few medium faint grayish brown (10YR 5/2) iron depletions in the matrix; common medium faint light yellowish brown (10YR 6/4) and brown (10YR 4/3) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.
- Bt3—39 to 50 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse subangular blocky structure; firm; common fine roots; few faint brown (10YR 4/3) clay films on faces of peds; common medium faint pale brown (10YR 6/3) and common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.
- C—50 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common medium distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly acid.

### Range in Characteristics

*Depth to carbonates:* More than 60 inches

*Depth to the base of soil development:* 42 to 72 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

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—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6  
Texture—silty clay loam

*C horizon:*

Hue—10YR  
Value—4 to 6  
Chroma—2 to 6  
Texture—silt loam or silty clay loam

## **279A—Rozetta silt loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Ground moraines  
*Position on the landform:* Summits

### ***Map Unit Composition***

Rozetta and similar soils: 98 percent  
Dissimilar soils: 2 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a darker surface layer
- Soils that have a seasonal high water table beginning at a depth of less than 4 feet or more than 6 feet
- Soils that have till or outwash in the lower part of the profile
- Soils that have carbonates at a depth of less than 60 inches

*Dissimilar soils:*

- The somewhat poorly drained Atterberry and Stronghurst soils on summits

### ***Properties and Qualities of the Rozetta Soil***

*Parent material:* Loess

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 12.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 4.0 to 6.0 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and high for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## ***Rush Series***

*Drainage class:* Well drained

*Landform:* Stream terraces and outwash plains

*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 Hapludalfs

### **Typical Pedon**

Rush silt loam, 0 to 2 percent slopes; 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.; Kane County, Illinois; USGS Aurora North topographic quadrangle; lat. 41 degrees 52 minutes 08 seconds N. and long. 88 degrees 18 minutes 13 seconds W., NAD 27; UTM Zone 16, Easting 0391822, Northing 4636036, NAD 83:

- 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; few distinct dark brown (10YR 3/3) clay films on faces of peds; 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 the loess or other silty material:* 24 to 40 inches

*Depth to sandy and gravelly deposits:* 40 to 60 inches

*Depth to carbonates:* 40 to 60 inches

*Depth to the base of soil development:* 40 to 70 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 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, or 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; stratified with these textures in some pedons  
 Content of gravel—15 to 70 percent

**791A—Rush silt loam, 0 to 2 percent slopes*****Setting***

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits

***Map Unit Composition***

Rush and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have a thicker and darker surface layer
- Soils that have sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches
- Soils that contain more sand and less silt in the upper and middle parts of the subsoil

*Dissimilar soils:*

- The poorly drained Drummer and Dunham soils on toeslopes

***Properties and Qualities of the Rush Soil***

*Parent material:* Loess or other silty material and the underlying loamy and gravelly outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 9.2 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and high for concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

### **Sable Series**

*Drainage class:* Poorly drained  
*Landform:* Ground moraines and stream terraces  
*Parent material:* Loess or other silty material  
*Slope range:* 0 to 2 percent  
*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Typic Endoaquolls

### **Typical Pedon**

Sable silty clay loam, 0 to 2 percent slopes; at an elevation of 732 feet; 1,281 feet south and 97 feet west of the northeast corner of sec. 14, T. 9 N., R. 3 W.; Warren County, Illinois; USGS Kirkwood East topographic quadrangle; lat. 40 degrees 46 minutes 22 seconds N. and long. 90 degrees 41 minutes 34 seconds W., NAD 27; UTM Zone 15, Easting 0694709, Northing 4516111, NAD 83:

- Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; firm; moderately acid; abrupt smooth boundary.
- A—8 to 19 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine angular blocky structure; firm; few fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron and manganese oxide concretions throughout; slightly acid; clear smooth boundary.
- AB—19 to 23 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine angular blocky structure; firm; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron and manganese oxide concretions throughout; slightly acid; clear smooth boundary.
- Bg—23 to 29 inches; dark gray (10YR 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; common fine and medium rounded dark reddish brown (5YR 3/2) very weakly cemented iron and manganese oxide concretions throughout; common medium distinct brown (10YR 5/3) masses of iron accumulation in the matrix; few medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.
- Btg1—29 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; many fine and medium rounded dark reddish brown (5YR

3/2) very 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.

Btg2—38 to 47 inches; gray (N 5/) silt loam; weak medium prismatic structure parting to weak medium and coarse angular blocky; firm; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; gradual smooth boundary.

Cg—47 to 60 inches; gray (N 6/) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 12 to 24 inches

*Thickness of the loess or other silty material:* More than 60 inches

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* 40 to 60 inches

*Ap, A, or AB horizon:*

Hue—10YR, 2.5Y, or N

Value—2 to 3

Chroma—0 or 1

Texture—silty clay loam or silt loam

*Bg or Btg horizon:*

Hue—10YR, 2.5Y, 5Y, or N

Value—3 to 6

Chroma—0 to 2

Texture—silty clay loam or silt loam

*Cg horizon:*

Hue—10YR, 2.5Y, 5Y, or N

Value—4 to 6

Chroma—0 to 2

Texture—silt loam or silty clay loam

## 68A—Sable silty clay loam, 0 to 2 percent slopes

### Setting

*Landform:* Ground moraines

*Position on the landform:* Toeslopes

### Map Unit Composition

Sable and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have carbonates at a depth of less than 40 inches
- Soils that have a dark surface soil more than 24 inches thick
- Soils that contain outwash or till in the lower part of the profile
- Soils that are overlain by recent, light-colored deposition

*Dissimilar soils:*

- The somewhat poorly drained Elburn and Virgil soils on footslopes and summits
- The somewhat poorly drained Atterberry and Muscatune soils on summits

***Properties and Qualities of the Sable Soil****Parent material:* Loess*Drainage class:* Poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 12.2 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 5.0 to 6.0 percent*Shrink-swell potential:* Moderate*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and moderate for concrete*Surface runoff class:* Negligible*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 2w*Prime farmland category:* Prime farmland where drained*Hydric soil status:* Hydric**68A+—Sable silt loam, 0 to 2 percent slopes, overwash*****Setting****Landform:* Ground moraines*Position on the landform:* Toeslopes***Map Unit Composition***

Sable and similar soils: 94 percent

Dissimilar soils: 6 percent

***Components of Minor Extent****Similar soils:*

- Soils that contain outwash or till in the lower part of the profile
- Soils that have no overwash or have more than 20 inches of overwash
- Soils that have a dark surface soil more than 24 inches thick

*Dissimilar soils:*

- The somewhat poorly drained Elburn and Virgil soils on footslopes and summits
- The somewhat poorly drained Atterberry and Muscatune soils on summits

***Properties and Qualities of the Sable Soil****Parent material:* Loess*Drainage class:* Poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 12.1 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 4.0 percent  
*Shrink-swell potential:* Moderate  
*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May  
*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* High for steel and moderate for concrete  
*Surface runoff class:* Negligible  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

## **9068A—Sable silty clay loam, terrace, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Stream terraces  
*Position on the landform:* Toeslopes

### ***Map Unit Composition***

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

### ***Components of Minor Extent***

#### ***Similar soils:***

- Soils that contain outwash or till in the lower part of the profile
- Soils that have a dark surface soil more than 24 inches thick
- Soils that have carbonates at a depth of less than 40 inches
- Soils that are overlain by recent, light-colored deposition

#### ***Dissimilar soils:***

- The somewhat poorly drained Atterberry and Muscatune soils on footslopes and summits

### ***Properties and Qualities of the Sable Soil***

*Parent material:* Loess or other silty material  
*Drainage class:* Poorly drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 12.2 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 5.0 to 6.0 percent  
*Shrink-swell potential:* Moderate  
*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Hydric

## **Sawmill Series**

*Drainage class:* Poorly drained

*Landform:* Flood plains

*Parent material:* Silty alluvium

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

### **Typical Pedon**

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 535 feet; 300 feet south and 750 feet east of the northwest corner of sec. 20, T. 15 N., R. 4 W.; Sangamon County, Illinois; USGS New City topographic quadrangle; lat. 39 degrees 44 minutes 34 seconds N. and long. 89 degrees 34 minutes 15 seconds W., NAD 27; UTM Zone 16, Easting 0279712, Northing 4402375, NAD 83:

- Ap—0 to 10 inches; very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 millimeters in diameter; slightly acid; clear smooth boundary.
- A1—10 to 17 inches; black (10YR 2/1) and very dark grayish brown (10YR 3/2) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 millimeters in diameter; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.
- A2—17 to 25 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium angular blocky structure; firm; few fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.
- AB—25 to 32 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.
- Bg—32 to 40 inches; dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; common faint

very dark gray (10YR 3/1) organic coatings on faces of peds; few fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Btg1—40 to 49 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) and common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Btg2—49 to 58 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure; firm; common distinct gray (10YR 5/1) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Cg—58 to 65 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; very dark gray (10YR 3/1) channel linings and fillings; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation lining pores; slightly alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 24 to 36 inches

*Depth to the base of soil development:* 36 to 60 inches

*Ap, A, or AB horizon:*

Hue—10YR, 2.5Y, 5Y, or N

Value—2 to 3

Chroma—0 to 2

Texture—silty clay loam

*Bg or Btg horizon:*

Hue—10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—silty clay loam

*Cg horizon:*

Hue—10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—silty clay loam or clay loam

## 3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded

### Setting

*Landform:* Flood plains

### Map Unit Composition

Sawmill and similar soils: 92 percent

Dissimilar soils: 8 percent

### **Components of Minor Extent**

*Similar soils:*

- Soils that have a thinner surface soil
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that are overlain by recent, light-colored deposition

*Dissimilar soils:*

- The somewhat poorly drained Orion soils on flood plains
- Soils that are not drained

### **Properties and Qualities of the Sawmill Soil**

*Parent material:* Silty alluvium

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.5 to 7.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding (frequency, months):* Frequent, November through June

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and low for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 3w

*Prime farmland category:* Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season

*Hydric soil status:* Hydric

## **Selma Series**

*Drainage class:* Poorly drained

*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**

Selma loam, 0 to 2 percent slopes; at an elevation of 656 feet; 52 feet south and 160 feet west of the northeast corner of sec. 18, T. 28 N., R. 10 E.; Iroquois County, Illinois; USGS Piper City topographic quadrangle; lat. 40 degrees 54 minutes 36 seconds N. and long. 88 degrees 06 minutes 44 seconds W., NAD 27; UTM Zone 16, Easting 0406337, Northing 4529366, NAD 83:

Ap—0 to 6 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine and fine roots; neutral; gradual smooth boundary.

- A—6 to 13 inches; black (10YR 2/1) clay loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; friable; common fine roots; neutral; gradual wavy boundary.
- Btg1—13 to 19 inches; dark grayish brown (2.5Y 4/2) clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; many prominent very dark gray (2.5Y 3/1) organo-clay films on faces of peds and in pores; few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.
- Btg2—19 to 28 inches; grayish brown (2.5Y 5/2) loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; many prominent dark gray (2.5Y 4/1) clay films on faces of peds; few fine distinct light olive brown (2.5Y 5/4) iron and manganese oxide nodules throughout; common medium distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; slightly alkaline; gradual wavy boundary.
- Btg3—28 to 39 inches; grayish brown (2.5Y 5/2) loam; weak fine and medium subangular blocky structure; friable; common fine roots; few distinct dark gray (2.5Y 4/1) clay films on faces of peds; a black (N 2.5/) krotovina at a depth of 30 to 39 inches; few fine prominent dark yellowish brown (10YR 4/6) iron and manganese oxide nodules throughout; few fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation in the matrix; slightly alkaline; gradual wavy boundary.
- BCtg—39 to 44 inches; grayish brown (2.5Y 5/2) loam; weak medium subangular blocky structure; friable; few very fine roots; few faint dark gray (2.5Y 4/1) clay films on faces of peds; few fine prominent dark yellowish brown (10YR 4/6) iron and manganese oxide nodules throughout; few fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation in the matrix; strongly effervescent; slightly alkaline; gradual wavy boundary.
- Cg1—44 to 54 inches; 55 percent dark gray (2.5Y 4/1), 35 percent gray (2.5Y 5/1), and 10 percent light yellowish brown (2.5Y 6/4), stratified sandy loam and loamy sand; massive in the sandy loam and single grain in the loamy sand; friable in the sandy loam and loose in the loamy sand; few very fine roots; very strongly effervescent; moderately alkaline; gradual wavy boundary.
- Cg2—54 to 80 inches; 45 percent dark gray (2.5Y 4/1), 45 percent gray (2.5Y 5/1), and 10 percent light olive brown (2.5Y 5/6), stratified silt loam, sandy loam, and loamy sand; massive in the silt loam and sandy loam and single grain in the loamy sand; friable; few very fine roots; strongly effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 10 to 24 inches

*Depth to carbonates:* More than 30 inches

*Depth to the base of soil development:* 35 to 55 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam or clay loam

*Bg, Btg, or BCg horizon:*

Hue—10YR, 2.5Y, 5Y, or N

Value—4 to 6

Chroma—0 to 2

Texture—loam, clay loam, silty clay loam, or sandy loam

Content of gravel—less than 10 percent

*Cg or C horizon:*

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 6

Texture—stratified sandy loam, loam, silt loam, loamy sand, or sand

Content of gravel—less than 15 percent

**125A—Selma loam, 0 to 2 percent slopes*****Setting****Landform:* Outwash plains and stream terraces*Position on the landform:* Toeslopes***Map Unit Composition***

Selma and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a thinner surface soil
- Soils that have more silt and less sand in the upper one-half of the profile
- Soils that have more sand and less clay and silt in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained La Hogue soils on footslopes and summits
- The very poorly drained Houghton soils on toeslopes

***Properties and Qualities of the Selma Soil****Parent material:* Outwash*Drainage class:* Poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderately rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 9.9 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 4.0 to 6.0 percent*Shrink-swell potential:* Moderate*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and low for concrete*Surface runoff class:* Negligible*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 2w*Prime farmland category:* Prime farmland where drained*Hydric soil status:* Hydric

## **Selmass Series**

*Drainage class:* Poorly drained

*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**

Selmass loam, 0 to 2 percent slopes; 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.; McHenry County, Illinois; USGS Marengo North topographic quadrangle; lat. 42 degrees 16 minutes 11 seconds N. and long. 88 degrees 30 minutes 31 seconds W., NAD 27; UTM Zone 16, Easting 0375581, Northing 4680828, NAD 83:

- Ap—0 to 4 inches; black (N 2.5/) 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/) 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 distinct 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; single grain; loose; 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

*Depth to the base of soil development:* 35 to 55 inches

*Ap or A horizon:*

Hue—10YR, 2.5Y, or N

Value—2 to 3

Chroma—0 to 2

Texture—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

*2BCg horizon:*

Hue—10YR, 2.5Y, or 5Y

Value—5 or 6

Chroma—1 or 2

Texture—loam, sandy loam, or loamy sand

*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

## 529A—Selmass loam, 0 to 2 percent slopes

### Setting

*Landform:* Outwash plains and stream terraces

*Position on the landform:* Toeslopes

### Map Unit Composition

Selmass and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a thinner surface soil
- Soils that have more silt and less sand in the upper one-half of the profile
- Soils that have more clay and silt and less sand in the lower part of the profile

*Dissimilar soils:*

- The very poorly drained Adrian and Houghton soils on toeslopes
- The somewhat poorly drained Lahoguess soils on summits and footslopes

### Properties and Qualities of the Selmass Soil

*Parent material:* Outwash

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 9.4 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 4.0 to 6.0 percent  
*Shrink-swell potential:* Moderate  
*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May  
*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* High for steel and moderate for concrete  
*Surface runoff class:* Negligible  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

## **Senachwine Series**

*Drainage class:* Well drained  
*Landform:* Ground moraines  
*Parent material:* Till  
*Slope range:* 2 to 5 percent  
*Taxonomic classification:* Fine-loamy, mixed, active, mesic Typic Hapludalfs

### **Typical Pedon**

Senachwine silt loam, 10 to 18 percent slopes, eroded; at an elevation of 856 feet; 1,040 feet west and 1,345 feet south of the northeast corner of sec. 21, T. 15 N., R. 8 E.; Bureau County, Illinois; USGS Wyandot topographic quadrangle; lat. 41 degrees 16 minutes 25 seconds N. and long. 89 degrees 34 minutes 18 seconds W., NAD 27; UTM Zone 16, Easting 0284601, Northing 4572336, NAD 83:

- Ap—0 to 6 inches; mixed brown (10YR 4/3) and yellowish brown (10YR 5/4) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common fine roots; neutral; abrupt smooth boundary.
- Bt1—6 to 15 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- 2Bt2—15 to 28 inches; brown (7.5YR 5/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; many faint brown (7.5YR 4/4) clay films on faces of peds; few fine rounded black (N 2.5/) weakly cemented iron and manganese oxide concretions throughout; neutral; clear smooth boundary.
- 2BCt—28 to 34 inches; brown (7.5YR 5/4) loam; weak coarse prismatic structure; firm; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; 5 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
- 2C—34 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; 5 percent gravel; strongly effervescent; moderately alkaline.

### Range in Characteristics

*Depth to carbonates:* 20 to 40 inches

*Depth to the base of soil development:* 24 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—1 to 4

Texture—silt loam

*Bt or 2Bt horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—silty clay loam or clay loam

*2C horizon:*

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—3 or 4

Texture—loam or fine sandy loam

## 618B—Senachwine silt loam, 2 to 5 percent slopes

### Setting

*Landform:* Ground moraines

*Position on the landform:* Shoulders and backslopes

### Map Unit Composition

Senachwine and similar soils: 85 percent

Dissimilar soils: 15 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have carbonates beginning at a depth of more than 40 inches
- Soils that are moderately eroded

*Dissimilar soils:*

- The poorly drained Drummer and Selma soils on toeslopes
- The somewhat poorly drained Herbert and Kendall soils on summits and footslopes

### Properties and Qualities of the Senachwine Soil

*Parent material:* Till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderately slow

*Permeability below a depth of 60 inches:* Moderately slow

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

## **St. Charles Series**

*Drainage class:* Well drained  
*Landform:* Stream terraces and outwash plains  
*Parent material:* Loess over outwash  
*Slope range:* 0 to 10 percent  
*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Typic Hapludalfs

### **Typical Pedon**

St. Charles silt loam, 2 to 5 percent slopes; at an elevation of 635 feet; 80 feet north and 2,170 feet west of the southeast corner of sec. 26, T. 16 N., R. 8 E.; Bureau County, Illinois; USGS Wyandot topographic quadrangle; lat. 41 degrees 20 minutes 09 seconds N. and long. 89 degrees 32 minutes 12 seconds W., NAD 27; UTM Zone 16, Easting 0287740, Northing 4579143, NAD 83:

- Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; few fine roots; moderately acid; abrupt smooth boundary.
- Bt1—8 to 15 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; many faint dark brown (10YR 3/3) organic coatings and dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt2—15 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt3—21 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine rounded dark iron and manganese oxide accumulations throughout; moderately acid; clear smooth boundary.
- Bt4—34 to 44 inches; yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; many faint dark yellowish brown (10YR 4/4) clay films and many distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct brown (7.5YR 4/4) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
- Bt5—44 to 50 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; many distinct dark yellowish brown (10YR 4/4) clay films and light gray (10YR 7/2) (dry) silt coatings on faces of peds; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
- 2Bt6—50 to 57 inches; yellowish brown (10YR 5/6), stratified loam, sandy loam, and silt loam; weak medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2C—57 to 60 inches; yellowish brown (10YR 5/4), stratified loam and silt loam; massive; friable; moderately acid.

### **Range in Characteristics**

*Thickness of the loess:* 40 to 60 inches

*Depth to carbonates:* More than 44 inches

*Depth to the base of soil development:* 44 to 70 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—1 to 3

Texture—silt loam

*E horizon (where present):*

Hue—10YR

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 or 2BC horizon:*

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 6

Texture—stratified loam, sandy loam, clay loam, or silt loam

*2C horizon:*

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 6

Texture—stratified loam, sandy loam, clay loam, or silt loam

## **243A—St. Charles silt loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits

### ***Map Unit Composition***

St. Charles and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have more gravel in the lower part of the profile
- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have a darker surface layer
- Soils that have a seasonal high water table within a depth of 6 feet

*Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes
- The somewhat poorly drained Kendall soils on summits and footslopes

***Properties and Qualities of the St. Charles Soil****Parent material:* Loess over outwash*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate or moderately rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 11.3 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 1.0 to 3.0 percent*Shrink-swell potential:* Moderate*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* Moderate for steel and high for concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 1*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric**243B—St. Charles silt loam, 2 to 5 percent slopes*****Setting****Landform:* Stream terraces and outwash plains*Position on the landform:* Summits and shoulders***Map Unit Composition***

St. Charles and similar soils: 95 percent

Dissimilar soils: 5 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have a darker surface layer
- Soils that are moderately eroded

*Dissimilar soils:*

- The poorly drained Sawmill soils on flood plains
- The poorly drained Drummer soils on toeslopes
- The somewhat poorly drained Kendall soils on summits and footslopes

***Properties and Qualities of the St. Charles Soil****Parent material:* Loess over outwash*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 11.2 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and high for concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

## **243C2—St. Charles silt loam, 5 to 10 percent slopes, eroded**

### ***Setting***

*Landform:* Stream terraces and outwash plains  
*Position on the landform:* Shoulders and backslopes

### ***Map Unit Composition***

St. Charles and similar soils: 90 percent  
 Dissimilar soils: 10 percent

### ***Components of Minor Extent***

#### ***Similar soils:***

- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have slopes of less than 5 percent

#### ***Dissimilar soils:***

- The poorly drained Comfrey soils on flood plains
- The somewhat poorly drained Kendall soils on summits and footslopes

### ***Properties and Qualities of the St. Charles Soil***

*Parent material:* Loess over outwash  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 10.7 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 2.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and high for concrete

*Surface runoff class:* Medium  
*Susceptibility to water erosion:* High  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

## **Stronghurst Series**

*Drainage class:* Somewhat poorly drained  
*Landform:* Ground moraines and stream terraces  
*Parent material:* Loess or other silty material  
*Slope range:* 0 to 6 percent  
*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

### **Typical Pedon**

Stronghurst silt loam, 0 to 2 percent slopes; at an elevation of about 721 feet; 1,440 feet north and 200 feet east of the southwest corner of sec. 26, T. 15 N., R. 4 W.; Mercer County, Illinois; USGS Buffalo Prairie quadrangle; lat. 41 degrees 15 minutes 45 seconds N. and long. 90 degrees 49 minutes 22 seconds W., NAD 27; UTM Zone 15, Easting 0682373, Northing 4570187, NAD 83:

- Ap—0 to 7 inches; dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; weak medium granular structure; friable; common roots; neutral; clear smooth boundary.
- E—7 to 11 inches; dark grayish brown (10YR 4/2) silt loam; weak fine subangular blocky structure; friable; common roots; few fine and medium dark reddish brown (5YR 3/2) iron and manganese oxide concretions in the matrix; slightly acid; clear smooth boundary.
- BE—11 to 15 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; firm; common roots; common faint light brownish gray (10YR 6/2) (dry) clay depletions on faces of peds; few fine dark reddish brown (5YR 3/2) iron and manganese oxide concretions in the matrix; strongly acid; clear smooth boundary.
- Bt1—15 to 22 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine dark reddish brown (5YR 3/2) iron and manganese oxide concretions in the matrix; few fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; strongly acid; gradual smooth boundary.
- Bt2—22 to 29 inches; brown (10YR 5/3) silty clay loam; moderate fine and medium subangular blocky structure; firm; few roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; many fine dark reddish brown (5YR 3/2) iron and manganese oxide concretions in the matrix; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; strongly acid; gradual smooth boundary.
- Bt3—29 to 35 inches; brown (10YR 5/3) silty clay loam; weak coarse subangular blocky structure; firm; few roots; common distinct dark gray (10YR 4/1) clay films on faces of peds and on surfaces along root channels; many fine dark reddish brown (5YR 3/2) iron and manganese oxide concretions in the matrix; many medium faint dark yellowish brown (10YR 4/4) and distinct yellowish brown (10YR

5/6) masses of iron accumulation in the matrix; strongly acid; gradual smooth boundary.

Bt4—35 to 47 inches; pale brown (10YR 6/3) silty clay loam; weak coarse subangular blocky structure; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds and on surfaces along root channels; many fine dark reddish brown (5YR 3/2) iron and manganese oxide concretions in the matrix; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; gradual wavy boundary.

C—47 to 60 inches; mixed pale brown (10YR 6/3) and yellowish brown (10YR 5/6) silt loam; massive; friable; many fine dark reddish brown (5YR 3/2) soft iron and manganese oxide concretions in the matrix; moderately acid.

### **Range in Characteristics**

*Depth to the base of soil development:* More than 42 inches

*Ap or A horizon:*

Hue—10YR

Value—3 to 5

Chroma—1 or 2

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 4

Texture—silty clay loam or silt loam

*C or Cg horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silt loam

## **278A—Stronghurst silt loam, 0 to 2 percent slopes**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Summits

### ***Map Unit Composition***

Stronghurst and similar soils: 97 percent

Dissimilar soils: 3 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a darker surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have outwash or till in the lower part of the profile

*Dissimilar soils:*

- The poorly drained Sable soils on toeslopes
- The well drained Fayette and Rozetta soils on summits

***Properties and Qualities of the Stronghurst Soil****Parent material:* Loess*Drainage class:* Somewhat poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 12.0 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 1.0 to 3.0 percent*Shrink-swell potential:* Moderate*Apparent seasonal high water table (depth, months):* 0.5 foot to 2.0 feet, January through May*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and moderate for concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 2w*Prime farmland category:* Prime farmland where drained*Hydric soil status:* Not hydric**9278A—Stronghurst silt loam, terrace, 0 to 2 percent slopes*****Setting****Landform:* Stream terraces*Position on the landform:* Summits and footslopes***Map Unit Composition***

Stronghurst and similar soils: 85 percent

Dissimilar soils: 15 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a darker surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have outwash or till in the lower part of the profile

*Dissimilar soils:*

- The well drained Fayette and Rozetta soils on summits
- Poorly drained soils on toeslopes

***Properties and Qualities of the Stronghurst Soil****Parent material:* Loess or other silty material*Drainage class:* Somewhat poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 12.0 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Apparent seasonal high water table (depth, months):* 0.5 foot to 2.0 feet, January through May  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* High for steel and moderate for concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Low  
*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

## **Thorp Series**

*Drainage class:* Poorly drained  
*Landform:* Outwash plains and ground moraines  
*Parent material:* Loess over stratified loamy outwash  
*Slope range:* 0 to 2 percent  
*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

### **Typical Pedon**

Thorp silt loam, 0 to 2 percent slopes; at an elevation of 640 feet; 1,190 feet north and 2,400 feet west of the southeast corner of sec. 27, T. 36 N., R. 5 E.; La Salle County, Illinois; USGS Sheridan topographic quadrangle; lat. 41 degrees 33 minutes 42 seconds N. and long. 88 degrees 38 minutes 49 seconds W., NAD 27; UTM Zone 16, Easting 0362665, Northing 4602414, NAD 83:

- Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate very fine granular structure; friable; neutral; abrupt smooth boundary.
- A—7 to 14 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.
- Eg—14 to 19 inches; dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; weak fine granular structure; friable; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
- Btg1—19 to 21 inches; dark gray (10YR 4/1) and dark grayish brown (2.5Y 4/2) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
- Btg2—21 to 33 inches; gray (5Y 5/1) and olive gray (5Y 4/2) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
- Btg3—33 to 43 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure parting to moderate fine angular and subangular blocky; firm; many distinct very dark gray (10YR 3/1) organo-clay films and dark gray (N 4/) 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

*Depth to the base of soil development:* 40 to 70 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

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, 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, or sandy loam with strata of loamy sand or sand

Content of gravel—less than 15 percent

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

### Setting

*Landform:* Outwash plains and ground moraines

*Position on the landform:* Toeslopes

### **Map Unit Composition**

Thorp and similar soils: 95 percent

Dissimilar soils: 5 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a thinner surface layer
- Soils that have outwash beginning at a depth of less than 30 inches or more than 54 inches
- Soils that have till in the lower part of the profile

#### *Dissimilar soils:*

- The somewhat poorly drained Elburn and Virgil soils on footslopes and summits

### **Properties and Qualities of the Thorp Soil**

*Parent material:* Loess over stratified loamy outwash

*Drainage class:* Poorly drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 9.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 4.0 to 6.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May

*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2w

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Hydric

## **Torox Series**

*Drainage class:* Somewhat poorly drained

*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 Aquic Hapludalfs

### **Typical Pedon**

Torox silt loam, 0 to 2 percent slopes; at an elevation of 850 feet; 2,640 feet south and 2,592 feet west of the northeast corner of sec. 6, T. 44 N., R. 5 E.; McHenry County, Illinois; USGS Garden Prairie topographic quadrangle; lat. 42 degrees 19 minutes 14 seconds N. and long. 88 degrees 41 minutes 45 seconds W., NAD 27; UTM Zone 16, Easting 0360255, Northing 4686767, NAD 83:

- Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium subangular blocky structure parting to weak medium granular; friable; common very fine roots; few prominent light gray (10YR 7/2) (dry) clay depletions on faces of peds and in pores; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; neutral; abrupt smooth boundary.
- Bt1—10 to 13 inches; brown (10YR 4/3) silty clay loam; weak fine and medium subangular blocky structure; firm; common very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; strongly acid; abrupt smooth boundary.
- Bt2—13 to 18 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; firm; common very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; moderately acid; clear smooth boundary.
- Bt3—18 to 25 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 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; moderately acid; clear wavy boundary.
- 2Bt4—25 to 28 inches; brown (10YR 5/3) clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; common fine black (10YR 2/1) 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 fine and medium faint grayish brown (10YR 5/2) iron depletions in the matrix; 2 percent gravel; slightly acid; clear wavy boundary.
- 2Bt5—28 to 42 inches; strong brown (7.5YR 4/6) clay loam; weak medium and coarse subangular blocky structure; firm; few very fine roots; few distinct brown (7.5YR 4/2) clay films on faces of peds and in pores; few distinct dark brown (7.5YR 3/2) organo-clay films in root channels and in pores; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium and coarse faint strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium prominent brown (7.5YR 5/2) iron depletions in the matrix; 3 percent gravel; neutral; clear wavy boundary.
- 2C1—42 to 51 inches; brown (7.5YR 5/3) loam; massive; firm; few distinct dark brown (7.5YR 3/2) organo-clay films lining root channels and pores; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium and coarse distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium faint pinkish gray (7.5YR 6/2) iron depletions in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.
- 2C2—51 to 65 inches; brown (7.5YR 5/3) loam; massive; firm; very few distinct dark brown (7.5YR 3/2) organo-clay films lining root channels and pores; common medium and coarse distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium faint pinkish gray (7.5YR 6/2) iron depletions in the matrix; 5 percent gravel; strongly effervescent; moderately alkaline.

### Range in Characteristics

*Thickness of the loess or other silty material:* 22 to 40 inches

*Depth to carbonates:* 36 to 60 inches

*Depth to the base of soil development:* 36 to 60 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt loam

*Bt horizon:*

Hue—10YR

Value—4 to 6

Chroma—2 to 4

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, loam, or sandy clay loam

Content of gravel—1 to 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

## 544A—Torox silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Ground moraines and end moraines

*Position on the landform:* Foothills and summits

### Map Unit Composition

Torox and similar soils: 90 percent

Dissimilar soils: 10 percent

### Components of Minor Extent

*Similar soils:*

- Soils that have a darker surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have carbonates at a depth of less than 36 inches
- Soils that have till beginning at a depth of less than 22 inches or more than 40 inches

*Dissimilar soils:*

- The poorly drained Pella soils on toeslopes

### Properties and Qualities of the Torox Soil

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.0 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 1.0 to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

### **Troxel Series**

*Drainage class:* Well drained

*Landform:* Drainageways

*Parent material:* Silty colluvium over drift

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Pachic Argiudolls

### **Typical Pedon**

Troxel silt loam, 0 to 2 percent slopes; at an elevation of about 860 feet; 165 feet south and 2,100 feet west of the northeast corner of sec. 14, T. 44 N., R. 6 E.; McHenry County, Illinois; USGS Woodstock topographic quadrangle; lat. 42 degrees 17 minutes 52 seconds N. and long. 88 degrees 29 minutes 57 seconds W., NAD 27; UTM Zone 16, Easting 0376403, Northing 4683931, NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine granular structure; friable; many very fine roots; slightly acid; abrupt smooth boundary.

A1—8 to 14 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many very fine roots; slightly acid; abrupt smooth boundary.

A2—14 to 27 inches; black (N 2.5/) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; common very fine roots; moderately acid; clear smooth boundary.

A3—27 to 33 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine granular structure; friable; common very fine roots; moderately acid; clear smooth boundary.

BA—33 to 39 inches; brown (10YR 4/3) silt loam; moderate very fine subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common very fine roots; moderately acid; clear smooth boundary.

Bt1—39 to 55 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; firm; common distinct dark brown (10YR 3/3) clay

films on faces of peds; few very fine roots; common sand grains; moderately acid; clear smooth boundary.

2Bt2—55 to 60 inches; 60 percent brown (10YR 4/3) and 40 percent dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; firm; common distinct dark brown (10YR 3/3) clay films on faces of peds; few very fine roots; 5 percent gravel; moderately acid; clear smooth boundary.

2Bt3—60 to 67 inches; brown (10YR 4/3) gravelly sandy loam; weak medium subangular blocky structure; friable; common distinct dark brown (10YR 3/3) clay films on faces of peds; 17 percent gravel; slightly acid; clear smooth boundary.

2Bt4—67 to 75 inches; dark yellowish brown (10YR 4/4) sandy loam; weak coarse subangular blocky structure; very friable; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; 8 percent gravel; slightly acid; abrupt smooth boundary.

2Bt5—75 to 79 inches; 55 percent dark yellowish brown (10YR 4/4) and 45 percent brown (10YR 4/3) clay loam; weak medium angular blocky structure; firm; few distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; 10 percent gravel; slightly acid; abrupt smooth boundary.

2BC—79 to 102 inches; 55 percent dark brown (7.5YR 3/2) and 45 percent brown (7.5YR 4/2) gravelly sandy clay loam; weak coarse angular blocky structure; friable; 18 percent gravel; slightly alkaline.

### Range in Characteristics

*Thickness of the mollic epipedon:* 20 to 45 inches

*Thickness of the silty material:* 36 to 60 inches

*Depth to the base of soil development:* More than 60 inches

*Ap or A horizon:*

Hue—10YR, 2.5Y, or N

Value—2 to 3

Chroma—0 to 3

Texture—silt loam

*Bt horizon:*

Hue—10YR

Value—3 to 5

Chroma—3 to 6

Texture—silt loam or silty clay loam

*2Bt or 2BC horizon:*

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 6

Texture—loam, clay loam, sandy clay loam, or sandy loam or the gravelly analogs of these textures

Content of gravel—less than 20 percent

## 197A—Troxel silt loam, 0 to 2 percent slopes

### Setting

*Landform:* Drainageways

*Position on the landform:* Footslopes

### Map Unit Composition

Troxel and similar soils: 88 percent

Dissimilar soils: 12 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a thinner dark surface soil
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that have a seasonal high water table within a depth of 6 feet

#### *Dissimilar soils:*

- The poorly drained Sable and Thorp soils on toeslopes
- The somewhat poorly drained Elburn and Muscatune soils on summits

### **Properties and Qualities of the Troxel Soil**

*Parent material:* Silty colluvium over drift

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 12.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Negligible

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Varna Series**

*Drainage class:* Moderately well drained

*Landform:* Ground moraines and end moraines

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Slope range:* 2 to 4 percent

*Taxonomic classification:* Fine, illitic, mesic Oxyaquic Argiudolls

### **Typical Pedon**

Varna silt loam, 2 to 4 percent slopes; at an elevation of 722 feet; 35 feet north and 860 feet east of the southwest corner of sec. 6, T. 29 N., R. 11 E.; Kankakee County, Illinois; USGS Herscher topographic quadrangle; lat. 41 degrees 00 minutes 53 seconds N. and long. 88 degrees 00 minutes 49 seconds W., NAD 27; UTM Zone 16, Easting 0414761, Northing 4540891, NAD 83:

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 distinct 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 the loess or other silty material:* Less than 18 inches

*Depth to carbonates:* 24 to 42 inches

*Depth to the base of soil development:* 24 to 60 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

*2Bt horizon:*

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—silty clay loam, silty clay, or 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 or clay loam

Content of gravel—less than 10 percent

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

### **Setting**

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and summits

### **Map Unit Composition**

Varna and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have till beginning at a depth of more than 18 inches
- Soils that are moderately eroded
- Soils that have more sand and less clay or silt in the subsoil
- 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:*

- Poorly drained soils on toeslopes

### **Properties and Qualities of the Varna Soil**

*Parent material:* Thin mantle of loess or other silty material and the underlying till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow

*Depth to restrictive feature:* 24 to 60 inches to dense material

*Available water capacity:* About 8.7 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.5 to 4.0 percent

*Shrink-swell potential:* Moderate

*Perched seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **Virgil Series**

*Drainage class:* Somewhat poorly drained

*Landform:* Ground moraines and outwash plains

*Parent material:* Loess and the underlying outwash

*Slope range:* 0 to 2 percent

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

### Typical Pedon

Virgil silt loam, 0 to 2 percent slopes; 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.; Stephenson County, Illinois; USGS Freeport East topographic quadrangle; lat. 42 degrees 16 minutes 21 seconds N. and long. 89 degrees 36 minutes 23 seconds W., NAD 27; UTM Zone 16, Easting 0285052, Northing 4683325, NAD 83:

- 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 distinct 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 distinct brown (7.5YR 4/4) and prominent 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 distinct brown (7.5YR 4/4) and prominent 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/) 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/) 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

*Depth to the base of soil development:* 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, silty clay loam, or silt loam

Content of gravel—less than 7 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; stratified in some pedons

Content of gravel—less than 10 percent

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

### ***Setting***

*Landform:* Ground moraines and outwash plains

*Position on the landform:* Foothills and summits

### ***Map Unit Composition***

Virgil and similar soils: 90 percent

Dissimilar soils: 10 percent

### **Components of Minor Extent**

#### *Similar soils:*

- Soils that have a thicker dark surface layer
- Soils that have 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 have a lighter colored surface layer
- Soils that have till in the lower part of the profile

#### *Dissimilar soils:*

- The poorly drained Drummer soils on toeslopes

### **Properties and Qualities of the Virgil Soil**

*Parent material:* Loess and the underlying outwash

*Drainage class:* Somewhat poorly drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate or moderately rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.3 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 0.5 foot to 2.0 feet, January through May

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 1

*Prime farmland category:* Prime farmland where drained

*Hydric soil status:* Not hydric

## **Warsaw Series**

*Drainage class:* Well drained

*Landform:* Stream terraces, outwash plains, 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, superactive, mesic Typic Argiudolls

*Taxadjunct features:* The Warsaw soils in map units 290C2, 290D2, 939C2, and 939D2 have a thinner dark surface soil than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Mollic Hapludalfs.

### **Typical Pedon**

Warsaw loam, 0 to 2 percent slopes; 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.; McHenry County,

Illinois; USGS Huntley topographic quadrangle; lat. 42 degrees 13 minutes 13 seconds N. and long. 88 degrees 26 minutes 32 seconds W., NAD 27; UTM Zone 16, Easting 0380973, Northing 4675248, NAD 83:

- 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), stratified 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 or dark surface layer:* 7 to 18 inches

*Depth to sandy and gravelly deposits:* 24 to 40 inches

*Depth to carbonates:* 24 to 40 inches

*Depth to the base of soil development:* 24 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Texture—clay loam, loam, or sandy 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—stratified with 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

## 290A—Warsaw loam, 0 to 2 percent slopes

### *Setting*

*Landform:* Stream terraces, outwash plains, and kames

*Position on the landform:* Summits

### *Map Unit Composition*

Warsaw and similar soils: 90 percent

Dissimilar soils: 10 percent

### *Components of Minor Extent*

#### *Similar soils:*

- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have a thinner surface layer
- Soils that have less gravel in the lower part of the profile

#### *Dissimilar soils:*

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

### *Properties and Qualities of the Warsaw Soil*

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 7.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### *Interpretive Groups*

*Land capability classification:* 2s

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## 290B—Warsaw loam, 2 to 4 percent slopes

### *Setting*

*Landform:* Kames, stream terraces, and outwash plains

*Position on the landform:* Summits and backslopes

### *Map Unit Composition*

Warsaw and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have slopes of less than 2 percent
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have a thinner surface layer
- Soils that have less gravel in the lower part of the profile

*Dissimilar soils:*

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

### ***Properties and Qualities of the Warsaw Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **290C2—Warsaw loam, 4 to 6 percent slopes, eroded**

### ***Setting***

*Landform:* Kames, stream terraces, and outwash plains

*Position on the landform:* Backslopes and summits

### ***Map Unit Composition***

Warsaw and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have less gravel in the lower part of the profile

*Dissimilar soils:*

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

***Properties and Qualities of the Warsaw Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 6.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

**290D2—Warsaw loam, 6 to 12 percent slopes, eroded*****Setting***

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Backslopes

***Map Unit Composition***

Warsaw and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have slopes of less than 6 percent
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have less gravel in the lower part of the profile

*Dissimilar soils:*

- The somewhat poorly drained Kane soils on summits and footslopes

***Properties and Qualities of the Warsaw Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 6.2 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 4.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

## **939C2—Rodman-Warsaw complex, 4 to 6 percent slopes, eroded**

### ***Setting***

*Landform:* Kames, stream terraces, and outwash plains  
*Position on the landform:* Backslopes and shoulders

### ***Map Unit Composition***

Rodman and similar soils: 50 percent  
 Warsaw and similar soils: 40 percent  
 Dissimilar soils: 10 percent

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that have calcareous sand and gravel at the surface
- Soils that have more sand and less silt in the surface layer
- Soils that have till in the lower part of the profile

#### *Dissimilar soils:*

- The somewhat poorly drained Kane soils on footslopes

### ***Properties and Qualities of the Rodman Soil***

*Parent material:* Sandy and gravelly glaciofluvial deposits  
*Drainage class:* Excessively drained  
*Slowest permeability within a depth of 40 inches:* Moderately rapid  
*Permeability below a depth of 60 inches:* Very rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 2.9 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 3.0 percent  
*Shrink-swell potential:* Low  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Low  
*Hazard of corrosion:* Low for steel and concrete

*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Negligible

### ***Properties and Qualities of the Warsaw Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Very rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 6.4 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 4.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* Rodman—4s; Warsaw—2e  
*Prime farmland category:* Not prime farmland  
*Hydric soil status:* Rodman—not hydric; Warsaw—not hydric

## **939D2—Rodman-Warsaw complex, 6 to 12 percent slopes, eroded**

### ***Setting***

*Landform:* Stream terraces, outwash plains, and kames  
*Position on the landform:* Backslopes

### ***Map Unit Composition***

Rodman and similar soils: 55 percent  
 Warsaw and similar soils: 30 percent  
 Dissimilar soils: 15 percent

### ***Components of Minor Extent***

#### ***Similar soils:***

- Soils that have calcareous sand and gravel at the surface
- Soils that have more sand and less silt in the surface layer
- Soils that have till in the lower part of the profile

#### ***Dissimilar soils:***

- The somewhat poorly drained Kane soils on footslopes

### ***Properties and Qualities of the Rodman Soil***

*Parent material:* Sandy and gravelly glaciofluvial deposits  
*Drainage class:* Excessively drained  
*Slowest permeability within a depth of 40 inches:* Moderately rapid  
*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 2.8 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 3.0 percent  
*Shrink-swell potential:* Low  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Low  
*Hazard of corrosion:* Low for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Negligible

### ***Properties and Qualities of the Warsaw Soil***

*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Very rapid  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 6.2 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 2.0 to 4.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* Rodman—4s; Warsaw—3e  
*Prime farmland category:* Not prime farmland  
*Hydric soil status:* Rodman—not hydric; Warsaw—not hydric

## ***Waupecan Series***

*Drainage class:* Well drained  
*Landform:* Stream terraces and outwash plains  
*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 Argiudolls

### ***Typical Pedon***

Waupecan silt loam, 0 to 2 percent slopes; 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.; Kane County, Illinois; USGS Hampshire topographic quadrangle; lat. 42 degrees 06 minutes 34 seconds N. and long. 88 degrees 32 minutes 08 seconds W., NAD 27; UTM Zone 16, Easting 0373038, Northing 4663072, NAD 83:

- 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 the loess or other silty material:* 24 to 48 inches

*Depth to sandy and gravelly deposits:* 40 to 60 inches

*Depth to carbonates:* 40 to 60 inches

*Depth to the base of soil development:* 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

*2Bt or 2BC horizon:*

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—3 to 6

Texture—loam, clay loam, sandy clay loam, sandy loam, or loamy sand or the gravelly analogs of these textures; stratified in some pedons  
 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; stratified in some pedons

Content of gravel—15 to 70 percent

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

### ***Setting***

*Landform:* Stream terraces and outwash plains

*Position on the landform:* Summits

### ***Map Unit Composition***

Waupecan and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have 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 within a depth of 6 feet
- Soils that do not have a subsurface layer
- Soils that have more sand and less silt in the upper one-half of the profile

*Dissimilar soils:*

- The poorly drained Dunham soils on toeslopes
- The somewhat poorly drained Grundelein soils on summits and footslopes

### ***Properties and Qualities of the Waupecan Soil***

*Parent material:* Loess or other silty material and the underlying loamy and gravelly outwash

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Very rapid

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 5.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

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

### **Westville Series**

*Drainage class:* Well drained  
*Landform:* Ground moraines  
*Parent material:* Paleosol formed in till  
*Slope range:* 2 to 18 percent  
*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Hapludalfs

### **Typical Pedon**

Westville silt loam, 2 to 5 percent slopes; at an elevation of about 860 feet; 2,040 feet south and 166 feet east of the northwest corner of sec. 4, T. 26 N., R. 10 E.; Winnebago County, Illinois; USGS Pecatonica topographic quadrangle; lat. 42 degrees 17 minutes 01 second N. and long. 89 degrees 21 minutes 30 seconds W., NAD 27; UTM Zone 16, Easting 0305556, Northing 4683975, NAD 83:

- 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; few pebbles 5 millimeters in diameter; slightly acid; abrupt smooth boundary.
- Bt1—8 to 15 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; few distinct dark reddish brown (5YR 3/3) clay films on faces of ped; few very dark grayish brown (10YR 3/2) krotovinas; common pebbles 1 centimeter in diameter; neutral; clear smooth boundary.
- Bt2—15 to 21 inches; reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few distinct reddish brown (5YR 4/4) clay films on faces of ped; few fine black (N 2.5/) iron and manganese oxide stains on faces of ped; common pebbles 1 to 3 centimeters in diameter; neutral; clear smooth boundary.
- Bt3—21 to 38 inches; yellowish red (5YR 4/6) clay loam; strong medium angular and subangular blocky structure; firm; many distinct reddish brown (5YR 4/3) clay films on faces of ped; many fine black (N 2.5/) iron and manganese oxide stains on faces of ped; common pebbles 1 to 3 centimeters in diameter; neutral; clear smooth boundary.
- Bt4—38 to 44 inches; reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few distinct reddish brown (5YR 4/3) clay films on faces of ped; common fine black (N 2.5/) iron and manganese oxide stains on faces of ped; common pebbles less than 1 centimeter in diameter and few pebbles 3 centimeters in diameter; strongly acid; clear smooth boundary.
- Bt5—44 to 50 inches; brown (7.5YR 4/4) clay loam; moderate medium prismatic structure parting to moderate medium and coarse subangular blocky; friable; few distinct reddish brown (5YR 4/3) and yellowish red (5YR 4/6) clay films on faces of ped; common pebbles 1 to 2 centimeters in diameter; strongly acid; clear smooth boundary.
- BC1—50 to 61 inches; light yellowish brown (10YR 6/4) and brown (7.5YR 4/4) sandy clay loam; weak and moderate medium and coarse prismatic structure parting to moderate medium subangular blocky; friable; few pebbles 1 to 3 centimeters in diameter; moderately acid; clear smooth boundary.
- BC2—61 to 67 inches; light yellowish brown (10YR 6/4) and dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; friable; few pebbles 2 to 5 centimeters in diameter; slightly acid; clear smooth boundary.

C—67 to 72 inches; light yellowish brown (10YR 6/4) sandy loam; massive; friable; few pebbles ranging from less than 1 centimeter to 5 centimeters in diameter; slightly effervescent; moderately alkaline.

### **Range in Characteristics**

*Depth to carbonates:* More than 40 inches

*Depth to the base of soil development:* More than 40 inches

*Ap or A horizon:*

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt loam

*Bt horizon:*

Hue—10YR, 7.5YR, or 5YR

Value—4 to 6

Chroma—3 or 4

Texture—clay loam or sandy clay loam

*C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—sandy loam, loam, or gravelly sandy loam

## **22B—Westville silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Shoulders and summits

### ***Map Unit Composition***

Westville and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that are moderately eroded
- Soils that have a darker surface layer
- Soils that have less sand and more silt in the upper part of the subsoil

*Dissimilar soils:*

- The well drained Whalan and NewGlarus soils, which are moderately deep to bedrock; on shoulders

### ***Properties and Qualities of the Westville Soil***

*Parent material:* Paleosol formed in till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.6 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

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

## **22C2—Westville silt loam, 5 to 10 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines  
*Position on the landform:* Backslopes and shoulders

### ***Map Unit Composition***

Westville and similar soils: 97 percent  
 Dissimilar soils: 3 percent

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that have a darker surface layer
- Soils that have less sand and more silt in the upper part of the subsoil
- Soils that have more sand and less clay and silt in the middle part of the subsoil

#### *Dissimilar soils:*

- The well drained Whalan and NewGlarus soils, which are moderately deep to bedrock; on shoulders

### ***Properties and Qualities of the Westville Soil***

*Parent material:* Paleosol formed in till  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Moderate  
*Permeability below a depth of 60 inches:* Moderate  
*Depth to restrictive feature:* More than 80 inches  
*Available water capacity:* About 10.4 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* Moderate  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## **22D2—Westville silt loam, 10 to 18 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Backslopes and shoulders

### ***Map Unit Composition***

Westville and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have slopes of less than 10 percent
- Soils that have less sand and more silt in the upper part of the subsoil
- Soils that have more sand and less clay and silt in the middle part of the subsoil

*Dissimilar soils:*

- The well drained Whalan and NewGlarus soils, which are moderately deep to bedrock; on shoulders

### ***Properties and Qualities of the Westville Soil***

*Parent material:* Paleosol formed in till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 4e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric

## ***Whalan Series***

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Till over residuum derived from limestone and dolomite

*Slope range:* 2 to 15 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Hapludalfs

### Typical Pedon

Whalan silt loam, in an area of Whalan and NewGlarus silt loams, 5 to 10 percent slopes, eroded; at an elevation of 806 feet; 150 feet south and 952 feet west of the northeast corner of sec. 25, T. 29 N., R. 10 E.; Winnebago County, Illinois; USGS Durand topographic quadrangle; lat. 42 degrees 29 minutes 28 seconds N. and long. 89 degrees 17 minutes 19 seconds W., NAD 27; UTM Zone 16, Easting 0311924, Northing 4706829, NAD 83:

- Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; friable; many fine roots; neutral; clear smooth boundary.
- BE—4 to 10 inches; brown (7.5YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; many fine roots; common light gray (10YR 7/2) (dry) uncoated silt and sand grains on faces of peds; neutral; clear smooth boundary.
- 2Bt1—10 to 17 inches; brown (7.5YR 4/4) silty clay loam with a noticeable amount of sand; strong fine subangular blocky structure; friable; common fine roots; common distinct brown (7.5YR 4/2) clay films on vertical faces of peds; common fine black (N 2.5/) iron and manganese oxide stains throughout; moderately acid; clear smooth boundary.
- 2Bt2—17 to 26 inches; brown (7.5YR 4/4) sandy clay loam; moderate medium prismatic structure parting to strong medium angular blocky; friable; common fine roots; common distinct dark grayish brown (10YR 4/2) clay films and light gray (10YR 7/2) (dry) uncoated silt and sand grains on faces of peds; strongly acid; clear smooth boundary.
- 2Bt3—26 to 33 inches; brown (7.5YR 4/4) sandy clay loam; weak coarse prismatic structure; friable; common fine roots; common distinct brown (7.5YR 4/2) clay films and light gray (10YR 7/2) (dry) uncoated silt and sand grains on faces of peds; common fine black (N 2.5/) iron and manganese oxide stains throughout; slightly acid; clear smooth boundary.
- 3Bt4—33 to 36 inches; strong brown (7.5YR 5/6) clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few fine roots; common distinct brown (7.5YR 4/2) clay films on vertical faces of peds; common black (N 2.5/) iron and manganese oxide stains throughout; neutral; clear smooth boundary.
- 3R—36 inches; fractured dolomite bedrock.

### Range in Characteristics

*Depth to lithic contact:* 20 to 40 inches

*Depth to the base of soil development:* 20 to 40 inches

*Ap or A horizon:*

Hue—10YR

Value—2 to 4

Chroma—1 to 3

Texture—silt loam

*Bt or 2Bt horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam, clay loam, loam, or sandy clay loam

*3Bt horizon:*

Hue—10YR, 7.5YR, or 5YR

Value—4 to 6

Chroma—3 to 6  
 Texture—clay loam, silty clay, or clay

## **561B—Whalan and NewGlarus silt loams, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines  
*Position on the landform:* Shoulders and summits

### ***Map Unit Composition***

Whalan and similar soils: 46 percent  
 NewGlarus and similar soils: 44 percent  
 Dissimilar soils: 10 percent

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that are shallow or deep to bedrock
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that are moderately eroded
- Soils that have less sand and more silt in the upper one-half of the subsoil

#### *Dissimilar soils:*

- The well drained Pecatonica and Westville soils, which are very deep to bedrock; on summits and shoulders

### ***Properties and Qualities of the Whalan Soil***

*Parent material:* Till over residuum derived from limestone and dolomite  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Slow  
*Permeability below a depth of 60 inches:* Moderately rapid or rapid  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Available water capacity:* About 7.3 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* High  
*Ponding:* None  
*Flooding:* None  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Properties and Qualities of the NewGlarus Soil***

*Parent material:* Loess over clayey pedisidiment over dolomite  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Slow  
*Permeability below a depth of 60 inches:* Slow to moderate  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Available water capacity:* About 6.6 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 3.0 percent  
*Shrink-swell potential:* High  
*Ponding:* None

*Flooding:* None  
*Potential for frost action:* High  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Low  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e  
*Prime farmland category:* Prime farmland  
*Hydric soil status:* Whalan—not hydric; NewGlarus—not hydric

## **561C2—Whalan and NewGlarus silt loams, 5 to 10 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines  
*Position on the landform:* Backslopes and shoulders

### ***Map Unit Composition***

Whalan and similar soils: 46 percent  
 NewGlarus and similar soils: 44 percent  
 Dissimilar soils: 10 percent

### ***Components of Minor Extent***

#### *Similar soils:*

- Soils that are shallow or deep to bedrock
- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 5 percent or more than 10 percent

#### *Dissimilar soils:*

- The well drained Pecatonica and Westville soils, which are very deep to bedrock; on shoulders

### ***Properties and Qualities of the Whalan Soil***

*Parent material:* Till over residuum derived from limestone and dolomite  
*Drainage class:* Well drained  
*Slowest permeability within a depth of 40 inches:* Slow  
*Permeability below a depth of 60 inches:* Moderately rapid or rapid  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Available water capacity:* About 6.6 inches to a depth of 60 inches  
*Content of organic matter in the surface layer:* 1.0 to 2.0 percent  
*Shrink-swell potential:* High  
*Ponding:* None  
*Flooding:* None  
*Accelerated erosion:* The surface layer has been thinned by erosion.  
*Potential for frost action:* Moderate  
*Hazard of corrosion:* Moderate for steel and concrete  
*Surface runoff class:* Medium  
*Susceptibility to water erosion:* Moderate  
*Susceptibility to wind erosion:* Low

### ***Properties and Qualities of the NewGlarus Soil***

*Parent material:* Loess over clayey pedis sediment over dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 6.4 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Whalan—not hydric; NewGlarus—not hydric

## **561D2—Whalan and NewGlarus silt loams, 10 to 15 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Backslopes

### ***Map Unit Composition***

Whalan and similar soils: 46 percent

NewGlarus and similar soils: 44 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that are shallow or deep to bedrock
- Soils that have less sand and more silt in the upper one-half of the subsoil
- Soils that have slopes of less than 10 percent or more than 15 percent

*Dissimilar soils:*

- The well drained Pecatonica and Westville soils, which are very deep to bedrock; on shoulders and backslopes

### ***Properties and Qualities of the Whalan Soil***

*Parent material:* Till over residuum derived from limestone and dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Moderately rapid or rapid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 5.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Properties and Qualities of the NewGlarus Soil**

*Parent material:* Loess over clayey pedis sediment over dolomite

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Slow

*Permeability below a depth of 60 inches:* Slow to moderate

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Available water capacity:* About 5.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 1.0 to 2.0 percent

*Shrink-swell potential:* High

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* High

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* High

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 4e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Whalan—not hydric; NewGlarus—not hydric

## **Will Series**

*Drainage class:* Poorly drained

*Landform:* Stream terraces, kames, and outwash plains

*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**

Will loam, 0 to 2 percent slopes; 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.; Winnebago County, Illinois; USGS Cherry Valley topographic quadrangle; lat. 42 degrees 11 minutes 47 seconds N. and long. 88 degrees 56 minutes 45 seconds W., NAD 27; UTM Zone 16, Easting 0339336, Northing 4673417, NAD 83:

Ap—0 to 8 inches; black (N 2.5/) 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/) 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/) 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/) 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 strata ( $\frac{1}{4}$  inch thick) 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

*Depth to the base of soil development:* 24 to 40 inches

*Ap or A horizon:*

Hue—10YR, 2.5Y, or N

Value—2 to 3

Chroma—0 to 2

Texture—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

*BCg horizon (where present):*

Hue—10YR, 2.5Y, 5Y, or N

Value—2 to 6

Chroma—0 to 3

Texture—loam, sandy clay loam, or sandy loam or the gravelly analogs of these textures

Content of gravel—10 to 25 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

**329A—Will loam, 0 to 2 percent slopes*****Setting****Landform:* Stream terraces, kames, and outwash plains*Position on the landform:* Toeslopes***Map Unit Composition***

Will and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have sandy and gravelly deposits beginning at a depth of more than 40 inches
- Soils that have a thicker dark surface soil

*Dissimilar soils:*

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

***Properties and Qualities of the Will Soil****Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits*Drainage class:* Poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Very rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 6.0 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 4.0 to 6.0 percent*Shrink-swell potential:* Moderate*Apparent seasonal high water table (depth, months):* At the surface to 1.0 foot below the surface, January through May*Ponding (depth, months):* At the surface to 0.5 foot above the surface, January through May*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and moderate for concrete*Surface runoff class:* Negligible*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 2w*Prime farmland category:* Prime farmland where drained*Hydric soil status:* Hydric

## **Windere Series**

*Drainage class:* Moderately well drained

*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 Mollic Oxyaquic  
Hapludalfs

### **Typical Pedon**

Windere silt loam, 2 to 4 percent slopes; at an elevation of 922 feet; 2,250 feet north and 1,320 feet west of the southeast corner of sec. 18, T. 46 N., R. 5 E.; McHenry County, Illinois; USGS Capron topographic quadrangle; lat. 42 degrees 27 minutes 53 seconds N. and long. 88 degrees 41 minutes 33 seconds W., NAD 27; UTM Zone 16, Easting 0360845, Northing 4702766, NAD 83:

- Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak medium granular; friable; common very fine roots; neutral; abrupt smooth boundary.
- Bt1—9 to 17 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak 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; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; moderately acid; clear smooth boundary.
- Bt2—17 to 26 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) and few distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; moderately acid; clear smooth boundary.
- Bt3—26 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) and few distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; slightly acid; clear smooth boundary.
- 2Bt4—31 to 36 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; friable; few very fine roots; few distinct brown (10YR 4/3) and dark brown (10YR 3/3) clay films on faces of peds and in pores; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 2 percent gravel; neutral; clear wavy boundary.
- 2Bt5—36 to 50 inches; strong brown (7.5YR 4/6) clay loam; weak medium and coarse 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 and in pores; common fine and medium faint strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine prominent grayish brown (10YR 5/2) iron depletions in the matrix; 5 percent gravel; neutral; clear smooth boundary.
- 2C—50 to 65 inches; yellowish brown (10YR 5/4) loam; massive; friable; many medium and coarse faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 10 percent gravel; strongly effervescent; slightly alkaline.

### **Range in Characteristics**

*Thickness of the loess or other silty material:* 22 to 40 inches

*Depth to carbonates:* 36 to 60 inches

*Depth to the base of soil development:* 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 to 6  
 Chroma—3 or 4  
 Texture—silty clay loam or silt loam

*2Bt horizon:*

Hue—7.5YR or 10YR  
 Value—4 to 6  
 Chroma—2 to 6  
 Texture—clay loam or loam

*2C horizon:*

Hue—7.5YR or 10YR  
 Value—4 to 6  
 Chroma—2 to 6  
 Texture—loam, sandy loam, or fine sandy loam  
 Content of gravel—3 to 15 percent

**545A—Windere silt loam, 0 to 2 percent slopes*****Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Summits

***Map Unit Composition***

Windere and similar soils: 90 percent

Dissimilar soils: 10 percent

***Components of Minor Extent****Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a thicker surface layer
- Soils that have carbonates at a depth of less than 36 inches
- Soils that have till beginning at a depth of less than 22 inches or more than 40 inches

*Dissimilar soils:*

- The poorly drained Pella soils on toeslopes

***Properties and Qualities of the Windere Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 1

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **545B—Windere silt loam, 2 to 4 percent slopes**

### ***Setting***

*Landform:* Ground moraines and end moraines

*Position on the landform:* Backslopes and summits

### ***Map Unit Composition***

Windere and similar soils: 90 percent

Dissimilar soils: 10 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have a thicker surface layer
- Soils that have carbonates at a depth of less than 36 inches
- Soils that have till beginning at a depth of less than 22 inches or more than 40 inches

*Dissimilar soils:*

- The poorly drained Pella soils on toeslopes

### ***Properties and Qualities of the Windere Soil***

*Parent material:* Loess or other silty material and the underlying till

*Drainage class:* Moderately well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 11.1 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Apparent seasonal high water table (depth, months):* 2.0 to 3.5 feet, February through April

*Ponding:* None

*Flooding:* None

*Potential for frost action:* High

*Hazard of corrosion:* High for steel and moderate for concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

### **Interpretive Groups**

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

### **Winnebago Series**

*Drainage class:* Well drained

*Landform:* Ground moraines

*Parent material:* Paleosol formed in till

*Slope range:* 2 to 10 percent

*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Argiudolls

*Taxadjunct features:* The Winnebago soil in map unit 728C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, superactive, mesic Mollic Hapludalf.

### **Typical Pedon**

Winnebago silt loam, 2 to 5 percent slopes; at an elevation of 840 feet; 85 feet north and 405 feet east of the southwest corner of sec. 11, T. 27 N., R. 11 E.; Winnebago County, Illinois; USGS Winnebago topographic quadrangle; lat. 42 degrees 20 minutes 58 seconds N. and long. 89 degrees 12 minutes 11 seconds W., NAD 27; UTM Zone 16, Easting 0318536, Northing 4690928, NAD 83:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam with 10 percent fine sand; grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.

A—10 to 15 inches; dark brown (7.5YR 3/2) silt loam with 20 percent fine sand; brown (7.5YR 5/2) dry; weak very fine subangular blocky structure parting to moderate medium granular; friable; common fine roots; few rounded pebbles 1 to 2 centimeters in diameter; strongly acid; clear smooth boundary.

2BA—15 to 21 inches; brown (7.5YR 4/4) loam; moderate medium subangular blocky structure; friable; few fine roots; few faint reddish brown (5YR 4/4) clay films on faces of peds; few distinct dark brown (7.5YR 3/2) organic stains on faces of peds and around rounded pebbles; few rounded pebbles 1 to 2 centimeters in diameter; strongly acid; clear smooth boundary.

2Bt1—21 to 34 inches; reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct dark reddish brown (5YR 3/4) clay films on faces of peds; common medium distinct yellowish red (5YR 4/6) masses of iron accumulation in the matrix; many rounded pebbles 1 to 2 centimeters in diameter; strongly acid; clear smooth boundary.

2Bt2—34 to 50 inches; strong brown (7.5YR 5/6) clay loam; weak coarse prismatic structure parting to weak medium and coarse subangular blocky; firm; few fine roots; common distinct dark brown (7.5YR 3/2) clay films on faces of peds; common medium distinct reddish brown (5YR 4/4) masses of iron accumulation in the matrix; many rounded pebbles 1 to 2 centimeters in diameter; strongly acid; clear smooth boundary.

2BC1—50 to 66 inches; reddish brown (5YR 4/4) clay loam; weak coarse prismatic structure; friable; few faint dark reddish brown (5YR 3/4) clay films on pressure faces around rounded pebbles; many rounded pebbles 1 to 2 centimeters in diameter; moderately acid; abrupt smooth boundary.

2BC2—66 to 74 inches; reddish brown (5YR 4/4) sandy loam; massive; friable; few faint dark reddish brown (5YR 3/4) clay films on pressure faces and around

rounded pebbles; many rounded pebbles 1 to 2 centimeters in diameter; moderately acid.

### **Range in Characteristics**

*Thickness of the mollic epipedon or dark surface layer:* 7 to 18 inches

*Depth to carbonates:* More than 48 inches

*Depth to the base of soil development:* 42 to more than 72 inches

*Ap or A horizon:*

Hue—10YR or 7.5YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam

*2Bt horizon:*

Hue—7.5YR or 5YR

Value—4 to 6

Chroma—3 or 4

Texture—clay loam, loam, or sandy clay loam

*2C horizon (where present):*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4

Texture—sandy loam, loam, or gravelly sandy clay loam

Content of gravel—2 to 23 percent

## **728B—Winnebago silt loam, 2 to 5 percent slopes**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Shoulders and summits

### ***Map Unit Composition***

Winnebago and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

*Similar soils:*

- Soils that are moderately eroded
- Soils that have till beginning at a depth of more than 15 inches
- Soils that have carbonates at a depth of less than 48 inches
- Soils that contain more sand and less clay and silt in the lower part of the profile
- Soils that have bedrock at a depth of 40 to 60 inches
- Soils that have slopes of less than 2 percent or more than 5 percent

*Dissimilar soils:*

- The well drained Rockton and Dodgeville soils, which are moderately deep to bedrock; on shoulders and summits

### ***Properties and Qualities of the Winnebago Soil***

*Parent material:* Paleosol formed in till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.5 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 3.0 to 4.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Low

*Susceptibility to water erosion:* Low

*Susceptibility to wind erosion:* Low

### ***Interpretive Groups***

*Land capability classification:* 2e

*Prime farmland category:* Prime farmland

*Hydric soil status:* Not hydric

## **728C2—Winnebago silt loam, 5 to 10 percent slopes, eroded**

### ***Setting***

*Landform:* Ground moraines

*Position on the landform:* Backslopes and shoulders

### ***Map Unit Composition***

Winnebago and similar soils: 88 percent

Dissimilar soils: 12 percent

### ***Components of Minor Extent***

#### ***Similar soils:***

- Soils that have till beginning at a depth of more than 15 inches
- Soils that have carbonates at a depth of less than 48 inches
- Soils that have more sand and less clay and silt in the lower part of the profile
- Soils that have bedrock at a depth of 40 to 60 inches
- Soils that have slopes of less than 5 percent or more than 10 percent

#### ***Dissimilar soils:***

- The well drained Rockton and Dodgeville soils, which are moderately deep to bedrock; on backslopes and shoulders

### ***Properties and Qualities of the Winnebago Soil***

*Parent material:* Paleosol formed in till

*Drainage class:* Well drained

*Slowest permeability within a depth of 40 inches:* Moderate

*Permeability below a depth of 60 inches:* Moderate

*Depth to restrictive feature:* More than 80 inches

*Available water capacity:* About 10.2 inches to a depth of 60 inches

*Content of organic matter in the surface layer:* 2.0 to 3.0 percent

*Shrink-swell potential:* Moderate

*Ponding:* None

*Flooding:* None

*Accelerated erosion:* The surface layer has been thinned by erosion.

*Potential for frost action:* Moderate

*Hazard of corrosion:* Moderate for steel and concrete

*Surface runoff class:* Medium

*Susceptibility to water erosion:* Moderate

*Susceptibility to wind erosion:* Low

***Interpretive Groups***

*Land capability classification:* 3e

*Prime farmland category:* Not prime farmland

*Hydric soil status:* Not hydric



# Use and Management of the Soils

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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 gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

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

## Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses or describe specific management concerns. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

## Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the potential of the soils for the use. Terms for limitation classes are *not limited*, *somewhat limited*, and *very limited*. Terms indicating the potential of the soils for a given use are *good*, *fair*, and *poor*.

## Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact

on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

## Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

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

In 2002, Boone County had about 135,203 acres of cropland (U.S. Department of Commerce, 2002). The major row crops are corn and soybeans. Wheat is the major small grain crop, and alfalfa is the major forage crop.

The soils in Boone 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 in applying this technology.

Water erosion is a potential problem on soils that have slopes of more than 2 percent, such as Flagg, Parr, and Pecatonica soils. It also is a hazard in less sloping areas if the slopes are long and runoff water is concentrated.

Loss of the surface layer through sheet and rill erosion 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 is generally lower in content of plant nutrients and organic matter and higher in content of clay than the surface soil. As the amount of organic matter decreases and the content of clay increases in the plow layer, soil tilth deteriorates, resulting in soil crusting and a reduced rate of water infiltration. Under these conditions, preparing a good seedbed could be difficult. Erosion results in the sedimentation of streams, rivers, road ditches, and lakes. Sediment pollution reduces the quality of water for agricultural, municipal, and recreational uses and for fish and wildlife. Removing the sediment generally is expensive. Erosion control helps to minimize this pollution and improves water quality.

Erosion-control measures include both cultural and structural practices. The most widely used cultural practice in the county is conservation tillage, such as chisel plowing, no-till farming, or ridge planting. Conservation tillage systems leave a cover of crop residue on 20 to 90 percent of the surface. No-till farming is most effective on well drained and moderately well drained soils, such as Danabrook and St. Charles soils. Another common cultural practice is using 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 also are effective in controlling erosion.

Structural practices are needed in drainageways where concentrated runoff flows overland. Constructing grassed waterways or establishing erosion-control structures reduces the hazard of erosion in these areas (fig. 8). Further information about the 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 runoff rate, 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 Kendall and Kidder soils, which have a surface layer of silt loam or loam and a low content of organic matter. Generally, the



**Figure 8.—A grassed waterway removes excess surface water and helps to prevent the formation of gullies.**

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 infiltration rate, and increases the runoff rate and the hazard of erosion. Regular additions of crop residue, manure, and other organic material improve soil structure and minimize crusting.

Poor tilth is a problem on soils that have a surface layer of silty clay loam or silty clay. Drummer and Sable soils are examples. If these soils are plowed when wet, the surface layer becomes cloddy. This cloddiness hinders the preparation of a good seedbed. Tilling in the fall, leaving the soil surface rough, and leaving moderate amounts of crop residue on the surface generally result in good tilth in the spring. A system of strip or ridge tillage may also be effective in areas of these soils.

A high pH within a depth of 40 inches can occur in Lisbon and McHenry soils. The high soil reaction can reduce the uptake of some nutrients by the plants or cause other elements to accumulate to toxic levels. 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 areas where the soils have excessive permeability, such as areas of Dickinson, Hoopston, and Ockley soils, the potential for ground-water contamination is a concern. These soils contain sandy and/or gravelly deposits within a depth of 60 inches and are rapidly or 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 that occurs as a result of excessive permeability. 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. The selection of chemicals should be based on their solubility in water, their ability to bind with the soil, and the rate at which they break down in the soil. Splitting chemical applications, particularly applications of nitrogen, is beneficial. This practice is less likely than a one-time application to result in excessive leaching. Also, planting legumes in a crop rotation or as a cover crop adds nitrogen to the soil, thereby reducing the amount of nitrogen needed in chemical applications. The practice of crop rotation is also effective in limiting the buildup of weed and insect populations and therefore reduces 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.

Drainage systems have been installed in most areas of the 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. A subsurface drainage system has been installed in areas of poorly drained soils, such as Pella and Selma soils. In some areas of poorly drained and very poorly drained soils, such as Drummer and Palms soils, ponding is a hazard. Surface tile inlets or shallow surface ditches are needed to remove excess water. In places, somewhat poorly drained soils are wet long enough for productivity to be reduced in some years unless a drainage system is installed. A subsurface drainage system has been installed in areas of the somewhat poorly drained Elburn and Stronghurst soils.

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 common legume grown for hay. It is often grown in mixtures with smooth brome grass and orchardgrass. Alfalfa is best suited to moderately well drained and well drained soils, such as Kidami and Plano 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 to the soil 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 specific tract of land.

Overgrazing reduces the vigor of pasture plants and reduces forage production. It also increases the extent of weeds and brush. Deferred grazing, rotation grazing, and proper stocking rates help to prevent overgrazing. Deferred grazing allows the plants in pastures that are not being used to build up reserves of carbohydrates. Rotating grazing among several pastures allows each area a rest period.

Many of the soils in the survey area have a high water table in spring. Deferring grazing during wet periods can minimize surface compaction. Pasture renovation also helps to prevent compaction. Frost heave can damage alfalfa and red clover in areas that have a seasonal high water table. Leaving a cover of stubble 4 to 6 inches high during the winter and planting mixtures of grasses and legumes help to prevent frost heave.

### **Limitations Affecting Cropland and Pastureland**

The management concerns affecting the use of the detailed soil map units in the survey area for crops and pasture are shown in table 6.

#### **Cropland**

The main concerns affecting the management of cropland in Boone County are water erosion, crusting, poor tilth, high pH, excessive permeability, wetness, and ponding.

Generally, a combination of several practices is needed to control water erosion. Conservation tillage, strip cropping, contour farming, conservation cropping systems, crop residue management, diversions, and grassed waterways help to prevent excessive soil loss.

In some areas used as cropland, wetness and ponding are management concerns. 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 soil tilth include incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage. Surface cloddiness can be controlled by avoiding tillage when the soil is too wet.

High pH and excess lime can be partially overcome by incorporating green manure crops, manure, or crop residue into the soil and by using conservation tillage and conservation cropping systems. Also, crops may respond well to additions of phosphate fertilizer on soils that have a high content of lime.

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.

A root-restrictive layer in a soil and bedrock within a depth of 40 inches limit the total amount of water available to plants. These limitations cannot be easily overcome. Planting cover crops and applying a system of conservation tillage that leaves crop residue on the surface after planting increase the rate of water infiltration, reduce the runoff rate, and conserve moisture. Also, planting drought-tolerant crop species makes the most efficient use of the limited supply of available water in the soil.

Restricted permeability can increase the susceptibility of the soil to erosion and limit the effectiveness of drainage systems. The hazard of erosion can be reduced by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Spacing the tile at narrow intervals improves the effectiveness of the drainage system.

Conserving moisture is important in areas where the soils have a limited available water capacity. Measures that conserve moisture are primarily those that reduce the evaporation and runoff rates and increase 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.

Wind erosion can be controlled by applying a system of conservation tillage that leaves crop residue on the surface after planting and by keeping the surface rough.

Flooding cannot be easily overcome. Winter small grain crops can be damaged by floodwater. Tilling and planting should be delayed in the spring until flooding is no longer a hazard.

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.

The criteria used to determine some of the limitations or hazards in the table are described in the following paragraphs.

*Crusting.*—The average content of organic matter in the surface layer is 2.5 percent or less, and the content of clay in the surface layer is between 20 and 35 percent.

*Depth to bedrock.*—Bedrock is within a depth of 40 inches.

*Excess lime.*—The calcium carbonate equivalent is 15 percent or more within a depth of 16 inches.

*Excessive permeability.*—The lower limit of the permeability range within the soil profile is 6 inches or more per hour.

*Flooding.*—The soil is occasionally flooded or frequently flooded.

*High pH.*—The lower limit of the pH is 7.4 or more within a depth of 40 inches.

*Limited available water capacity.*—The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less.

*Ponding.*—The water table is above the surface.

*Poor tilth.*—The lower limit of the clay content in the surface layer is 27 percent or more.

*Restricted permeability.*—Permeability is less than 0.2 inch per hour between the surface and a depth of 40 inches.

*Root-restrictive layer.*—Dense material is within 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 upper limit of the slope is 0.8 or more, and the slope is 3 percent or more.

*Wetness.*—The seasonal high water table is within a depth of 1.5 feet.

*Wind erosion.*—The wind erodibility group (WEG) is 1 or 2.

## **Pastureland**

The main concerns affecting the management of pastureland in Boone County are water erosion, low pH, high pH, excessive permeability, wetness, ponding, limited available water capacity, frost heave, depth to bedrock, wind erosion, flooding, poor tilth, excess lime, equipment limitations, low fertility, and root-restrictive layers.

Water erosion is a hazard in pastured areas where the value of the Kw factor multiplied by the upper limit of the slope is 0.8 or more and the slope is 3 percent or more. Water erosion reduces the productivity of pasture. It also results in onsite and offsite sedimentation, causes water pollution by sedimentation, and increases the runoff of livestock manure and other nutrients. Establishing or renovating stands of legumes and grasses helps to control erosion. 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 applying a system of conservation tillage that leaves crop residue on the surface can help to minimize erosion.

Soils that have low pH, or low reaction, have a pH value of 5.5 or less within a depth of 40 inches. 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 the 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.

In soils that have high pH, the lower limit of the pH range is 7.4 or more within a depth of 40 inches. Excess lime occurs in soils that have a calcium carbonate equivalent of 15 percent or more within a depth of 16 inches. The high soil reaction associated with these limitations can inhibit the uptake of certain nutrients and micronutrients 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 the plants. Applications of sulfate and phosphate compounds or additions of certain forms of nitrogen fertilizer can improve forage production.

Excessive permeability is a concern in areas where the lower limit of the permeability range is 6 or more inches per hour within the soil profile. Excessive permeability can cause deep leaching of nutrients and pesticides. Selecting appropriate chemicals and using split application methods can reduce the hazard of ground-water contamination when stands of legumes and grasses are established or renovated.

Wetness and ponding are management concerns in some areas of pasture or hayland. Wetness occurs when the seasonal high water table is within a depth of 1.5 feet, and ponding occurs when the seasonal high water table is above the surface. Drainage systems consisting of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these help to 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 improves forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Limited available water capacity occurs in areas where the available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches 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 plants may be reduced if the amount of available water is inadequate for maintenance of a healthy community of desired pasture species. The pasture cannot support the desired number of livestock. 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.

Frost heave is a limitation in areas where the soils have a moderate or high potential for frost action. It occurs when ice lenses or bands that drive an ice wedge between two layers develop near the surface layer of a soil. 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 help to minimize the effects of frost heave. Timely deferment of grazing helps to maintain a protective cover that insulates the soil, thereby reducing the effects of frost heave.

Soils in which the depth to bedrock is 40 inches or less have a restricted root zone and a limited available moisture capacity. Planting adapted forage and hay varieties helps to overcome this limitation. The plants should not be clipped or grazed until they are sufficiently established. Rotation grazing and timely deferment of grazing help to maintain healthy stands of forage plants, which, in turn, reduce the runoff rate and thus conserve moisture.

Soils that have a wind erodibility group (WEG) of 1 or 2 are susceptible to wind erosion. If the soil is tilled for the reseeded of pasture or hay crops, planting winter cover crops, applying 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 the plant cover and thus 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.

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 improves forage production. Restricted grazing during wet periods helps to keep the pasture in good condition.

Overgrazing or grazing when the soil is wet reduces the extent of plant cover and results in surface compaction and poor tilth and thus increases the susceptibility to erosion. Somewhat poorly drained, poorly drained, or severely eroded soils in which the content of clay in the surface layer is 27 percent or more are considered to have poor tilth. 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 minimize surface compaction or the formation of ruts by making it unnecessary for cattle to travel long distances up and down the steeper slopes.

The use of equipment is limited in areas where the average slope is more than 10 percent. This limitation can cause rapid wear of equipment and can hinder fertilization, harvesting, pasture renovation, and seedbed preparation. It cannot be easily overcome.

Low fertility occurs in areas where the average content of organic matter in the surface layer is 1 percent or less or the cation-exchange capacity (CEC) is 7 milliequivalents or less per 100 grams of soil. Low fertility affects the health and vigor of the plants and thus has a direct impact on the quantity and quality of livestock.

Additions of fertilizer and other organic material should be based on the results of soil tests, on the needs of specific plant species, and on the desired level of production.

Soils that have a root-restrictive layer have a dense layer of till within a depth of 40 inches. This layer inhibits root penetration. This limitation lowers the total amount of water that is available to plants. Deep-rooted perennial legumes and grasses make the most efficient use of the limited amount of available water. Selecting drought-tolerant species of legumes and grasses improves forage production.

## **Yields per Acre**

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered (Olson and Lang, 2000; Olson and others, 2000).

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

Yields for grass-legume pasture under an average level of management also are shown in table 7. Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

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

Crops other than those shown in table 7 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

## **Land Capability Classification**

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

*Capability classes*, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

*Capability subclasses* are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, or wildlife habitat.

*Capability units* are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of the soils in this survey area is given in the section "Soil Series and Detailed Soil Map Units" and in the yields table.

## **Prime Farmland**

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for

the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent 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 146,200 acres, or 81 percent of the total acreage in Boone County, meets the requirements for prime farmland.

The map units in the survey area that are considered prime farmland are listed in table 8. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps. Some of the soil qualities that affect use and management are described under the heading "Soil Series and Detailed Soil Map Units."

## Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These

visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Table 9 lists the map units that include hydric soils, either as major components or as soils of minor extent. The hydric soils listed in the table meet the definition of a hydric soil and have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and Vasilas, 2006).

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
  - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
  - B. are poorly drained or very poorly drained and have either:
    - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
    - 2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
    - 3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

## Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To

ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Windbreaks are often planted on land that did not originally support trees. Knowledge of how well the trees grow on such land can be gained only by observing and recording the growth of trees that have been planted and have survived. Many popular windbreak species are not indigenous to the areas in which they are planted.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters, a tree or shrub may grow well or grow poorly, depending on the characteristics of the soil. Each tree or shrub has definable potential heights in a given physiographic area and under a given climate. Accurate definitions of potential heights are necessary when a windbreak is planned and designed.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service or from a commercial nursery.

## **Forestland Management and Productivity**

Little of the presettlement forestland in the survey area has been untouched or properly managed. Over the past century, new forests have been created only by natural succession of fallow upland and bottom-land areas, by abandonment of low-yielding cropland, and by seeding or planting of seedlings. Only a small percentage of the present forestland is under proper timber management. Areas of grazed forestland are slowly recovering, but many decades or a full forest generation may be needed before these areas can become productive without management.

The composition of today's forests are changing because of the introduction of species from around the world. The planting of trees for windbreaks, for erosion control, and for their ornamental value has significantly affected the forestland.

In 2000, Boone County had about 11,025 acres of forestland (Illinois Department of Agriculture, 2002). This acreage represents about 6 percent of the total land area in the county. Several forest types occur in the county, including flood-plain forests, upland forests, and savannas.

The forests in the county are esthetically pleasing, but they also serve to protect and enhance watershed quality, recreation, and wildlife habitat. The small amount of forestland that still exists in the county could be greatly improved if proper management measures were applied. Assistance in establishing, improving, or managing forestland is available from foresters or natural resource specialists with various local, State, and Federal agencies, including the Illinois Department of Natural Resources, the Forest Service, the Natural Resources Conservation Service, and the local Soil and Water Conservation District.

## **Forestland Management**

The tables described in this section rate the soils according to the limitations that affect various aspects of forestland management.

### **Forestland Harvest Equipment Considerations**

Table 11 provides information regarding the use of harvest equipment in areas used as forestland.

For most soils spring is the most limiting season. Alternate thawing and freezing during snowmelt cause saturation and low strength of the surface soil layers. When thawing is complete, saturation continues for short periods in well drained soils to nearly all year in very poorly drained soils in depressions. Degrees of wetness are generally proportionate to the depth at which a seasonal high water table occurs and the duration of the high water table. The water table generally is lower in the summer during the heavy use of moisture by vegetation and is nearer to the surface during periods when absorbed precipitation is greater than the vegetation requires. Harvesting during periods of saturation usually results in severe soil damage, except when the soil is frozen. The preferred season for timber harvest on many soils is winter, when wetness and low soil strength can be overcome by freezing.

Considerations shown in the table are as follows:

*Slope.*—The upper limit of the slope range is more than 15 percent.

*Flooding.*—The soil is frequently flooded.

*Wetness.*—The soil is somewhat poorly drained, poorly drained, or very poorly drained or has a perched water table (any drainage class).

*Depth to hard bedrock.*—The depth to hard bedrock is less than 10 inches.

*Rubby surface.*—The word “rubby” is in the map unit name.

*Surface stones.*—The words “extremely stony” are included in the description of the surface layer, or 3 percent or more of the soil surface is covered with stones.

*Surface boulders.*—The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with boulders.

*Susceptible to rutting and wheel slippage (low strength).*—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

*Poor traction (loose sandy material).*—The USDA texture includes sands or loamy sands in any layer at a depth of 10 inches or less.

### **Forestland Haul Roads and Log Landing Considerations**

Table 12 provides information regarding the use of the soils as haul roads and log landings. Log landings are areas where logs are assembled for transportation. Areas that require little or no cutting, filling, or surface preparation are desired. Haul roads serve as transportation routes from log landings to primary roads. Generally, haul roads are unpaved, but some are graveled.

For haul roads, considerations shown in the table are as follows:

*Slope.*—The slope is 8 percent or more.

*Flooding.*—The soil is frequently flooded.

*Wetness.*—The soil is somewhat poorly drained, poorly drained, or very poorly drained or has a perched water table (any drainage class).

*Depth to hard bedrock.*—Hard bedrock is within a depth of 20 inches.

*Depth to soft bedrock.*—Soft bedrock is within a depth of 20 inches.

*Surface boulders.*—The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with boulders.

*Low bearing strength.*—The AASHTO classification is A-6, A-7, or A-8 in any layer within a depth of 20 inches.

*Rubby surface.*—The word “rubby” is in the map unit name.

For log landings, considerations shown in the table are as follows:

*Slope.*—The slope is more than 6 percent.

*Flooding.*—The soil is occasionally flooded or frequently flooded.

*Wetness.*—The soil is somewhat poorly drained, poorly drained, or very poorly drained or has a perched water table (any drainage class).

*Surface boulders.*—The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with boulders.

*Susceptible to rutting and wheel slippage (low strength).*—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

*Rubblly surface.*—The word “rubblly” is in the map unit name.

### **Forestland Site Preparation and Planting Considerations**

Table 13 provides information regarding considerations affecting site preparation and planting in areas used as forestland.

Considerations shown in the table are as follows:

*Slope.*—The upper limit of the slope range is more than 15 percent.

*Flooding.*—The soil is frequently flooded.

*Wetness.*—The soil is somewhat poorly drained, poorly drained, or very poorly drained or has a perched water table (any drainage class).

*Depth to hard bedrock.*—The depth to hard bedrock is less than 20 inches.

*Surface stones.*—The word “stony” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with stones.

*Surface boulders.*—The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with boulders.

*Water erosion.*—The slope is 8 percent or more.

*Potential poor tilth and compaction.*—The AASHTO classification is A-6 or A-7 in the upper 10 inches.

*Rubblly surface.*—The word “rubblly” is in the map unit name.

*Cobbly surface.*—The word “cobbly” is included in the description of the surface layer, or 0.1 percent or more of the surface is covered with cobbles.

### **Forestland Productivity**

Table 14 can help woodland owners or forest managers plan the use of soils for wood crops. Only those soils commonly used for wood crops are listed.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or online at <http://soils.usda.gov/technical/>.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

*Suggested trees to plant* are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

### **Recreation**

Boone County offers a wide variety of recreational facilities, including county-owned conservation areas consisting of more than 1,700 acres of parks, trails, and preserves. These areas provide an assortment of outdoor activities, including canoeing, fishing, bow hunting, hiking, biking, cross-country skiing, skating, horseback riding, and picnicking. Also, most municipalities in the county offer a variety of recreational facilities, including playgrounds, swimming pools, and golf courses.

The soils of the survey area are rated in tables 15a and 15b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 15a and 15b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

*Camp areas* require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Picnic areas* are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Playgrounds* require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Paths and trails* for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

*Off-road motorcycle trails* require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

*Golf fairways* are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

## Wildlife Habitat

Because of diverse topography resulting primarily from glacial action, Boone County provides a variety of aquatic and upland habitats that support an abundance of wildlife species. The characteristic aquatic habitats include several rivers, numerous streams, and wetlands. The wetland types include marshes, glacial potholes, hillside seeps, and flood-plain wetlands along streams and rivers. These areas of wetland provide important storm-water storage and water quality benefits to the county as well as habitat for such species as ducks, geese, great blue herons, muskrat, mink, beaver, and numerous frogs, toads, and turtles (fig. 9).

The upland areas, which range from steep to gently sloping hillsides and ridges to nearly level ground moraines, terraces, and outwash plains, were once covered by a sea of native prairie grasses and small open oak woodlands known as savannas. These natural communities were once home to such species as buffalo, prairie chickens, and wolves. As the county was settled, the conversion of land for agriculture and urbanization altered these natural communities and the wildlife populations associated with them. The landscape in Boone County is now a mosaic of urban development, cropland, pasture, small woodlots, and wetlands and other waterways supporting wildlife species that have adapted to the human-altered landscape. These species include white-tailed deer, mallards, pheasants, squirrels, crows, cardinals, house sparrows, raccoons, foxes, and coyotes.

In general, most of the land in the county is not managed primarily for wildlife. Good land management practices, however, commonly improve the habitat for wildlife. For example, farm practices that leave crop residue on the fields during the fall and winter



**Figure 9.—Many wildlife species, including frogs, are attracted to wetlands.**

not only help to control erosion but also provide winter cover and food for some wildlife species. Allowing grassed waterways, road ditches, fence lines, 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 of these wetlands should be avoided. Buffer strips surrounding wetland areas provide food and nesting cover for many wildlife species and keep 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 on neighboring properties are avoided.

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 Natural Resources, 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 16, 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, soybeans, 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 bromegrass, timothy, orchardgrass, clover, alfalfa, and birdsfoot trefoil.

*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, indiagrass, blueberry, goldenrod, lambsquarters, dandelions, coneflowers, sunflowers, blackberry, ragweed, wheatgrass, and nightshade (fig. 10).

*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, box elder, birch, maple, green ash, willow, and American elm. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are American plum, hazelnut, dogwood, and arrowwood.

*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,



Figure 10.—Yellow coneflowers provide food and cover for wildlife.

available water capacity, and wetness. Examples of coniferous plants are pine, spruce, cedar, and tamarack.

*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, wild rice, arrowhead, waterplantain, cattails, and prairie cordgrass.

*Shallow water areas* have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife 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 Hungarian partridge, ring-necked pheasant, bobwhite quail, sharp-tailed grouse, 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, ruffed grouse, thrushes, woodpeckers, owls, squirrels, raccoons, and white-tailed deer.

*Habitat for wetland wildlife* consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, bitterns, rails, kingfishers, muskrat, otter, mink, beaver, frogs, and turtles.

## **Engineering**

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

*Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.*

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

*Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.*

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

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

## **Building Site Development**

Over the past decade, Boone County has experienced a significant increase in population. This increase has had an important impact on land use.

Urban erosion can be a major factor affecting water quality. It is estimated that the rate of urban erosion and the resulting sediment may be as much as 300 to 400 times the erosion rate in agricultural areas. Urban land under development is commonly stripped for several years without adequate erosion control. Soil compaction and massive earth moving are more conducive to erosion than is seedbed preparation for crop production.

Urban erosion-control practices involve essentially the same concepts as those applied to agriculture. The surface of the soil should be protected from the impact of raindrops, and the runoff from accumulated rainwater must be controlled. Effective control of erosion and sediment involves three major elements. First, protecting the soil can be accomplished by maintaining a permanent or temporary vegetative cover, mulching, or using a variety of other practices. Second, runoff can be controlled with conservation practices. These practices include diversions, grassed waterways or lined swales, storm sewers, or gully-control structures. Third, sediment can be captured by using sediment basins, sediment traps, and filter fences.

Erosion-control measures are most effective in combinations. The measures used and their effectiveness depend on the soil characteristics and topography. Information about the design of erosion-control measures is provided in the "Illinois Urban Manual" (USDA/NRCS, 2002), which is available in local offices of the Natural Resources Conservation Service.

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 17a and 17b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Dwellings* are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table (fig. 11), ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding,



**Figure 11.—A seasonal high water table is a limitation affecting dwellings built on poorly drained soils.**

slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

*Small commercial buildings* are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

*Local roads and streets* have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

*Shallow excavations* are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using

machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

*Lawns and landscaping* require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

## Sanitary Facilities

Tables 18a and 18b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Septic tank absorption fields* are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

*Sewage lagoons* are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that

have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

*Daily cover for landfill* is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final

cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

## Construction Materials

Tables 19a and 19b give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

*Gravel* and *sand* 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 19a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good*, *fair*, or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In table 19b, the rating class terms are *good*, *fair*, and *poor*. The features that limit the soils as sources of reclamation material, roadfill, and topsoil are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of these materials. The lower the number, the greater the limitation.

*Reclamation material* is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

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

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

*Topsoil* is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

## Water Management

Tables 20a, 20b, and 20c give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; grassed waterways; terraces and diversions; tile drains and underground outlets; and irrigation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

### Table 20a

*Pond reservoir areas* hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other

permeable material. Excessive slope can affect the storage capacity of the reservoir area.

*Embankments, dikes, and levees* are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

*Aquifer-fed excavated ponds* are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

#### **Table 20b**

*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 affect the construction of grassed waterways. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

*Terraces and diversions* are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

*Tile drains and underground outlets* are used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to undisturbed soils that commonly have a seasonal high water table within a depth of about 3.5 feet. Current land use is not considered in the ratings. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade and stability of tile drains. Limitations affecting areas where the tile line passes through soils in which the water table is generally below a depth of 3.5 feet are provided in the table that includes the column "shallow excavations," which is described under the heading "Building Site Development."

**Table 20c**

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 a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

# Soil Properties

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Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

## Engineering Index Properties

Table 21 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. 12). "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

*Classification* of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

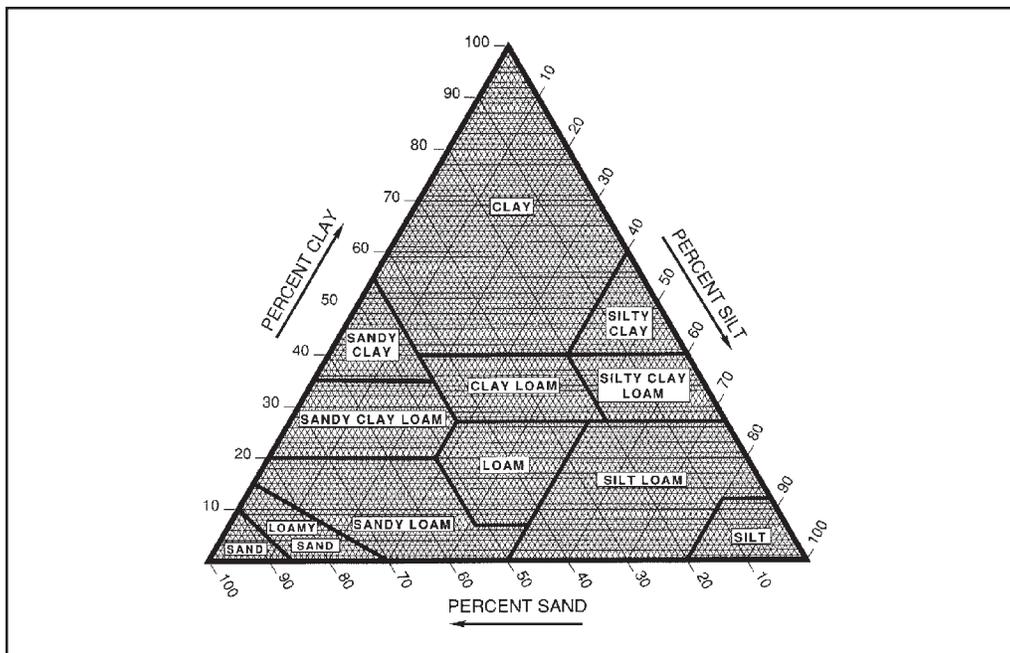


Figure 12.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

*Rock fragments* larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

*Percentage (of soil particles) passing designated sieves* is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry 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 22 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as

classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

*Sand* as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

*Moist bulk density* is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at  $1/3$ - or  $1/10$ -bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Permeability (Ksat)* refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Linear extensibility* refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at  $1/3$ - or  $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In table 22, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops.

*Erosion factors* are shown in table 22 as the K factor ( $K_w$  and  $K_f$ ) 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  $K_w$*  indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor  $K_f$*  indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Wind erodibility groups* are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook" (available online at <http://soils.usda.gov>).

*Wind erodibility index* is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

## Chemical Properties

Table 23 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.

*Effective cation-exchange capacity* refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

*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 24 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

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

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

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

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 24 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

*Flooding* is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall

or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

*Duration* and *frequency* of flooding are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

*Water table* refers to a saturated zone in the soil. Table 24 indicates the depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone for the specified *months* in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

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

## Soil Features

Table 25 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. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *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.



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# Glossary

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Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the "National Soil Survey Handbook" (available in local offices of the Natural Resources Conservation Service or on the Internet).

- Ablation till.** Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.
- 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.** Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.
- Alpha,alpha-dipyridyl.** A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.
- Animal unit month (AUM).** The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.
- Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.
- Argillic horizon.** A subsoil horizon characterized by an accumulation of illuvial clay.
- Aspect.** The direction toward which a slope faces. Also called slope aspect.
- Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:
- |                 |              |
|-----------------|--------------|
| Very low .....  | 0 to 3       |
| Low .....       | 3 to 6       |
| Moderate .....  | 6 to 9       |
| High .....      | 9 to 12      |
| Very high ..... | more than 12 |
- Backslope.** The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.
- Backswamp.** A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.
- Basal area.** The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

- Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
- Base slope** (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).
- Beach deposits.** Material, such as sand and gravel, that is generally laid down parallel to an active or relict shoreline of a postglacial or glacial lake.
- Beach ridge.** A low, essentially continuous mound of beach or beach-and-dune material accumulated by the action of waves and currents on the backshore of a beach, beyond the present limit of storm waves or the reach of ordinary tides, and occurring singly or as one of a series of approximately parallel deposits. The ridges are roughly parallel to the shoreline and represent successive positions of an advancing shoreline.
- Bedding plane.** A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.
- Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
- Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- Bench terrace.** A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.
- Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
- Board foot.** A unit of measurement represented by a board 1 foot wide, 1 foot long, and 1 inch thick.
- Bog.** Waterlogged, spongy ground, consisting primarily of mosses, containing acidic, decaying vegetation (such as sphagnum, sedges, and heaths) that develops into peat.
- Bottom land.** An informal term loosely applied to various portions of a flood plain.
- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Catsteps.** See Terracettes.
- Channery soil material.** Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.
- Chemical treatment.** Control of unwanted vegetation through the use of chemicals.
- Chiseling.** Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.
- Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay depletions.** See Redoximorphic features.
- Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- Claypan.** A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.
- Climax plant community.** The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
- Coarse textured soil.** Sand or loamy sand.
- Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
- Cobbly soil material.** Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.
- COLE (coefficient of linear extensibility).** See Linear extensibility.
- Colluvium.** Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.
- Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
- Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
- Concretions.** See Redoximorphic features.
- Conservation cropping system.** Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.
- Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

- Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."
- Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.
- Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.
- Coprogenous earth (sedimentary peat).** A type of limnic layer composed predominantly of fecal material derived from aquatic animals.
- Cord.** A unit of measurement of stacked wood. A standard cord occupies 128 cubic feet with dimensions of 4 feet by 4 feet by 8 feet.
- Corrosion (geomorphology).** A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.
- Corrosion (soil survey interpretations).** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.
- Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.
- Crop residue management.** Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.
- Cropping system.** Growing crops according to a planned system of rotation and management practices.
- Cross-slope farming.** Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.
- Crown.** The upper part of a tree or shrub, including the living branches and their foliage.
- 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.
- Decreasers.** The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.
- Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.
- Dense layer (in tables).** A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.
- Depression.** Any relatively sunken part of the earth's surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage. An open depression has a natural outlet for surface drainage.
- Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

- Diamicton.** A generic term for any nonlithified, nonsorted or poorly sorted sediment that contains a wide range of particle sizes, such as coarse fragments contained within a fine earth matrix (e.g., till); used when the genetic content of the sediment is uncertain.
- Diatomaceous earth.** A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.
- Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.
- Drainage class (natural).** Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained*. These classes are defined in the “Soil Survey Manual.”
- Drainage, surface.** Runoff, or surface flow of water, from an area.
- Drainageway.** A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.
- Drift.** A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.
- Drumlin.** A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.
- Duff.** A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.
- Dune.** A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.
- Earthy fill.** See Mine spoil.
- Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
- Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
- Eolian deposit.** Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.
- Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.
- Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

- Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
- Erosion (geologic).* Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
- Erosion (accelerated).* Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.
- Erosion pavement.** A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.
- Erosion surface.** A land surface shaped by the action of erosion, especially by running water.
- Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.
- Esker.** A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.
- Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
- Fibric soil material (peat).** The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.
- Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.
- Fill slope.** A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.
- Fine textured soil.** Sandy clay, silty clay, or clay.
- Firebreak.** An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.
- First bottom.** An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.
- Flaggy soil material.** Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.
- Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.
- Flood plain.** The nearly level plain that borders a stream and is subject to flooding unless protected artificially.
- Flood-plain landforms.** A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-

plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

**Flood-plain splay.** A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

**Flood-plain step.** An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

**Fluvial.** Of or pertaining to rivers or streams; produced by stream or river action.

**Footslope.** The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

**Forb.** Any herbaceous plant not a grass or a sedge.

**Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.

**Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

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

**Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

**Geomorphology.** The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.

**Glaciofluvial deposits.** Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

**Glaciolacustrine deposits.** Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

**Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

**Graded stripcropping.** Growing crops in strips that grade toward a protected waterway.

**Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

**Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

**Gravelly soil material.** Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

**Green manure crop (agronomy).** A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

- Ground water.** Water filling all the unblocked pores of the material below the water table.
- Gully.** A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.
- Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.
- Hard to reclaim** (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.
- Head slope** (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.
- Hemic soil material (mucky peat).** Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.
- Herbaceous peat.** An accumulation of organic material, decomposed to some degree, that is predominantly the remains of sedges, reeds, cattails, and other herbaceous plants.
- High-chroma zones.** Zones having chroma of 3 or more. Typical color 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.
- Hill.** A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.
- Hillslope.** A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.
- Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:
- O horizon.*—An organic layer of fresh and decaying plant residue.
- L horizon.*—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.
- A horizon.*—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.
- E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
- B horizon.*—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.
- C horizon.*—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the

overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon.*—Soft, consolidated bedrock beneath the soil.

*R layer.*—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

**Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.

**Hydrologic soil groups.** Refers to soils grouped according to their runoff potential.

The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

**Ice-walled lake plain.** A relict surface marking the floor of an extinct lake basin that was formed on solid ground and surrounded by stagnant ice in a stable or unstable superglacial environment on stagnation moraines. As the ice melted, the lake plain became perched above the adjacent landscape. The lake plain is well sorted, generally fine textured, stratified deposits.

**Igneous rock.** Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

**Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

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

**Increasers.** Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

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

**Infiltration capacity.** The maximum rate at which water can infiltrate into a soil under a given set of conditions.

**Infiltration rate.** The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**Intake rate.** The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2 .....	very low
0.2 to 0.4 .....	low
0.4 to 0.75 .....	moderately low
0.75 to 1.25 .....	moderate
1.25 to 1.75 .....	moderately high
1.75 to 2.5 .....	high
More than 2.5 .....	very high

**Interfluve.** A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general

direction. An elevated area between two drainageways that sheds water to those drainageways.

**Interfluve** (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

**Intermittent stream.** A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

**Invaders.** On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

**Iron depletions.** See Redoximorphic features.

**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.

**Kame.** A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

**Karst** (topography). A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

**Knoll.** A small, low, rounded hill rising above adjacent landforms.

**Ksat.** Saturated hydraulic conductivity. (See Permeability.)

**Lacustrine deposit.** Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

**Lake bed.** The bottom of a lake; a lake basin.

**Lake plain.** A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

**Lake terrace.** A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

- Lamella.** A thin (commonly less than 1 cm thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).
- Landslide.** A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.
- Large stones** (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.
- Leaching.** The removal of soluble material from soil or other material by percolating water.
- Linear extensibility.** Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at  $1/3$ - or  $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.
- Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.
- Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.
- Loess.** Material transported and deposited by wind and consisting dominantly of silt-sized particles.
- Low strength.** The soil is not strong enough to support loads.
- Low-chroma zones.** Zones having chroma of 2 or less. Typical color 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.
- MAP.** Mean annual precipitation, expressed in inches.
- Marl.** An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.
- Mass movement.** A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.
- Masses.** See Redoximorphic features.
- Meander belt.** The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.
- Meander scar.** A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.
- Meander scroll.** One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.
- Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.
- Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.

- Metamorphic rock.** Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.
- Mine spoil.** An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.
- Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.
- Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.
- Miscellaneous area.** A kind of map unit that has little or no natural soil and supports little or no vegetation.
- MLRA (major land resource area).** A geographic area characterized by a particular pattern of land uses, elevation and topography, soils, climate, water resources, and potential natural vegetation.
- Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.
- Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.
- Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.
- Moraine.** In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.
- Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.
- Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).
- Muck.** Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)
- Mucky peat.** Unconsolidated soil material consisting primarily of organic matter that is in an intermediate stage of decomposition such that a significant part of the material can be recognized and a significant part of the material cannot be recognized.
- Munsell notation.** A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.
- Natric horizon.** A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.
- Neutral soil.** A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)
- Nodules.** See Redoximorphic features.
- Nose slope** (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

**Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

**Organic matter.** Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low .....	less than 0.5 percent
Low .....	0.5 to 1.0 percent
Moderately low .....	1.0 to 2.0 percent
Moderate .....	2.0 to 4.0 percent
High .....	4.0 to 8.0 percent
Very high .....	more than 8.0 percent

**Outwash.** Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

**Outwash plain.** An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

**Paleoterrace.** An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

**Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

**Parent material.** The unconsolidated organic and mineral material in which soil forms.

**Peat.** Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

**Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pedisediment.** A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

**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.

**Permeability.** The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable .....	less than 0.0015 inch
Very slow .....	0.0015 to 0.06 inch
Slow .....	0.06 to 0.2 inch
Moderately slow .....	0.2 to 0.6 inch
Moderate .....	0.6 inch to 2.0 inches
Moderately rapid .....	2.0 to 6.0 inches
Rapid .....	6.0 to 20 inches
Very rapid .....	more than 20 inches

- pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)
- Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.
- Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.
- Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.
- Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.
- Plowpan.** A compacted layer formed in the soil directly below the plowed layer.
- Poletimber.** Hardwood trees ranging from 5 to 11 inches and conifers ranging from 5 to 9 inches in diameter at breast height.
- Ponding.** Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.
- Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.
- Pore linings.** See Redoximorphic features.
- Potential native plant community.** See Climax plant community.
- Potential rooting depth (effective rooting depth).** Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.
- Prescribed burning.** Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.
- Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.
- Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.
- Proper grazing use.** Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.
- Rangeland.** Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.
- Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid .....	less than 3.5
Extremely acid .....	3.5 to 4.4
Very strongly acid .....	4.5 to 5.0
Strongly acid .....	5.1 to 5.5
Moderately acid .....	5.6 to 6.0
Slightly acid .....	6.1 to 6.5
Neutral .....	6.6 to 7.3
Slightly alkaline .....	7.4 to 7.8
Moderately alkaline .....	7.9 to 8.4
Strongly alkaline .....	8.5 to 9.0
Very strongly alkaline .....	9.1 and higher

**Red beds.** Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

**Redoximorphic concentrations.** See Redoximorphic features.

**Redoximorphic depletions.** See Redoximorphic features.

**Redoximorphic features.** Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
  - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
  - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
  - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chroma less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
  - A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
  - B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

**Reduced matrix.** See Redoximorphic features.

**Regolith.** All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

**Relief.** The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

**Residuum (residual soil material).** Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

**Rill.** A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

**Rise.** A slight increase in elevation of the land surface, typically with a broad summit and gently sloping sides.

- Riser.** The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.
- Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.
- Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.
- Root zone.** The part of the soil that can be penetrated by plant roots.
- Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.
- Saline soil.** A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.
- Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.
- Sandstone.** Sedimentary rock containing dominantly sand-sized particles.
- Sapling.** A tree ranging from 1 to 5 inches in diameter at breast height.
- Sapric soil material (muck).** The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.
- Saturated hydraulic conductivity (Ksat).** See Permeability.
- Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.
- Sawtimber.** Hardwood trees more than 11 inches and conifers more than 9 inches in diameter at breast height.
- Scarification.** The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.
- Sedimentary rock.** A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.
- Seedling.** A tree less than 1 inch in diameter at breast height.
- 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. All the soils of a given series have horizons that are similar in composition, thickness, and arrangement.
- Shale.** Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.
- Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.
- Shoulder.** The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.
- Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.
- Side slope** (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

- 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.** An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.
- Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
- Sinkhole.** A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.
- Site index.** A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.
- Slickensides** (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.
- Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.
- Slope alluvium.** Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size sand/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.
- Sloughed till.** Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.
- Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.
- Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.
- Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.
- Soil separates.** Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand .....	2.0 to 1.0
Coarse sand .....	1.0 to 0.5
Medium sand .....	0.5 to 0.25
Fine sand .....	0.25 to 0.10
Very fine sand .....	0.10 to 0.05
Silt .....	0.05 to 0.002
Clay .....	less than 0.002

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

**Stone line.** In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

**Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

**Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.

**Strath terrace.** A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

**Stream terrace.** One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

**Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

**Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

**Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

**Subsidence.** The potential decrease in surface elevation as a result of the drainage of wet soils that have organic layers or semifluid, mineral layers. Subsidence, as a result of drainage, is attributed to (1) shrinkage from drying, (2) consolidation because of the loss of ground-water buoyancy, (3) compaction from tillage or manipulation, (4) wind erosion, (5) burning, and (6) biochemical oxidation.

**Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.

**Subsoiling.** Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

**Substratum.** The part of the soil below the solum.

**Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.

**Summer fallow.** The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

**Summit.** The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

- Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”
- Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.
- Swale.** A slight depression in the midst of generally level land. A shallow depression in an undulating ground moraine resulting from uneven glacial deposition.
- 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.** An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.
- Terrace (conservation).** An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.
- Terrace (geomorphology).** A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.
- Terracettes.** Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.
- Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”
- Thin layer (in tables).** Otherwise suitable soil material that is too thin for the specified use.
- Till.** Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.
- Till plain.** An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.
- Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
- Toeslope.** The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.
- Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.
- Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

- Tread.** The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.
- Upland.** An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.
- Valley fill.** The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.
- Variation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.
- Varve.** A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.
- Water bars.** Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.
- Weathering.** All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.
- Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.
- Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry 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.
- Woody peat.** An accumulation of organic material that is predominantly composed of trees, shrubs, and other woody plants.

# Tables

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Table 1.--Temperature and Precipitation  
(Recorded in the period 1971-2000 at Beloit, Wisconsin)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snowfall
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--		
°F	°F	°F	°F	°F	Units	In	In	In		In	
January----	27.3	11.4	19.4	53	-19	0	1.38	0.69	2.06	4	8.8
February---	32.4	16.4	24.4	58	-13	0	1.29	.40	2.14	3	6.5
March-----	44.4	26.4	35.4	76	2	15	2.04	.97	3.04	4	3.5
April-----	58.7	37.4	48.1	84	17	87	3.75	2.16	5.08	6	.9
May-----	71.1	48.4	59.7	91	31	305	3.44	1.94	4.86	7	.0
June-----	80.3	57.8	69.0	95	42	561	4.58	1.77	7.13	6	.0
July-----	83.7	62.5	73.1	98	47	699	3.81	2.12	5.43	5	.0
August-----	81.3	60.6	71.0	96	47	625	4.40	2.22	6.25	6	.0
September--	74.2	52.4	63.3	93	34	397	3.70	1.30	6.21	5	.0
October----	62.4	41.1	51.8	83	24	134	2.37	.74	3.78	4	.0
November---	45.9	29.8	37.9	72	8	15	2.90	1.45	4.20	5	1.5
December---	32.3	17.3	24.8	57	-11	2	1.94	1.08	2.78	4	8.1
Yearly:											
Average---	57.8	38.5	48.2	---	---	---	---	---	---	---	---
Extreme---	102	-26	---	99	-20	---	---	---	---	---	---
Total-----	---	---	---	---	---	2,840	35.60	27.87	40.45	59	29.3

\* 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 Beloit, Wisconsin)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
<b>Last freezing temperature in spring:</b>			
1 year in 10 later than--	Apr. 14	Apr. 27	May 6
2 years in 10 later than--	Apr. 10	Apr. 22	May 1
5 years in 10 later than--	Apr. 3	Apr. 13	Apr. 21
<b>First freezing temperature in fall:</b>			
1 year in 10 earlier than--	Oct. 24	Oct. 8	Sept. 26
2 years in 10 earlier than--	Oct. 28	Oct. 14	Sept. 30
5 years in 10 earlier than--	Nov. 6	Oct. 25	Oct. 9

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Beloit,  
Wisconsin)

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	198	171	153
8 years in 10	205	179	159
5 years in 10	217	194	172
2 years in 10	229	209	185
1 year in 10	235	217	191

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Adrian-----	Sandy or sandy-skeletal, mixed, euic, mesic Terric Haplosaprists
Andres-----	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Argyle-----	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
Atterberry-----	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Backbone-----	Coarse-loamy, mixed, superactive, mesic Mollic Hapludalfs
Beardstown-----	Fine-loamy, mixed, superactive, mesic Udollic Endoaqualfs
Billett-----	Coarse-loamy, mixed, superactive, mesic Mollic Hapludalfs
Brenton-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Camden-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Caprell-----	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Casco-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Inceptic Hapludalfs
Chelsea-----	Mixed, mesic Lamellic Udipsamments
Comfrey-----	Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls
Dakota-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls
Danabrook-----	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Danabrook-----	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Dickinson-----	Coarse-loamy, mixed, superactive, mesic Typic Hapludolls
Dodgeville-----	Fine-silty over clayey, mixed, superactive, mesic Typic Argiudolls
Dresden-----	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs
Drummer-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Dunbarton-----	Clayey, smectitic, mesic Lithic Hapludalfs
Dunham-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Elburn-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Elco-----	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Elizabeth-----	Loamy-skeletal, mixed, superactive, mesic Lithic Hapludolls
Elliott-----	Fine, illitic, mesic Aquic Argiudolls
Fayette-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Flagg-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Flagler-----	Coarse-loamy, mixed, superactive, mesic Typic Hapludolls
*Flagler-----	Coarse-loamy, mixed, superactive, mesic Pachic Hapludolls
Fox-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs
Friesland-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Geryune-----	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Greenbush-----	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Grellton-----	Fine-loamy, mixed, superactive, mesic Typic Hapludalfs
Griswold-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
*Griswold-----	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
Grundelein-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Harvard-----	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Hayfield-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Aquollic Hapludalfs
Herbert-----	Fine-silty, mixed, superactive, mesic Udollic Epiaqualfs
Hitt-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Hononegah-----	Sandy, mixed, mesic Entic Hapludolls
Hoopston-----	Coarse-loamy, mixed, superactive, mesic Aquic Hapludolls
Houghton-----	Euic, mesic Typic Haplosaprists
Jasper-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
*Jasper-----	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
Juneau-----	Coarse-silty, mixed, superactive, nonacid, mesic Typic Udifluvents
Kane-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Aquic Argiudolls
Kaneville-----	Fine-silty, mixed, superactive, mesic Mollic 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

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Kishwaukee-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
La Hogue-----	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Lahoguess-----	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Lamartine-----	Fine-silty, mixed, superactive, mesic Aquollic Hapludalfs
Lisbon-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Lismod-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Marshan-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Endoaquolls
Martinsville-----	Fine-loamy, mixed, active, mesic Typic Hapludalfs
McHenry-----	Fine-loamy, mixed, superactive, mesic Typic Hapludalfs
Millbrook-----	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Millington-----	Fine-loamy, mixed, superactive, calcareous, mesic Cumulic Endoaquolls
Muscatune-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
NewGlarus-----	Fine-silty over clayey, mixed, superactive, mesic Typic Hapludalfs
Ockley-----	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Odell-----	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Ogle-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Orion-----	Coarse-silty, mixed, superactive, nonacid, mesic Aquic Udifluvents
Orthents, loamy-----	Fine-loamy, mixed, active, nonacid, mesic Oxyaquic Udorthents
Oscos-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Palms-----	Loamy, mixed, euic, mesic Terric Haplosaprists
Parmod-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
*Parmod-----	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
Parr-----	Fine-loamy, mixed, active, mesic Oxyaquic Argiudolls
*Parr-----	Fine-loamy, mixed, active, mesic Mollic Oxyaquic Hapludalfs
Pecatonica-----	Fine-loamy, mixed, superactive, mesic Typic Hapludalfs
Pella-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Piscasaw-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Plano-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Plano-----	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Proctor-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Psamments-----	Mixed, mesic Udipsamments
Ringwood-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
*Ringwood-----	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
Rockton-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Rodman-----	Sandy-skeletal, mixed, mesic Typic Hapludolls
Rozetta-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Rush-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Sable-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
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
St. Charles-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Stronghurst-----	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Thorp-----	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Torox-----	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
Troxel-----	Fine-silty, mixed, superactive, mesic Pachic Argiudolls
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
*Warsaw-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Mollic Hapludalfs
Waupecan-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Westville-----	Fine-loamy, mixed, superactive, mesic Typic Hapludalfs
Whalan-----	Fine-loamy, mixed, superactive, mesic Typic Hapludalfs
Will-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Endoaquolls
Windere-----	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Winnabago-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
*Winnabago-----	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
21B	Pecatonica silt loam, 2 to 5 percent slopes-----	7,798	4.3
21C2	Pecatonica silt loam, 5 to 10 percent slopes, eroded-----	4,629	2.6
22B	Westville silt loam, 2 to 5 percent slopes-----	42	*
22C2	Westville silt loam, 5 to 10 percent slopes, eroded-----	563	0.3
22D2	Westville silt loam, 10 to 18 percent slopes, eroded-----	359	0.2
51A	Muscataune silt loam, 0 to 2 percent slopes-----	924	0.5
59A	Lisbon silt loam, 0 to 2 percent slopes-----	2,902	1.6
61A	Atterberry silt loam, 0 to 2 percent slopes-----	2,882	1.6
62A	Herbert silt loam, 0 to 2 percent slopes-----	874	0.5
68A	Sable silty clay loam, 0 to 2 percent slopes-----	8,362	4.6
68A+	Sable silt loam, 0 to 2 percent slopes, overwash-----	206	0.1
86A	Osco silt loam, 0 to 2 percent slopes-----	73	*
86B	Osco silt loam, 2 to 5 percent slopes-----	116	*
87A	Dickinson sandy loam, 0 to 2 percent slopes-----	134	*
100A	Palms muck, 0 to 2 percent slopes-----	426	0.2
102A	La Hogue loam, 0 to 2 percent slopes-----	1,603	0.9
103A	Houghton muck, 0 to 2 percent slopes-----	335	0.2
104A	Virgil silt loam, 0 to 2 percent slopes-----	3,150	1.7
119B	Elco silt loam, 2 to 5 percent slopes-----	160	*
125A	Selma loam, 0 to 2 percent slopes-----	3,666	2.0
134A	Camden silt loam, 0 to 2 percent slopes-----	201	0.1
146A	Elliott silt loam, 0 to 2 percent slopes-----	146	*
148A	Proctor silt loam, 0 to 2 percent slopes-----	9	*
148B	Proctor silt loam, 2 to 5 percent slopes-----	165	*
149A	Brenton silt loam, 0 to 2 percent slopes-----	50	*
152A	Drummer silty clay loam, 0 to 2 percent slopes-----	14,561	8.1
152A+	Drummer silt loam, 0 to 2 percent slopes, overwash-----	203	0.1
153A	Pella silty clay loam, 0 to 2 percent slopes-----	1,370	0.8
172A	Hoopeston sandy loam, 0 to 2 percent slopes-----	144	*
188A	Beardstown loam, 0 to 2 percent slopes-----	1,194	0.7
197A	Troxel silt loam, 0 to 2 percent slopes-----	614	0.3
198A	Elburn silt loam, 0 to 2 percent slopes-----	3,861	2.1
199A	Plano silt loam, 0 to 2 percent slopes-----	1,525	0.8
199B	Plano silt loam, 2 to 5 percent slopes-----	2,319	1.3
199C2	Plano silt loam, 5 to 10 percent slopes, eroded-----	72	*
206A	Thorp silt loam, 0 to 2 percent slopes-----	1	*
219A	Millbrook silt loam, 0 to 2 percent slopes-----	110	*
221B	Parr silt loam, 2 to 5 percent slopes-----	6,734	3.7
221C2	Parr silt loam, 5 to 10 percent slopes, eroded-----	1,239	0.7
223B	Varna silt loam, 2 to 4 percent slopes-----	908	0.5
227B	Argyle silt loam, 2 to 5 percent slopes-----	577	0.3
242A	Kendall silt loam, 0 to 2 percent slopes-----	7,504	4.2
243A	St. Charles silt loam, 0 to 2 percent slopes-----	2,689	1.5
243B	St. Charles silt loam, 2 to 5 percent slopes-----	4,430	2.5
243C2	St. Charles silt loam, 5 to 10 percent slopes, eroded-----	243	0.1
278A	Stronghurst silt loam, 0 to 2 percent slopes-----	3,116	1.7
279A	Rozetta silt loam, 0 to 2 percent slopes-----	2,035	1.1
280B	Fayette silt loam, 2 to 5 percent slopes-----	1,042	0.6
280C2	Fayette silt loam, 5 to 10 percent slopes, eroded-----	49	*
290A	Warsaw loam, 0 to 2 percent slopes-----	1,049	0.6
290B	Warsaw loam, 2 to 4 percent slopes-----	273	0.2
290C2	Warsaw loam, 4 to 6 percent slopes, eroded-----	258	0.1
290D2	Warsaw loam, 6 to 12 percent slopes, eroded-----	51	*
293A	Andres silt loam, 0 to 2 percent slopes-----	63	*
297B	Ringwood silt loam, 2 to 4 percent slopes-----	304	0.2
297C2	Ringwood silt loam, 4 to 6 percent slopes, eroded-----	432	0.2
297D2	Ringwood silt loam, 6 to 12 percent slopes, eroded-----	169	*
310B	McHenry silt loam, 2 to 4 percent slopes-----	1,151	0.6
310C2	McHenry silt loam, 4 to 6 percent slopes, eroded-----	1,135	0.6
310D2	McHenry silt loam, 6 to 12 percent slopes, eroded-----	579	0.3
325B	Dresden silt loam, 2 to 4 percent slopes-----	62	*
325C2	Dresden silt loam, 4 to 6 percent slopes, eroded-----	12	*

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
327B	Fox silt loam, 2 to 4 percent slopes-----	95	*
327C2	Fox silt loam, 4 to 6 percent slopes, eroded-----	127	*
327D2	Fox loam, 6 to 12 percent slopes, eroded-----	148	*
329A	Will loam, 0 to 2 percent slopes-----	1,118	0.6
332A	Billett sandy loam, 0 to 2 percent slopes-----	88	*
332B	Billett sandy loam, 2 to 5 percent slopes-----	367	0.2
343A	Kane silt loam, 0 to 2 percent slopes-----	559	0.3
344A	Harvard silt loam, 0 to 2 percent slopes-----	38	*
344B	Harvard silt loam, 2 to 5 percent slopes-----	40	*
354A	Hononegah loamy coarse sand, 0 to 2 percent slopes-----	606	0.3
354B	Hononegah loamy coarse sand, 2 to 6 percent slopes-----	124	*
361B	Kidder loam, 2 to 4 percent slopes-----	362	0.2
361C2	Kidder loam, 4 to 6 percent slopes, eroded-----	1,191	0.7
361D2	Kidder loam, 6 to 12 percent slopes, eroded-----	2,562	1.4
361D3	Kidder clay loam, 6 to 12 percent slopes, severely eroded-----	252	0.1
361E2	Kidder loam, 12 to 20 percent slopes, eroded-----	92	*
363C2	Griswold loam, 4 to 6 percent slopes, eroded-----	178	*
363D2	Griswold loam, 6 to 12 percent slopes, eroded-----	363	0.2
369A	Waupecan silt loam, 0 to 2 percent slopes-----	5,467	3.0
379A	Dakota loam, 0 to 2 percent slopes-----	3,771	2.1
387A	Ockley silt loam, 0 to 2 percent slopes-----	877	0.5
387B	Ockley silt loam, 2 to 5 percent slopes-----	250	0.1
403E	Elizabeth silt loam, 12 to 35 percent slopes-----	51	*
412B	Ogle silt loam, 2 to 5 percent slopes-----	1,769	1.0
419A	Flagg silt loam, 0 to 2 percent slopes-----	1,976	1.1
419B	Flagg silt loam, 2 to 5 percent slopes-----	7,956	4.4
419C2	Flagg silt loam, 5 to 10 percent slopes, eroded-----	747	0.4
440A	Jasper silt loam, 0 to 2 percent slopes-----	1,415	0.8
440B	Jasper silt loam, 2 to 5 percent slopes-----	2,605	1.4
440C2	Jasper silt loam, 5 to 10 percent slopes, eroded-----	323	0.2
490A	Odell silt loam, 0 to 2 percent slopes-----	4,053	2.2
503B	Rockton silt loam, 2 to 6 percent slopes-----	1	*
505D2	Dunbarton silt loam, 6 to 12 percent slopes, eroded-----	8	*
505E2	Dunbarton silt loam, 12 to 20 percent slopes, eroded-----	15	*
506B	Hitt silt loam, 2 to 5 percent slopes-----	90	*
512A	Danabrook silt loam, 0 to 2 percent slopes-----	4	*
512B	Danabrook silt loam, 2 to 5 percent slopes-----	2,245	1.2
512C2	Danabrook silt loam, 5 to 10 percent slopes, eroded-----	134	*
523A	Dunham silty clay loam, 0 to 2 percent slopes-----	203	0.1
526A	Grundelein silt loam, 0 to 2 percent slopes-----	6	*
527B	Kidami silt loam, 2 to 4 percent slopes-----	2,178	1.2
527C2	Kidami loam, 4 to 6 percent slopes, eroded-----	293	0.2
527D2	Kidami loam, 6 to 12 percent slopes, eroded-----	132	*
528A	Lahoguess loam, 0 to 2 percent slopes-----	926	0.5
529A	Selmas loam, 0 to 2 percent slopes-----	2,950	1.6
543B	Piscasaw silt loam, 2 to 4 percent slopes-----	659	0.4
544A	Torox silt loam, 0 to 2 percent slopes-----	11	*
545A	Windere silt loam, 0 to 2 percent slopes-----	8	*
545B	Windere silt loam, 2 to 4 percent slopes-----	99	*
561B	Whalan and NewGlarus silt loams, 2 to 5 percent slopes-----	26	*
561C2	Whalan and NewGlarus silt loams, 5 to 10 percent slopes, eroded-----	66	*
561D2	Whalan and NewGlarus silt loams, 10 to 15 percent slopes, eroded-----	62	*
566B	Rockton and Dodgeville soils, 2 to 5 percent slopes-----	141	*
566C2	Rockton and Dodgeville soils, 5 to 10 percent slopes, eroded-----	156	*
566D2	Rockton and Dodgeville soils, 10 to 15 percent slopes, eroded-----	27	*
570A	Martinsville silt loam, 0 to 2 percent slopes-----	385	0.2
570B	Martinsville silt loam, 2 to 4 percent slopes-----	1,421	0.8
570C2	Martinsville silt loam, 4 to 6 percent slopes, eroded-----	305	0.2
570D2	Martinsville silt loam, 6 to 12 percent slopes, eroded-----	121	*
618B	Senachwine silt loam, 2 to 5 percent slopes-----	52	*
623A	Kishwaukee silt loam, 0 to 2 percent slopes-----	1,030	0.6
623B	Kishwaukee silt loam, 2 to 5 percent slopes-----	216	0.1

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
624B	Caprell silt loam, 2 to 4 percent slopes-----	2,214	1.2
624C2	Caprell silt loam, 4 to 6 percent slopes, eroded-----	711	0.4
624D2	Caprell silt loam, 6 to 12 percent slopes, eroded-----	252	0.1
624E	Caprell silt loam, 12 to 20 percent slopes-----	1	*
625B	Geryune silt loam, 2 to 5 percent slopes-----	2,131	1.2
626A	Kish loam, 0 to 2 percent slopes-----	6	*
635A	Lismod silt loam, 0 to 2 percent slopes-----	805	0.4
635B	Lismod silt loam, 2 to 4 percent slopes-----	2	*
636B	Parmod silt loam, 2 to 5 percent slopes-----	1,681	0.9
636C2	Parmod silt loam, 5 to 10 percent slopes, eroded-----	265	0.1
667C2	Kaneville silt loam, 5 to 10 percent slopes, eroded-----	4	*
675A	Greenbush silt loam, 0 to 2 percent slopes-----	436	0.2
675B	Greenbush silt loam, 2 to 5 percent slopes-----	405	0.2
728B	Winnebago silt loam, 2 to 5 percent slopes-----	140	*
728C2	Winnebago silt loam, 5 to 10 percent slopes, eroded-----	132	*
766A	Lamartine silt loam, 0 to 2 percent slopes-----	927	0.5
768C	Backbone loamy sand, 5 to 10 percent slopes-----	23	*
771A	Hayfield loam, 0 to 2 percent slopes-----	559	0.3
772A	Marshan loam, 0 to 2 percent slopes-----	741	0.4
777A	Adrian muck, 0 to 2 percent slopes-----	148	*
779B	Chelsea loamy fine sand, 1 to 6 percent slopes-----	16	*
779D	Chelsea loamy fine sand, 6 to 12 percent slopes-----	29	*
780B	Grellton sandy loam, 2 to 5 percent slopes-----	135	*
780C2	Grellton sandy loam, 5 to 10 percent slopes, eroded-----	57	*
781A	Friesland sandy loam, 0 to 2 percent slopes-----	110	*
781B	Friesland sandy loam, 2 to 5 percent slopes-----	103	*
782A	Juneau silt loam, 0 to 2 percent slopes-----	232	0.1
783A	Flagler sandy loam, 0 to 2 percent slopes-----	408	0.2
783B	Flagler sandy loam, 2 to 6 percent slopes-----	80	*
791A	Rush silt loam, 0 to 2 percent slopes-----	254	0.1
802B	Orthents, loamy, undulating-----	852	0.5
864	Pits, quarry-----	176	*
865	Pits, gravel-----	291	0.2
939C2	Rodman-Warsaw complex, 4 to 6 percent slopes, eroded-----	253	0.1
939D2	Rodman-Warsaw complex, 6 to 12 percent slopes, eroded-----	391	0.2
969E2	Casco-Rodman complex, 12 to 20 percent slopes, eroded-----	169	*
1082A	Millington silt loam, undrained, 0 to 2 percent slopes, occasionally flooded	10	*
1100A	Palms muck, undrained, 0 to 2 percent slopes, frequently flooded-----	175	*
1103A	Houghton muck, undrained, 0 to 2 percent slopes, frequently flooded-----	276	0.2
1776A	Comfrey loams, undrained, 0 to 2 percent slopes, commonly flooded-----	228	0.1
1777A	Adrian muck, undrained, 0 to 2 percent slopes, frequently flooded-----	343	0.2
3082A	Millington silt loam, 0 to 2 percent slopes, frequently flooded-----	1,258	0.7
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded-----	515	0.3
3415A	Orion silt loam, 0 to 2 percent slopes, frequently flooded-----	1,249	0.7
3776A	Comfrey loam, 0 to 2 percent slopes, frequently flooded-----	3,182	1.8
3800A	Psamments, 0 to 2 percent slopes, frequently flooded-----	839	0.5
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded-----	62	*
8776A	Comfrey loam, 0 to 2 percent slopes, occasionally flooded-----	710	0.4
8782A	Juneau silt loam, 0 to 2 percent slopes, occasionally flooded-----	172	*
9061A	Atterberry silt loam, terrace, 0 to 2 percent slopes-----	39	*
9068A	Sable silty clay loam, terrace, 0 to 2 percent slopes-----	43	*
9278A	Stronghurst silt loam, terrace, 0 to 2 percent slopes-----	19	*
W	Water-----	838	0.5
	Total-----	180,490	100.0

\* Less than 0.1 percent.

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland

(See text for a description of the limitations and hazards listed in this table. Only the soils that are generally available for use as cropland or pastureland are listed. Absence of an entry indicates that the soil is generally not suited to use as cropland or pastureland)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
21B: Pecatonica-----	Crusting, water erosion	Low pH, water erosion
21C2: Pecatonica-----	Crusting, water erosion	Low pH, water erosion
22B: Westville-----	Crusting, water erosion	Low pH, water erosion
22C2: Westville-----	Crusting, water erosion	Low pH, water erosion
22D2: Westville-----	Crusting, water erosion	Low pH, water erosion
51A: Muscatune-----	Wetness	Wetness
59A: Lisbon-----	Wetness, high pH	Wetness, high pH
61A: Atterberry-----	Wetness, crusting	Wetness, low pH
62A: Herbert-----	Wetness, high pH	Wetness, high pH
68A: Sable-----	Ponding, poor tilth	Ponding, frost heave, poor tilth
68A+: Sable-----	Ponding	Ponding, frost heave
86A: Osco-----	No major limitations	Low pH
86B: Osco-----	Water erosion	Low pH
87A: Dickinson-----	Excessive permeability	Low pH, excessive permeability
100A: Palms-----	Ponding, wind erosion, subsidence	Ponding, wind erosion, frost heave, low pH
102A: La Hogue-----	Wetness	Wetness, low pH
103A: Houghton-----	Ponding, wind erosion, subsidence	Ponding, low pH, wind erosion, frost heave
104A: Virgil-----	Wetness	Wetness, low pH

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
119B: Elco-----	Crusting, water erosion, restricted permeability	Low pH, water erosion
125A: Selma-----	Ponding	Ponding, frost heave
134A: Camden-----	Crusting	Low pH
146A: Elliott-----	Wetness, root-restrictive layer, restricted permeability	Wetness, root-restrictive layer
148A: Proctor-----	No major limitations	Low pH
148B: Proctor-----	Water erosion	Low pH, water erosion
149A: Brenton-----	Wetness	Wetness
152A: Drummer-----	Ponding, poor tilth	Ponding, frost heave, poor tilth
152A+: Drummer-----	Ponding	Ponding, frost heave
153A: Pella-----	Ponding, high pH, poor tilth	Ponding, high pH, frost heave, poor tilth
172A: Hoopeston-----	Wetness, excessive permeability	Wetness, low pH, excessive permeability
188A: Beardstown-----	Wetness	Wetness, low pH
197A: Troxel-----	No major limitations	No major limitations
198A: Elburn-----	Wetness	Wetness
199A: Plano-----	No major limitations	Low pH
199B: Plano-----	Water erosion	Low pH, water erosion
199C2: Plano-----	Water erosion	Low pH, water erosion
206A: Thorp-----	Ponding, restricted permeability	Ponding, low pH, frost heave

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
219A: Millbrook-----	Wetness	Wetness, low pH
221B: Parr-----	High pH, water erosion	High pH, water erosion
221C2: Parr-----	High pH, crusting, water erosion	High pH, water erosion
223B: Varna-----	Root-restrictive layer, high pH, restricted permeability, water erosion	Root-restrictive layer, high pH, water erosion
227B: Argyle-----	Water erosion	Low pH, water erosion
242A: Kendall-----	Wetness, crusting	Wetness, low pH
243A: St. Charles-----	Crusting	Low pH
243B: St. Charles-----	Crusting, water erosion	Low pH, water erosion
243C2: St. Charles-----	Crusting, water erosion	Low pH, water erosion
278A: Stronghurst-----	Wetness, crusting	Wetness, low pH
279A: Rozetta-----	Crusting	Low pH
280B: Fayette-----	Crusting, water erosion	Low pH, water erosion
280C2: Fayette-----	Crusting, water erosion	Low pH, water erosion
290A: Warsaw-----	High pH, excessive permeability	High pH, excessive permeability
290B: Warsaw-----	High pH, water erosion, excessive permeability	High pH, water erosion, excessive permeability
290C2: Warsaw-----	High pH, water erosion, excessive permeability	High pH, water erosion, excessive permeability
290D2: Warsaw-----	High pH, water erosion, excessive permeability	High pH, water erosion, excessive permeability
293A: Andres-----	Wetness	Wetness
297B: Ringwood-----	Water erosion	Water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
297C2: Ringwood-----	High pH, water erosion	High pH, water erosion
297D2: Ringwood-----	High pH, water erosion	High pH, water erosion
310B: McHenry-----	High pH, crusting, water erosion	High pH, water erosion
310C2: McHenry-----	High pH, crusting, water erosion	High pH, water erosion
310D2: McHenry-----	High pH, crusting, water erosion	High pH, water erosion
325B: Dresden-----	High pH, water erosion, excessive permeability	High pH, water erosion, excessive permeability
325C2: Dresden-----	High pH, crusting, water erosion, excessive permeability	High pH, water erosion, excessive permeability
327B: Fox-----	High pH, crusting, water erosion, excessive permeability	High pH, water erosion, excessive permeability
327C2: Fox-----	High pH, crusting, water erosion, excessive permeability	High pH, water erosion, excessive permeability
327D2: Fox-----	High pH, crusting, water erosion, excessive permeability	High pH, water erosion, excessive permeability
329A: Will-----	Ponding, high pH, limited available water capacity, excessive permeability	Ponding, high pH, limited available water capacity, frost heave, excessive permeability
332A: Billett-----	Excessive permeability	Low pH, excessive permeability
332B: Billett-----	Water erosion, excessive permeability	Low pH, water erosion, excessive permeability
343A: Kane-----	Wetness, high pH, excessive permeability	Wetness, high pH, excessive permeability
344A: Harvard-----	No major limitations	Low pH

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
344B: Harvard-----	Water erosion	Low pH, water erosion
354A: Hononegah-----	High pH, wind erosion, limited available water capacity, excessive permeability	High pH, wind erosion, limited available water capacity, excessive permeability
354B: Hononegah-----	High pH, wind erosion, limited available water capacity, excessive permeability	High pH, wind erosion, limited available water capacity, excessive permeability
361B: Kidder-----	High pH, crusting, water erosion	High pH, water erosion
361C2: Kidder-----	Crusting, water erosion	Water erosion
361D2: Kidder-----	High pH, crusting, water erosion	High pH, water erosion
361D3: Kidder-----	Poor tilth, high pH, crusting, water erosion	Poor tilth, high pH, water erosion, low fertility
361E2: Kidder-----	High pH, crusting, water erosion	Equipment limitation, high pH, water erosion
363C2: Griswold-----	High pH, water erosion	High pH, water erosion
363D2: Griswold-----	High pH, water erosion	High pH, water erosion
369A: Waupecan-----	Excessive permeability	Excessive permeability
379A: Dakota-----	Excessive permeability	Low pH, excessive permeability
387A: Ockley-----	Crusting, excessive permeability	Low pH, excessive permeability
387B: Ockley-----	Crusting, water erosion, excessive permeability	Low pH, water erosion, excessive permeability
403E: Elizabeth-----	---	Equipment limitation, depth to bedrock, water erosion, limited available water capacity
412B: Ogle-----	Water erosion	Low pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
419A: Flagg-----	Crusting	Low pH
419B: Flagg-----	Crusting, water erosion	Low pH, water erosion
419C2: Flagg-----	Crusting, water erosion	Low pH, water erosion
440A: Jasper-----	No major limitations	Low pH
440B: Jasper-----	Water erosion	Low pH, water erosion
440C2: Jasper-----	Water erosion	Low pH, water erosion
490A: Odell-----	Wetness	Wetness
503B: Rockton-----	Depth to bedrock, water erosion, restricted permeability	Depth to bedrock, water erosion
505D2: Dunbarton-----	Depth to bedrock, crusting, water erosion, limited available water capacity	Depth to bedrock, water erosion, limited available water capacity
505E2: Dunbarton-----	---	Equipment limitation, depth to bedrock, water erosion, limited available water capacity
506B: Hitt-----	Depth to bedrock, water erosion	Depth to bedrock, low pH, water erosion
512A: Danabrook-----	No major limitations	Low pH
512B: Danabrook-----	Water erosion	Low pH, water erosion
512C2: Danabrook-----	Water erosion	Low pH, water erosion
523A: Dunham-----	Ponding, excessive permeability, poor tilth	Ponding, frost heave, excessive permeability, poor tilth
526A: Grundelein-----	Wetness, high pH, excessive permeability	Wetness, high pH, excessive permeability
527B: Kidami-----	Crusting, water erosion	Low pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
527C2: Kidami-----	Crusting, water erosion	Low pH, water erosion
527D2: Kidami-----	High pH, crusting, water erosion	High pH, water erosion
528A: Lahoguess-----	Wetness, excessive permeability	Wetness, excessive permeability
529A: Selmass-----	Ponding, excessive permeability	Ponding, frost heave, excessive permeability
543B: Piscasaw-----	Crusting, water erosion	Low pH, water erosion
544A: Torox-----	Wetness, crusting	Wetness, low pH
545A: Windere-----	No major limitations	Low pH
545B: Windere-----	Water erosion	Low pH, water erosion
561B: Whalan-----	Depth to bedrock, crusting, water erosion, restricted, permeability	Depth to bedrock, low pH, water erosion
NewGlarus-----	Depth to bedrock, crusting, water erosion, restricted permeability	Depth to bedrock, water erosion
561C2: Whalan-----	Depth to bedrock, crusting, water erosion, restricted permeability	Depth to bedrock, low pH, water erosion
NewGlarus-----	Depth to bedrock, crusting, water erosion, restricted permeability	Depth to bedrock, water erosion
561D2: Whalan-----	Depth to bedrock, crusting, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, low pH, water erosion, limited available water capacity
NewGlarus-----	Depth to bedrock, crusting, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, water erosion, limited available water capacity
566B: Dodgeville-----	Depth to bedrock, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, low pH, water erosion, limited available water capacity

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
566B: Rockton-----	Depth to bedrock, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, water erosion, limited available water capacity
566C2: Dodgeville-----	Depth to bedrock, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, low pH, water erosion, limited available water capacity
Rockton-----	Depth to bedrock, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, water erosion, limited available water capacity
566D2: Dodgeville-----	Depth to bedrock, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, low pH, water erosion, limited available water capacity
Rockton-----	Depth to bedrock, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, water erosion, limited available water capacity
570A: Martinsville-----	No major limitations	Low pH
570B: Martinsville-----	Water erosion	Low pH, water erosion
570C2: Martinsville-----	Water erosion	Low pH, water erosion
570D2: Martinsville-----	Water erosion	Low pH, water erosion
618B: Senachwine-----	Crusting, water erosion	Low pH, water erosion
623A: Kishwaukee-----	Excessive permeability	Low pH, excessive permeability
623B: Kishwaukee-----	Water erosion, excessive permeability	Low pH, water erosion, excessive permeability
624B: Caprell-----	Crusting, water erosion	Low pH, water erosion
624C2: Caprell-----	Crusting, water erosion	Low pH, water erosion
624D2: Caprell-----	Crusting, water erosion	Low pH, water erosion
624E: Caprell-----	Crusting, water erosion	Equipment limitation, low pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
625B: Geryune-----	Water erosion	Low pH, water erosion
626A: Kish-----	Ponding, excess lime	Ponding, excess lime, frost heave
635A: Lismod-----	Wetness, high pH	Wetness, high pH
635B: Lismod-----	Wetness, high pH, water erosion	Wetness, high pH, water erosion
636B: Parmod-----	High pH, water erosion	High pH, water erosion
636C2: Parmod-----	High pH, crusting, water erosion	High pH, water erosion
667C2: Kaneville-----	Crusting, water erosion	Water erosion
675A: Greenbush-----	Crusting	Low pH
675B: Greenbush-----	Crusting, water erosion	Low pH, water erosion
728B: Winnebago-----	Water erosion	Low pH, water erosion
728C2: Winnebago-----	Crusting, water erosion	Low pH, water erosion
766A: Lamartine-----	Wetness, high pH	Wetness, high pH
768C: Backbone-----	Depth to bedrock, wind erosion, limited available water capacity, excessive permeability	Depth to bedrock, low pH, wind erosion, limited available water capacity, excessive permeability
771A: Hayfield-----	Wetness, excessive permeability	Wetness, low pH, excessive permeability
772A: Marshan-----	Ponding, excessive permeability	Ponding, frost heave, excessive permeability
777A: Adrian-----	Ponding, wind erosion, subsidence, excessive permeability	Ponding, low pH, wind erosion, frost heave, excessive permeability
779B: Chelsea-----	Wind erosion, excessive permeability	Low pH, wind erosion, low fertility, excessive permeability

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
779D: Chelsea-----	---	Low pH, wind erosion, low fertility, excessive permeability
780B: Grellton-----	Water erosion	Low pH, water erosion
780C2: Grellton-----	Water erosion	Low pH, water erosion
781A: Friesland-----	No major limitations	No major limitations
781B: Friesland-----	No major limitations	No major limitations
782A: Juneau-----	No major limitations	No major limitations
783A: Flagler-----	Limited available water capacity, excessive permeability	Low pH, limited available water capacity, excessive permeability
783B: Flagler-----	Limited available water capacity, excessive permeability	Low pH, limited available water capacity, excessive permeability
791A: Rush-----	Crusting, excessive permeability	Low pH, excessive permeability
802B: Orthents, loamy-----	Crusting, water erosion	Water erosion
939C2: Rodman-----	Excess lime, crusting, water erosion, limited available water capacity, excessive permeability	Water erosion, limited available water capacity, excess lime, excessive permeability
Warsaw-----	High pH, water erosion, excessive permeability	High pH, water erosion, excessive permeability
939D2: Rodman-----	Excess lime, crusting, water erosion, limited available water capacity, excessive permeability	Water erosion, limited available water capacity, excess lime, excessive permeability
Warsaw-----	High pH, water erosion, excessive permeability	High pH, water erosion, excessive permeability
969E2: Casco-----	---	Equipment limitation, high pH, water erosion, limited available water capacity, excessive permeability

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
969E2: Rodman-----	---	Equipment limitation, water erosion, limited available water capacity, excess lime, excessive permeability
1082A: Millington-----	---	---
1100A: Palms-----	---	---
1103A: Houghton-----	---	---
1776A: Comfrey, frequently flooded-----	---	---
Comfrey, occasionally flooded-----	---	---
1777A: Adrian-----	---	---
3082A: Millington-----	Flooding, ponding, excess lime	Flooding, ponding, excess lime, frost heave
3107A: Sawmill-----	Flooding, ponding, poor tilth	Flooding, ponding, frost heave, poor tilth
3415A: Orion-----	Flooding, wetness	Flooding, wetness
3776A: Comfrey-----	Flooding, ponding	Flooding, ponding, frost heave
3800A: Psamments-----	---	---
8082A: Millington-----	Flooding, ponding, excess lime	Flooding, ponding, excess lime, frost heave
8776A: Comfrey-----	Flooding, ponding	Flooding, ponding, frost heave
8782A: Juneau-----	Flooding	Flooding
9061A: Atterberry-----	Wetness, crusting	Wetness, low pH
9068A: Sable-----	Ponding, poor tilth	Ponding, frost heave, poor tilth

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
9278A: Stronghurst-----	Wetness, crusting	Wetness, low pH

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(The yields given for crops are those that can be expected under an optimum level of management, and the yields given for grass-legume pasture are those that can be expected under an average level of management. All yields are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
21B: Pecatonica-----	2e	138	44	53	68	4.00	5.90
21C2: Pecatonica-----	3e	129	41	50	64	3.79	5.50
22B: Westville-----	2e	136	45	53	66	3.69	5.40
22C2: Westville-----	3e	127	42	50	62	3.47	5.10
22D2: Westville-----	4e	119	39	47	58	3.25	4.70
51A: Muscatune-----	1	180	57	68	94	5.42	8.00
59A: Lisbon-----	1	173	55	68	90	5.10	7.50
61A: Atterberry-----	1	164	51	64	88	4.97	7.30
62A: Herbert-----	2w	161	51	61	82	4.80	7.00
68A: Sable-----	2w	171	56	66	88	5.15	7.50
68A+: Sable-----	2w	173	57	67	89	5.20	7.70
86A: Osco-----	1	172	54	68	92	6.22	9.20
86B: Osco-----	2e	170	53	67	91	6.16	9.00
87A: Dickinson-----	3s	128	42	51	67	3.00	4.50
100A: Palms-----	3w	145	46	---	---	---	5.70
102A: La Hogue-----	1	146	47	64	72	4.80	7.00
103A: Houghton-----	3w	158	52	---	---	---	7.00
104A: Virgil-----	1	164	50	63	87	5.00	7.30

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
119B: Elco-----	2e	135	45	52	67	3.80	5.60
125A: Selma-----	2w	157	51	62	80	4.80	7.00
134A: Camden-----	1	149	46	58	78	4.30	6.30
146A: Elliott-----	2w	151	50	61	78	4.50	6.70
148A: Proctor-----	1	166	52	63	89	5.80	8.40
148B: Proctor-----	2e	164	51	62	88	5.70	8.40
149A: Brenton-----	1	176	54	67	95	5.10	7.50
152A: Drummer-----	2w	173	56	65	89	5.04	7.40
152A+: Drummer-----	2w	175	57	66	90	5.10	7.50
153A: Pella-----	2w	165	54	63	82	4.80	7.00
172A: Hoopeston-----	2s	132	43	53	66	4.30	6.30
188A: Beardstown-----	2w	137	45	57	70	4.41	6.50
197A: Troxel-----	1	172	54	66	90	6.20	9.20
198A: Elburn-----	1	178	55	67	85	5.20	7.67
199A: Plano-----	1	175	54	67	93	6.33	9.30
199B: Plano-----	2e	173	53	66	92	6.27	9.10
199C2: Plano-----	3e	163	50	62	87	5.89	8.60
206A: Thorp-----	2w	153	50	60	79	4.60	6.80
219A: Millbrook-----	2w	159	50	62	84	4.80	7.00
221B: Parr-----	2e	143	47	57	60	4.90	7.10

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
221C2: Parr-----	3e	134	44	54	57	4.60	6.60
223B: Varna-----	2e	141	45	57	70	4.40	6.40
227B: Argyle-----	2e	147	48	58	75	4.47	6.60
242A: Kendall-----	2w	155	48	60	80	4.75	7.00
243A: St. Charles-----	1	151	47	59	78	4.63	6.80
243B: St. Charles-----	2e	149	47	58	77	4.58	6.80
243C2: St. Charles-----	3e	140	44	55	73	4.31	6.30
278A: Stronghurst-----	2w	154	48	60	78	4.80	7.00
279A: Rozetta-----	1	148	46	59	76	4.75	7.00
280B: Fayette-----	2e	149	47	59	76	4.70	6.90
280C2: Fayette-----	3e	140	44	56	72	4.42	6.40
290A: Warsaw-----	2s	145	46	58	73	4.60	6.80
290B: Warsaw-----	2e	144	46	57	72	4.60	6.80
290C2: Warsaw-----	2e	136	43	55	69	4.30	6.40
290D2: Warsaw-----	3e	133	42	53	67	4.20	6.20
293A: Andres-----	1	166	53	64	87	4.90	7.20
297B: Ringwood-----	2e	156	50	61	81	5.00	7.40
297C2: Ringwood-----	2e	149	48	58	77	4.80	7.10
297D2: Ringwood-----	3e	145	47	57	75	4.70	6.80
310B: McHenry-----	2e	140	45	54	69	3.80	5.60

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
310C2: McHenry-----	2e	133	42	52	66	3.60	5.30
310D2: McHenry-----	3e	130	41	51	64	3.50	5.10
325B: Dresden-----	2e	141	46	54	72	3.70	5.40
325C2: Dresden-----	2e	133	43	52	69	3.50	5.20
327B: Fox-----	2e	133	43	52	65	3.20	4.60
327C2: Fox-----	2e	126	40	50	62	3.00	4.40
327D2: Fox-----	3e	123	40	49	61	2.90	4.20
329A: Will-----	2w	157	52	61	79	4.40	6.50
332A: Billett-----	3s	121	40	49	58	2.70	4.00
332B: Billett-----	3s	120	40	49	57	2.68	4.00
343A: Kane-----	2s	152	49	61	78	4.40	6.50
344A: Harvard-----	1	154	48	60	79	5.00	7.30
344B: Harvard-----	2e	152	48	59	78	5.00	7.30
354A: Hononegah-----	4s	103	33	42	51	3.20	4.70
354B: Hononegah-----	4s	101	33	41	50	3.20	4.60
361B: Kidder-----	2e	123	41	50	57	3.20	4.60
361C2: Kidder-----	2e	117	39	48	55	3.00	4.40
361D2: Kidder-----	3e	114	38	47	53	2.90	4.20
361D3: Kidder-----	4e	105	35	43	49	2.70	3.80
361E2: Kidder-----	4e	104	34	43	49	2.70	3.80

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
363C2: Griswold-----	3e	133	44	55	65	4.00	6.00
363D2: Griswold-----	3e	130	43	53	63	4.00	5.70
369A: Waupecan-----	1	170	53	67	92	6.20	9.20
379A: Dakota-----	2s	135	45	55	67	4.00	5.80
387A: Ockley-----	1	140	45	55	71	4.86	7.20
387B: Ockley-----	2e	139	45	54	70	4.81	7.10
403E: Elizabeth-----	7s	---	---	---	---	---	3.30
412B: Ogle-----	2e	157	50	62	85	5.26	7.70
419A: Flagg-----	1	146	47	57	75	4.52	6.70
419B: Flagg-----	2e	145	47	56	74	4.47	6.70
419C2: Flagg-----	3e	136	44	53	70	4.20	6.10
440A: Jasper-----	1	158	51	64	85	5.20	7.70
440B: Jasper-----	2e	156	50	63	84	5.15	7.60
440C2: Jasper-----	3e	147	47	60	79	4.84	7.10
490A: Odell-----	1	158	51	61	81	4.60	6.80
503B: Rockton-----	2e	120	41	52	67	3.50	5.10
505D2: Dunbarton-----	4e	76	26	31	39	2.40	4.20
505E2: Dunbarton-----	6e	---	---	---	---	2.20	3.80
506B: Hitt-----	2e	141	47	56	74	4.14	6.10
512A: Danabrook-----	1	168	53	66	90	5.80	8.50

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
512B: Danabrook-----	2e	166	52	65	89	5.70	8.40
512C2: Danabrook-----	3e	156	49	61	84	5.40	7.80
523A: Dunham-----	2w	160	52	62	81	4.80	7.00
526A: Grundelein-----	1	168	55	64	88	4.80	7.00
527B: Kidami-----	2e	141	45	52	68	4.10	5.90
527C2: Kidami-----	2e	133	42	50	65	3.90	5.60
527D2: Kidami-----	3e	131	41	49	63	3.80	5.40
528A: Lahoguess-----	1	153	50	59	79	4.60	6.80
529A: Selmass-----	2w	147	48	58	76	4.60	6.80
543B: Piscasaw-----	2e	150	47	57	77	4.20	6.10
544A: Torox-----	1	152	48	57	78	4.40	6.50
545A: Windere-----	1	156	49	60	81	4.60	6.80
545B: Windere-----	2e	154	49	59	80	4.60	6.80
561B: Whalan and NewGlarus	2e	117	38	47	60	2.95	4.80
561C2: Whalan and NewGlarus	3e	110	35	44	57	2.77	4.40
561D2: Whalan and NewGlarus	4e	105	34	42	54	2.65	4.20
566B: Rockton and Dodgeville-----	2e	121	42	53	65	3.51	5.30
566C2: Rockton and Dodgeville-----	3e	113	39	50	61	3.30	4.90
566D2: Rockton and Dodgeville-----	4e	109	37	48	59	3.16	4.60

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
570A: Martinsville-----	1	140	44	57	68	4.10	6.00
570B: Martinsville-----	2e	139	44	56	67	4.10	5.90
570C2: Martinsville-----	2e	132	41	54	64	3.90	5.60
570D2: Martinsville-----	3e	129	40	52	63	3.80	5.40
618B: Senachwine-----	2e	131	43	52	62	3.13	4.60
623A: Kishwaukee-----	1	164	52	64	87	5.99	8.80
623B: Kishwaukee-----	2e	162	51	63	86	5.93	8.70
624B: Caprell-----	2e	139	45	54	70	3.70	5.80
624C2: Caprell-----	2e	132	42	52	67	3.50	5.50
624D2: Caprell-----	3e	129	41	51	65	3.40	5.30
624E: Caprell-----	4e	125	40	49	63	3.30	5.10
625B: Geryune-----	2e	165	52	63	88	5.70	8.40
626A: Kish-----	2w	153	48	59	76	4.60	6.80
635A: Lismod-----	1	169	54	66	90	5.00	7.30
635B: Lismod-----	2e	167	53	65	89	5.00	7.30
636B: Parmod-----	2e	150	48	58	77	5.00	7.40
636C2: Parmod-----	3e	141	45	55	73	4.70	6.90
667C2: Kaneville-----	3e	150	46	57	79	4.80	6.90
675A: Greenbush-----	1	166	52	63	87	4.86	7.20
675B: Greenbush-----	2e	164	51	62	86	4.81	7.10

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
728B: Winnebago-----	2e	147	48	59	75	4.25	6.30
728C2: Winnebago-----	3e	138	45	56	71	3.99	5.80
766A: Lamartine-----	1	158	50	59	81	4.70	6.80
768C: Backbone-----	4s	100	34	42	48	3.18	4.60
771A: Hayfield-----	2s	137	45	53	67	4.29	6.30
772A: Marshan-----	2w	150	50	58	73	4.29	6.30
777A: Adrian-----	3w	132	44	---	---	---	5.80
779B: Chelsea-----	4s	94	29	42	49	3.20	4.70
779D: Chelsea-----	6s	---	---	---	---	3.18	4.60
780B: Grellton-----	2e	127	42	52	65	3.25	4.80
780C2: Grellton-----	3e	119	39	49	61	3.05	4.40
781A: Friesland-----	1	143	47	58	72	4.41	6.50
781B: Friesland-----	2e	142	47	57	71	4.37	6.40
782A: Juneau-----	1	163	49	61	85	5.20	7.67
783A: Flagler-----	3s	116	39	46	54	2.60	3.80
783B: Flagler-----	3e	115	39	46	53	2.57	3.80
791A: Rush-----	1	159	49	61	82	5.50	8.20
802B: Orthents, loamy----	2e	93	32	35	55	3.70	4.70
864. Pits, quarry							
865. Pits, gravel							

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
939C2----- Rodman----- Warsaw-----	4s 2e	104	37	41	50	3.51	5.10
939D2----- Rodman----- Warsaw-----	4s 3e	99	35	40	48	3.44	5.00
969E2----- Casco----- Rodman-----	6e 6s	---	---	---	---	2.40	3.50
1082A: Millington-----	5w	---	---	---	---	---	---
1100A: Palms-----	5w	---	---	---	---	---	---
1103A: Houghton-----	5w	---	---	---	---	---	---
1776A: Comfrey soils-----	5w	---	---	---	---	---	---
1777A: Adrian-----	5w	---	---	---	---	---	---
3082A: Millington-----	3w	139	44	---	64	4.10	6.20
3107A: Sawmill-----	3w	153	49	---	---	4.68	6.90
3415A: Orion-----	3w	146	46	---	72	4.07	6.00
3776A: Comfrey-----	3w	149	50	---	72	4.50	6.60
3800A: Psammets-----	4s	---	---	---	---	---	---
8082A: Millington-----	2w	154	49	59	71	4.60	6.80
8776A: Comfrey-----	2w	166	55	62	80	5.00	7.30
8782A: Juneau-----	2w	163	49	61	85	5.20	7.67
9061A: Atterberry-----	1	164	51	64	88	4.97	7.30
9068A: Sable-----	2w	173	57	67	89	5.20	7.70

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
9278A: Stronghurst-----	2w	154	48	60	78	4.75	7.00

\* Animal unit month: The amount of forage required to feed one mature cow, of approximately 1,000 pounds weight, with or without a calf, for 30 days.

Table 8.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
21B	Pecatonica silt loam, 2 to 5 percent slopes
22B	Westville silt loam, 2 to 5 percent slopes
51A	Muscataine silt loam, 0 to 2 percent slopes
59A	Lisbon silt loam, 0 to 2 percent slopes
61A	Atterberry silt loam, 0 to 2 percent slopes (where drained)
62A	Herbert silt loam, 0 to 2 percent slopes (where drained)
68A	Sable silty clay loam, 0 to 2 percent slopes (where drained)
68A+	Sable silt loam, 0 to 2 percent slopes, overwash (where drained)
86A	Osco silt loam, 0 to 2 percent slopes
86B	Osco silt loam, 2 to 5 percent slopes
87A	Dickinson sandy loam, 0 to 2 percent slopes
102A	La Hogue loam, 0 to 2 percent slopes
104A	Virgil silt loam, 0 to 2 percent slopes (where drained)
119B	Elco silt loam, 2 to 5 percent slopes
125A	Selma loam, 0 to 2 percent slopes (where drained)
134A	Camden silt loam, 0 to 2 percent slopes
146A	Elliott silt loam, 0 to 2 percent slopes
148A	Proctor silt loam, 0 to 2 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)
152A+	Drummer silt loam, 0 to 2 percent slopes, overwash (where drained)
153A	Pella silty clay loam, 0 to 2 percent slopes (where drained)
172A	Hoopeston sandy loam, 0 to 2 percent slopes
188A	Beardstown loam, 0 to 2 percent slopes (where drained)
197A	Troxel silt loam, 0 to 2 percent slopes
198A	Elburn silt loam, 0 to 2 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B	Plano silt loam, 2 to 5 percent slopes
206A	Thorp silt loam, 0 to 2 percent slopes (where drained)
219A	Millbrook silt loam, 0 to 2 percent slopes (where drained)
221B	Parr silt loam, 2 to 5 percent slopes
223B	Varna silt loam, 2 to 4 percent slopes
227B	Argyle silt loam, 2 to 5 percent slopes
242A	Kendall silt loam, 0 to 2 percent slopes (where drained)
243A	St. Charles silt loam, 0 to 2 percent slopes
243B	St. Charles silt loam, 2 to 5 percent slopes
278A	Stronghurst silt loam, 0 to 2 percent slopes (where drained)
279A	Rozetta silt loam, 0 to 2 percent slopes
280B	Fayette silt loam, 2 to 5 percent slopes
290A	Warsaw loam, 0 to 2 percent slopes
290B	Warsaw loam, 2 to 4 percent slopes
290C2	Warsaw loam, 4 to 6 percent slopes, eroded
293A	Andres silt loam, 0 to 2 percent slopes
297B	Ringwood silt loam, 2 to 4 percent slopes
297C2	Ringwood silt loam, 4 to 6 percent slopes, eroded
310B	McHenry silt loam, 2 to 4 percent slopes
310C2	McHenry silt loam, 4 to 6 percent slopes, eroded
325B	Dresden silt loam, 2 to 4 percent slopes
325C2	Dresden silt loam, 4 to 6 percent slopes, eroded
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)
332A	Billett sandy loam, 0 to 2 percent slopes
332B	Billett sandy loam, 2 to 5 percent slopes
343A	Kane silt loam, 0 to 2 percent slopes
344A	Harvard silt loam, 0 to 2 percent slopes

Table 8.--Prime Farmland--Continued

Map symbol	Soil name
344B	Harvard silt loam, 2 to 5 percent slopes
361B	Kidder loam, 2 to 4 percent slopes
361C2	Kidder loam, 4 to 6 percent slopes, eroded
363C2	Griswold loam, 4 to 6 percent slopes, eroded
369A	Waupecan silt loam, 0 to 2 percent slopes
379A	Dakota loam, 0 to 2 percent slopes
387A	Ockley silt loam, 0 to 2 percent slopes
387B	Ockley silt loam, 2 to 5 percent slopes
412B	Ogle silt loam, 2 to 5 percent slopes
419A	Flagg silt loam, 0 to 2 percent slopes
419B	Flagg silt loam, 2 to 5 percent slopes
440A	Jasper silt loam, 0 to 2 percent slopes
440B	Jasper silt loam, 2 to 5 percent slopes
490A	Odell silt loam, 0 to 2 percent slopes
503B	Rockton silt loam, 2 to 6 percent slopes
506B	Hitt silt loam, 2 to 5 percent slopes
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
528A	Lahoguess loam, 0 to 2 percent slopes
529A	Selmass loam, 0 to 2 percent slopes (where drained)
543B	Piscasaw silt loam, 2 to 4 percent slopes
544A	Torox silt loam, 0 to 2 percent slopes
545A	Windere silt loam, 0 to 2 percent slopes
545B	Windere silt loam, 2 to 4 percent slopes
561B	Whalan and NewGlarus silt loams, 2 to 5 percent slopes
566B	Rockton and Dodgeville soils, 2 to 5 percent slopes
570A	Martinsville silt loam, 0 to 2 percent slopes
570B	Martinsville silt loam, 2 to 4 percent slopes
570C2	Martinsville silt loam, 4 to 6 percent slopes, eroded
618B	Senachwine silt loam, 2 to 5 percent slopes
623A	Kishwaukee silt loam, 0 to 2 percent slopes
623B	Kishwaukee silt loam, 2 to 5 percent slopes
624B	Caprell silt loam, 2 to 4 percent slopes
624C2	Caprell silt loam, 4 to 6 percent slopes, eroded
625B	Geryune silt loam, 2 to 5 percent slopes
626A	Kish loam, 0 to 2 percent slopes (where drained)
635A	Lismod silt loam, 0 to 2 percent slopes
635B	Lismod silt loam, 2 to 4 percent slopes
636B	Parmod silt loam, 2 to 5 percent slopes
675A	Greenbush silt loam, 0 to 2 percent slopes
675B	Greenbush silt loam, 2 to 5 percent slopes
728B	Winnebago silt loam, 2 to 5 percent slopes
766A	Lamartine silt loam, 0 to 2 percent slopes (where drained)
771A	Hayfield loam, 0 to 2 percent slopes
772A	Marshan loam, 0 to 2 percent slopes (where drained)
780B	Grellton sandy loam, 2 to 5 percent slopes
781A	Friesland sandy loam, 0 to 2 percent slopes
781B	Friesland sandy loam, 2 to 5 percent slopes
782A	Juneau silt loam, 0 to 2 percent slopes
783A	Flagler sandy loam, 0 to 2 percent slopes
783B	Flagler sandy loam, 2 to 6 percent slopes
791A	Rush silt loam, 0 to 2 percent slopes
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)
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3415A	Orion silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)

Table 8.--Prime Farmland--Continued

Map symbol	Soil name
3776A	Comfrey loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8776A	Comfrey loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8782A	Juneau silt loam, 0 to 2 percent slopes, occasionally flooded
9061A	Atterberry silt loam, terrace, 0 to 2 percent slopes (where drained)
9068A	Sable silty clay loam, terrace, 0 to 2 percent slopes (where drained)
9278A	Stronghurst silt loam, terrace, 0 to 2 percent slopes (where drained)

Table 9.--Hydric Soils

(Only those map units that have hydric components are listed. See text for a description of hydric qualities and definitions of the hydric criteria codes)

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
51A: Muscatune silt loam, 0 to 2 percent slopes	Muscatune Drummer Sable	Not hydric Hydric Hydric	ground moraine outwash plain ground moraine	--- 2B3 2B3
59A: Lisbon silt loam, 0 to 2 percent slopes	Lisbon Drummer	Not hydric Hydric	ground moraine, end moraine outwash plain, ground moraine	--- 2B3
61A: Atterberry silt loam, 0 to 2 percent slopes	Atterberry Sable	Not hydric Hydric	ground moraine ground moraine	--- 2B3
62A: Herbert silt loam, 0 to 2 percent slopes	Herbert Drummer	Not hydric Hydric	ground moraine, end moraine outwash plain, ground moraine	--- 2B3
68A: Sable silty clay loam, 0 to 2 percent slopes	Sable	Hydric	ground moraine	2B3
68A+: Sable silt loam, 0 to 2 percent slopes, overwash	Sable	Hydric	ground moraine	2B3
86A: Osco silt loam, 0 to 2 percent slopes	Osco Sable	Not hydric Hydric	ground moraine ground moraine	--- 2B3
86B: Osco silt loam, 2 to 5 percent slopes	Osco Sable	Not hydric Hydric	ground moraine ground moraine	--- 2B3
87A: Dickinson sandy loam, 0 to 2 percent slopes	Dickinson Selmass	Not hydric Hydric	outwash plain, stream terrace outwash plain, stream terrace	--- 2B3
100A: Palms muck, 0 to 2 percent slopes	Palms	Hydric	end moraine, ground moraine, outwash plain	1,2B3
102A: La Hogue loam, 0 to 2 percent slopes	La Hogue Selma	Not hydric Hydric	outwash plain, stream terrace outwash plain, stream terrace	--- 2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
103A: Houghton muck, 0 to 2 percent slopes	Houghton	Hydric	ground moraine, outwash plain, end moraine	1,2B3
104A: Virgil silt loam, 0 to 2 percent slopes	Virgil	Not hydric	outwash plain, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
125A: Selma loam, 0 to 2 percent slopes	Selma	Hydric	outwash plain, stream terrace	2B3
134A: Camden silt loam, 0 to 2 percent slopes	Camden	Not hydric	outwash plain, stream terrace	---
	Pella	Hydric	outwash plain, ground moraine, lake plain	2B3
148A: Proctor silt loam, 0 to 2 percent slopes	Proctor	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
148B: Proctor silt loam, 2 to 5 percent slopes	Proctor	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
149A: Brenton silt loam, 0 to 2 percent slopes	Brenton	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
152A: Drummer silty clay loam, 0 to 2 percent slopes	Drummer	Hydric	outwash plain, ground moraine	2B3
152A+: Drummer silt loam, 0 to 2 percent slopes, overwash	Drummer	Hydric	ground moraine, outwash plain	2B3
153A: Pella silty clay loam, 0 to 2 percent slopes	Pella	Hydric	outwash plain, ground moraine, lake plain	2B3
172A: Hoopeston sandy loam, 0 to 2 percent slopes	Hoopeston	Not hydric	outwash plain, stream terrace	---
	Selmass	Hydric	outwash plain, stream terrace	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
197A:				
Troxel silt loam, 0 to 2 percent slopes	Troxel	Not hydric	drainageway	---
	Sable	Hydric	ground moraine	2B3
	Thorp	Hydric	outwash plain, ground moraine	2B3
198A:				
Elburn silt loam, 0 to 2 percent slopes	Elburn	Not hydric	outwash plain, stream terrace	---
	Sable	Hydric	swale	2B3
	Drummer	Hydric	swale	2B3
	Thorp	Hydric	depression	2B3
199A:				
Plano silt loam, 0 to 2 percent slopes	Plano	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
199B:				
Plano silt loam, 2 to 5 percent slopes	Plano	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
	Sable	Hydric	ground moraine	2B3
199C2:				
Plano silt loam, 5 to 10 percent slopes, eroded	Plano	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
	Sable	Hydric	ground moraine	2B3
206A:				
Thorp silt loam, 0 to 2 percent slopes	Thorp	Hydric	outwash plain, ground moraine	2B3
219A:				
Millbrook silt loam, 0 to 2 percent slopes	Millbrook	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
	Pella	Hydric	outwash plain, ground moraine, lake plain	2B3
221B:				
Parr silt loam, 2 to 5 percent slopes	Parr	Not hydric	ground moraine, end moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
221C2:				
Parr silt loam, 5 to 10 percent slopes, eroded	Parr	Not hydric	ground moraine, end moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
242A:				
Kendall silt loam, 0 to 2 percent slopes	Kendall	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	swale	2B3
	Sable	Hydric	ground moraine	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
243A: St. Charles silt loam, 0 to 2 percent slopes	St. Charles	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
243B: St. Charles silt loam, 2 to 5 percent slopes	St. Charles	Not hydric	outwash plain, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
	Drummer	Hydric	outwash plain, ground moraine	2B3
243C2: St. Charles silt loam, 5 to 10 percent slopes, eroded	St. Charles	Not hydric	outwash plain, stream terrace	---
	Comfrey	Hydric	flood plain	2B3
278A: Stronghurst silt loam, 0 to 2 percent slopes	Stronghurst	Not hydric	ground moraine	---
	Sable	Hydric	ground moraine	2B3
290A: Warsaw loam, 0 to 2 percent slopes	Warsaw	Not hydric	outwash plain, stream terrace, kame	---
	Will	Hydric	outwash plain, stream terrace, kame	2B3
290B: Warsaw loam, 2 to 4 percent slopes	Warsaw	Not hydric	outwash plain, stream terrace, kame	---
	Will	Hydric	outwash plain, stream terrace, kame	2B3
290C2: Warsaw loam, 4 to 6 percent slopes, eroded	Warsaw	Not hydric	kame, outwash plain, stream terrace	---
	Will	Hydric	outwash plain, stream terrace, kame	2B3
325B: Dresden silt loam, 2 to 4 percent slopes	Dresden	Not hydric	outwash plain, stream terrace, kame	---
	Dunham	Hydric	outwash plain, stream terrace	2B3
	Will	Hydric	outwash plain, stream terrace, kame	2B3
325C2: Dresden silt loam, 4 to 6 percent slopes, eroded	Dresden	Not hydric	outwash plain, stream terrace, kame	---
	Dunham	Hydric	outwash plain, stream terrace	2B3
	Will	Hydric	outwash plain, stream terrace, kame	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
327B: Fox silt loam, 2 to 4 percent slopes	Fox	Not hydric	outwash plain, end moraine, kame	---
	Dunham	Hydric	outwash plain, stream terrace	2B3
	Will	Hydric	outwash plain, stream terrace, kame	2B3
327C2: Fox silt loam, 4 to 6 percent slopes, eroded	Fox	Not hydric	outwash plain, end moraine, kame	---
	Dunham	Hydric	outwash plain, stream terrace	2B3
	Will	Hydric	outwash plain, stream terrace, kame	2B3
327D2: Fox loam, 6 to 12 percent slopes, eroded	Fox	Not hydric	outwash plain, end moraine, kame	---
	Dunham	Hydric	outwash plain, stream terrace	2B3
	Will	Hydric	outwash plain, stream terrace, kame	2B3
329A: Will loam, 0 to 2 percent slopes	Will	Hydric	outwash plain, stream terrace, kame	2B3
332A: Billett sandy loam, 0 to 2 percent slopes	Billett	Not hydric	outwash plain, stream terrace	---
	Selmass	Hydric	outwash plain, stream terrace	2B3
332B: Billett sandy loam, 2 to 5 percent slopes	Billett	Not hydric	outwash plain, stream terrace	---
	Selmass	Hydric	outwash plain, stream terrace	2B3
343A: Kane silt loam, 0 to 2 percent slopes	Kane	Not hydric	outwash plain, stream terrace, kame	---
	Will	Hydric	outwash plain, stream terrace, kame	2B3
344A: Harvard silt loam, 0 to 2 percent slopes	Harvard	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
344B: Harvard silt loam, 2 to 5 percent slopes	Harvard	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
369A: Waupecan silt loam, 0 to 2 percent slopes	Waupecan	Not hydric	outwash plain, stream terrace	---
	Dunham	Hydric	outwash plain, stream terrace	2B3
379A: Dakota loam, 0 to 2 percent slopes	Dakota	Not hydric	outwash plain, stream terrace	---
	Selma	Hydric	outwash plain, stream terrace	2B3
490A: Odell silt loam, 0 to 2 percent slopes	Odell	Not hydric	ground moraine	---
	Selma	Hydric	outwash plain, stream terrace	2B3
512A: Danabrook silt loam, 0 to 2 percent slopes	Danabrook	Not hydric	ground moraine, end moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
512B: Danabrook silt loam, 2 to 5 percent slopes	Danabrook	Not hydric	ground moraine, end moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
512C2: Danabrook silt loam, 5 to 10 percent slopes, eroded	Danabrook	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
523A: Dunham silty clay loam, 0 to 2 percent slopes	Dunham	Hydric	outwash plain, stream terrace	2B3
526A: Grundelein silt loam, 0 to 2 percent slopes	Grundelein	Not hydric	outwash plain, stream terrace	---
	Dunham	Hydric	outwash plain, stream terrace	2B3
527B: Kidami silt loam, 2 to 4 percent slopes	Kidami	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
527C2: Kidami loam, 4 to 6 percent slopes, eroded	Kidami	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
527D2: Kidami loam, 6 to 12 percent slopes, eroded	Kidami	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
528A: Lahoguess loam, 0 to 2 percent slopes	Lahoguess	Not hydric	outwash plain, stream terrace	---
	Selmass	Hydric	outwash plain, stream terrace	2B3
529A: Selmass loam, 0 to 2 percent slopes	Selmass	Hydric	outwash plain, stream terrace	2B3
543B: Piscasaw silt loam, 2 to 4 percent slopes	Piscasaw	Not hydric	end moraine, ground moraine	---
	Pella	Hydric	outwash plain, ground moraine, lake plain	2B3
544A: Torox silt loam, 0 to 2 percent slopes	Torox	Not hydric	end moraine, ground moraine	---
	Pella	Hydric	outwash plain, ground moraine, lake plain	2B3
545A: Windere silt loam, 0 to 2 percent slopes	Windere	Not hydric	end moraine, ground moraine	---
	Pella	Hydric	outwash plain, ground moraine, lake plain	2B3
545B: Windere silt loam, 2 to 4 percent slopes	Windere	Not hydric	end moraine, ground moraine	---
	Pella	Hydric	outwash plain, ground moraine, lake plain	2B3
570A: Martinsville silt loam, 0 to 2 percent slopes	Martinsville	Not hydric	outwash plain, stream terrace	---
	Selma	Hydric	outwash plain, stream terrace	2B3
570B: Martinsville silt loam, 2 to 4 percent slopes	Martinsville	Not hydric	outwash plain, stream terrace	---
	Pella	Hydric	outwash plain, ground moraine, lake plain	2B3
	Selma	Hydric	outwash plain, stream terrace	2B3
570C2: Martinsville silt loam, 4 to 6 percent slopes, eroded	Martinsville	Not hydric	outwash plain, stream terrace	---
	Pella	Hydric	outwash plain, ground moraine, lake plain	2B3
	Selma	Hydric	outwash plain, stream terrace	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
618B: Senachwine silt loam, 2 to 5 percent slopes	Senachwine	Not hydric	ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
	Selma	Hydric	outwash plain, stream terrace	2B3
624B: Caprell silt loam, 2 to 4 percent slopes	Caprell	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
624C2: Caprell silt loam, 4 to 6 percent slopes, eroded	Caprell	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
625B: Geryune silt loam, 2 to 5 percent slopes	Geryune	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
626A: Kish loam, 0 to 2 percent slopes	Kish	Hydric	outwash plain, stream terrace, ground moraine	2B3
635A: Lismod silt loam, 0 to 2 percent slopes	Lismod	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
635B: Lismod silt loam, 2 to 4 percent slopes	Lismod	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
636B: Parmod silt loam, 2 to 5 percent slopes	Parmod	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
636C2: Parmod silt loam, 5 to 10 percent slopes, eroded	Parmod	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
667C2: Kaneville silt loam, 5 to 10 percent slopes, eroded	Kaneville	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
675A: Greenbush silt loam, 0 to 2 percent slopes	Greenbush	Not hydric	ground moraine	---
	Sable	Hydric	ground moraine	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
675B: Greenbush silt loam, 2 to 5 percent slopes	Greenbush	Not hydric	ground moraine	---
	Sable	Hydric	ground moraine	2B3
766A: Lamartine silt loam, 0 to 2 percent slopes	Lamartine	Not hydric	end moraine, ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
771A: Hayfield loam, 0 to 2 percent slopes	Hayfield	Not hydric	outwash plain, stream terrace	---
	Marshan	Hydric	outwash plain, stream terrace	2B3
	Selmass	Hydric	outwash plain, stream terrace	2B3
777A: Adrian muck, 0 to 2 percent slopes	Adrian	Hydric	depression, outwash plain	1,2B3
782A: Juneau silt loam, 0 to 2 percent slopes	Juneau	Not hydric	ground moraine	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
	Sable	Hydric	ground moraine	2B3
783A: Flagler sandy loam, 0 to 2 percent slopes	Flagler	Not hydric	outwash plain, stream terrace	---
	Marshan	Hydric	outwash plain, stream terrace	2B3
783B: Flagler sandy loam, 2 to 6 percent slopes	Flagler	Not hydric	outwash plain, stream terrace	---
	Marshan	Hydric	outwash plain, stream terrace	2B3
791A: Rush silt loam, 0 to 2 percent slopes	Rush	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
	Dunham	Hydric	outwash plain, stream terrace	2B3
802B: Orthents, loamy, undulating	Orthents, loamy	Not hydric	ground moraine, outwash plain	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
	Houghton	Hydric	ground moraine, outwash plain, end moraine	1,2B3
1082A: Millington silt loam, undrained, 0 to 2 percent slopes, occasionally flooded	Millington	Hydric	flood plain	2B3,3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
1100A: Palms muck, undrained, 0 to 2 percent slopes, frequently flooded	Palms	Hydric	depression, flood plain	1,2B3,3
1103A: Houghton muck, undrained, 0 to 2 percent slopes, frequently flooded	Houghton	Hydric	depression, flood plain	1,2B3,3
1776A: Comfrey loams, undrained, 0 to 2 percent slopes, commonly flooded	Comfrey soils	Hydric	flood plain	2B3,3
1777A: Adrian muck, undrained, 0 to 2 percent slopes, frequently flooded	Adrian	Hydric	depression, flood plain	1,2B3,3
3082A: Millington silt loam, 0 to 2 percent slopes, frequently flooded	Millington	Hydric	flood plain	2B3
3107A: Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	Sawmill	Hydric	flood plain	2B3
3415A: Orion silt loam, 0 to 2 percent slopes, frequently flooded	Orion	Not hydric	flood plain	---
	Comfrey	Hydric	flood plain	2B3
	Sawmill	Hydric	flood plain	2B3
3776A: Comfrey loam, 0 to 2 percent slopes, frequently flooded	Comfrey	Hydric	flood plain	2B3
3800A: Psammets, 0 to 2 percent slopes, frequently flooded	Psamments	Not hydric	flood plain	---
	Comfrey	Hydric	flood plain	2B3
8082A: Millington silt loam, 0 to 2 percent slopes, occasionally flooded	Millington	Hydric	flood plain	2B3
8776A: Comfrey loam, 0 to 2 percent slopes, occasionally flooded	Comfrey	Hydric	flood plain	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
8782A: Juneau silt loam, 0 to 2 percent slopes, occasionally flooded	Juneau	Not hydric	drainageway, flood plain	---
	Comfrey	Hydric	flood plain	2B3
	Sawmill	Hydric	flood plain	2B3
9061A: Atterberry silt loam, terrace, 0 to 2 percent slopes	Atterberry	Not hydric	stream terrace	---
	Sable	Hydric	stream terrace	2B3
9068A: Sable silty clay loam, terrace, 0 to 2 percent slopes	Sable	Hydric	stream terrace	2B3

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
21B: Pecatonica-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
21C2: Pecatonica-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
22B: Westville-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
22C2: Westville-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
22D2: Westville-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
51A: Muscatune-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
61A: Atterberry-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
68A: Sable-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
68A+: Sable-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
86A: Osco-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
86B: Osco-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
87A: Dickinson-----	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak	Carolina poplar, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
100A: Palms-----	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-----	Pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood
102A: La Hogue-----	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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	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-----	Pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
119B: Elco-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
125A: Selma-----	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	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
134A: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	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	Norway spruce-----	Carolina poplar
148A: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	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, green hawthorn, shingle oak	Red maple, river birch, 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, green hawthorn, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
153A: Pella-----	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	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
172A: Hoopeston-----	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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
188A: Beardstown-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
197A: Troxel-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
198A: Elburn-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
199A: Plano-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
199B: Plano-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
199C2: Plano-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
206A: Thorp-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	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	Norway spruce-----	Carolina poplar
227B: Argyle-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
243A: St. Charles-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
243B: St. Charles-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
243C2: St. Charles-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
278A: Stronghurst-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
279A: Rozetta-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
280B: Fayette-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
280C2: Fayette-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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	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	Carolina poplar-----	---
290C2: 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	Carolina poplar-----	---
290D2: 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	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
293A: Andres-----	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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
297C2: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
297D2: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
310B: McHenry-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
310C2: McHenry-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
310D2: McHenry-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
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	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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	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	Carolina poplar-----	---
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	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	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
332A: Billett-----	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak	Carolina poplar, eastern white pine
332B: Billett-----	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak	Carolina poplar, eastern white pine
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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
344A: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
344B: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
354A: Hononegah-----	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar-----	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
354B: Hononegah-----	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateteleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar-----	Eastern white pine
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
361D3: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
363C2: Griswold-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
363D2: Griswold-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
379A: Dakota-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
387A: Ockley-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
387B: Ockley-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
403E: Elizabeth-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
412B: Ogle-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
419A: Flagg-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
419B: Flagg-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
419C2: Flagg-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
440A: Jasper-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
440B: Jasper-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
440C2: Jasper-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
490A: Odell-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
503B: Rockton-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
505D2: Dunbarton-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
505E2: Dunbarton-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
506B: Hitt-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	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	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
528A: Lahoguess-----	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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
543B: Piscasaw-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
544A: Torox-----	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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
545A: Windere-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
545B: Windere-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
561B: Whalan-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
NewGlarus-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
561C2: Whalan-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
NewGlarus-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
561D2: Whalan-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
NewGlarus-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
566B: Rockton-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
Dodgeville-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
566C2: Rockton-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
Dodgeville-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
566D2: Rockton-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
Dodgeville-----	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	Carolina poplar-----	---
570A: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
570D2: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
618B: 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, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
623A: Kishwaukee-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
623B: Kishwaukee-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
624B: Caprell-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
624C2: Caprell-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
624D2: Caprell-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
624E: Caprell-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
625B: Geryune-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	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	---
635A: Lismod-----	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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
635B: Lismod-----	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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
636B: Parmod-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
636C2: Parmod-----	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
667C2: 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
675A: Greenbush-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
675B: Greenbush-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
728B: Winnebago-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
728C2: Winnebago-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
766A: Lamartine-----	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, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
768C: Backbone-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
771A: Hayfield-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
772A: Marshan-----	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	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
777A: Adrian-----	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-----	Pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood
779B: Chelsea-----	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateteleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar-----	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
779D: Chelsea-----	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateteleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar-----	Eastern white pine
780B: Grellton-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
780C2: Grellton-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
781A: Friesland-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
781B: Friesland-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
782A: Juneau-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
783A: Flagler-----	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak	Carolina poplar, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
783B: Flagler-----	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak	Carolina poplar, eastern white pine
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
864. Pits, quarry					
865. Pits, gravel					
939C2: Rodman-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
939C2: 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	Carolina poplar-----	---
939D2: Rodman-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
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	Carolina poplar-----	---
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	Carolina poplar-----	---
Rodman-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak,	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
1082A: 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	---
1100A: Palms-----	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-----	Pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood
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-----	Pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood
1776A: Comfrey, frequently flooded-----	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	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
1776A: Comfrey, occasionally flooded-----	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	red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
1777A: Adrian-----	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-----	Pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood
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	---
3107A: Sawmill-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
3415A: Orion-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3776A: Comfrey-----	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	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
3800A: Psammets-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
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	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8776A: Comfrey-----	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	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
8782A: Juneau-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
9061A: Atterberry-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
9068A: Sable-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
9278A: Stronghurst-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--Forestland Harvest Equipment Considerations

(Only the soils that are commonly used as forestland are listed. See text for a description of the considerations listed in this table)

Map symbol and soil name	Forestland harvest equipment considerations
21B: Pecatonica-----	Susceptible to rutting and wheel slippage
21C2: Pecatonica-----	Susceptible to rutting and wheel slippage
22B: Westville-----	Susceptible to rutting and wheel slippage
22C2: Westville-----	Susceptible to rutting and wheel slippage
22D2: Westville-----	Slope Susceptible to rutting and wheel slippage
61A: Atterberry-----	Wetness Susceptible to rutting and wheel slippage
62A: Herbert-----	Wetness Susceptible to rutting and wheel slippage
100A: Palms-----	Wetness Susceptible to rutting and wheel slippage
103A: Houghton-----	Wetness Susceptible to rutting and wheel slippage
104A: Virgil-----	Wetness Susceptible to rutting and wheel slippage
119B: Elco-----	Wetness Susceptible to rutting and wheel slippage
134A: Camden-----	Susceptible to rutting and wheel slippage
188A: Beardstown-----	Wetness Susceptible to rutting and wheel slippage
219A: Millbrook-----	Wetness Susceptible to rutting and wheel slippage
227B: Argyle-----	Susceptible to rutting and wheel slippage
242A: Kendall-----	Wetness Susceptible to rutting and wheel slippage

Table 11.--Forestland Harvest Equipment Considerations--Continued

Map symbol and soil name	Forestland harvest equipment considerations
243A: St. Charles-----	Susceptible to rutting and wheel slippage
243B: St. Charles-----	Susceptible to rutting and wheel slippage
243C2: St. Charles-----	Susceptible to rutting and wheel slippage
278A: Stronghurst-----	Wetness Susceptible to rutting and wheel slippage
279A: Rozetta-----	Susceptible to rutting and wheel slippage
280B: Fayette-----	Susceptible to rutting and wheel slippage
280C2: Fayette-----	Susceptible to rutting and wheel slippage
310B: McHenry-----	Susceptible to rutting and wheel slippage
310C2: McHenry-----	Susceptible to rutting and wheel slippage
325B: Dresden-----	Susceptible to rutting and wheel slippage
325C2: Dresden-----	Susceptible to rutting and wheel slippage
327B: Fox-----	Susceptible to rutting and wheel slippage
327C2: Fox-----	Susceptible to rutting and wheel slippage
327D2: Fox-----	Susceptible to rutting and wheel slippage
332A: Billett-----	No major considerations
332B: Billett-----	No major considerations
344A: Harvard-----	Susceptible to rutting and wheel slippage
344B: Harvard-----	Susceptible to rutting and wheel slippage
361B: Kidder-----	Susceptible to rutting and wheel slippage
361C2: Kidder-----	Susceptible to rutting and wheel slippage
361D2: Kidder-----	Susceptible to rutting and wheel slippage

Table 11.--Forestland Harvest Equipment Considerations--Continued

Map symbol and soil name	Forestland harvest equipment considerations
361D3: Kidder-----	Susceptible to rutting and wheel slippage
361E2: Kidder-----	Slope Susceptible to rutting and wheel slippage
387A: Ockley-----	Susceptible to rutting and wheel slippage
387B: Ockley-----	Susceptible to rutting and wheel slippage
403E: Elizabeth-----	Slope Depth to hard bedrock Susceptible to rutting and wheel slippage
419A: Flagg-----	Susceptible to rutting and wheel slippage
419B: Flagg-----	Susceptible to rutting and wheel slippage
419C2: Flagg-----	Susceptible to rutting and wheel slippage
505D2: Dunbarton-----	Susceptible to rutting and wheel slippage
505E2: Dunbarton-----	Slope Susceptible to rutting and wheel slippage
527B: Kidami-----	Wetness Susceptible to rutting and wheel slippage
527C2: Kidami-----	Wetness Susceptible to rutting and wheel slippage
527D2: Kidami-----	Wetness Susceptible to rutting and wheel slippage
543B: Piscasaw-----	Susceptible to rutting and wheel slippage
544A: Torox-----	Wetness Susceptible to rutting and wheel slippage
545A: Windere-----	Susceptible to rutting and wheel slippage
545B: Windere-----	Susceptible to rutting and wheel slippage
561B: Whalan-----	Susceptible to rutting and wheel slippage
NewGlarus-----	Susceptible to rutting and wheel slippage

Table 11.--Forestland Harvest Equipment Considerations--Continued

Map symbol and soil name	Forestland harvest equipment considerations
561C2: Whalan-----	Susceptible to rutting and wheel slippage
NewGlarus-----	Susceptible to rutting and wheel slippage
561D2: Whalan-----	Susceptible to rutting and wheel slippage
NewGlarus-----	Susceptible to rutting and wheel slippage
570A: Martinsville-----	Susceptible to rutting and wheel slippage
570B: Martinsville-----	Susceptible to rutting and wheel slippage
570C2: Martinsville-----	Susceptible to rutting and wheel slippage
618B: Senachwine-----	Susceptible to rutting and wheel slippage
624B: Caprell-----	Susceptible to rutting and wheel slippage
624C2: Caprell-----	Susceptible to rutting and wheel slippage
624D2: Caprell-----	Susceptible to rutting and wheel slippage
624E: Caprell-----	Slope Susceptible to rutting and wheel slippage
667C2: Kaneville-----	Susceptible to rutting and wheel slippage
675A: Greenbush-----	Susceptible to rutting and wheel slippage
675B: Greenbush-----	Susceptible to rutting and wheel slippage
766A: Lamartine-----	Wetness Susceptible to rutting and wheel slippage
768C: Backbone-----	Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
771A: Hayfield-----	Wetness Susceptible to rutting and wheel slippage
777A: Adrian-----	Wetness Susceptible to rutting and wheel slippage
779B: Chelsea-----	Poor traction (loose sandy material)

Table 11.--Forestland Harvest Equipment Considerations--Continued

Map symbol and soil name	Forestland harvest equipment considerations
780B: Grellton-----	Susceptible to rutting and wheel slippage
782A: Juneau-----	No major considerations
791A: Rush-----	Wetness Susceptible to rutting and wheel slippage
939C2: Rodman-----	No major considerations
Warsaw-----	Susceptible to rutting and wheel slippage
939D2: Rodman-----	No major considerations
Warsaw-----	Susceptible to rutting and wheel slippage
969E2: Casco-----	Slope Susceptible to rutting and wheel slippage
Rodman-----	Slope
1082A: Millington-----	Wetness Susceptible to rutting and wheel slippage
1100A: Palms-----	Flooding Wetness Susceptible to rutting and wheel slippage
1103A: Houghton-----	Flooding Wetness Susceptible to rutting and wheel slippage
1776A: Comfrey, frequently flooded--	Flooding Wetness Susceptible to rutting and wheel slippage
Comfrey, occasionally flooded	Wetness Susceptible to rutting and wheel slippage
1777A: Adrian-----	Flooding Wetness Susceptible to rutting and wheel slippage
3082A: Millington-----	Flooding Wetness Susceptible to rutting and wheel slippage
3107A: Sawmill-----	Flooding Wetness Susceptible to rutting and wheel slippage

Table 11.--Forestland Harvest Equipment Considerations--Continued

Map symbol and soil name	Forestland harvest equipment considerations
3415A: Orion-----	Flooding Wetness Susceptible to rutting and wheel slippage
3776A: Comfrey-----	Flooding Wetness Susceptible to rutting and wheel slippage
8082A: Millington-----	Wetness Susceptible to rutting and wheel slippage
8782A: Juneau-----	No major considerations
9278A: Stronghurst-----	Wetness Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations

(Only the soils that are commonly used as forestland are listed. See text for a description of the considerations listed in this table)

Map symbol and soil name	Haul road considerations	Log landing considerations
21B: Pecatonica-----	Low bearing strength	Susceptible to rutting and wheel slippage
21C2: Pecatonica-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
22B: Westville-----	Low bearing strength	Susceptible to rutting and wheel slippage
22C2: Westville-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
22D2: Westville-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
61A: Atterberry-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
62A: Herbert-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
100A: Palms-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
103A: Houghton-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
104A: Virgil-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
119B: Elco-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
134A: Camden-----	Low bearing strength	Susceptible to rutting and wheel slippage
188A: Beardstown-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
219A: Millbrook-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
227B: Argyle-----	Low bearing strength	Susceptible to rutting and wheel slippage
242A: Kendall-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations--Continued

Map symbol and soil name	Haul road considerations	Log landing considerations
243A: St. Charles-----	Low bearing strength	Susceptible to rutting and wheel slippage
243B: St. Charles-----	Low bearing strength	Susceptible to rutting and wheel slippage
243C2: St. Charles-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
278A: Stronghurst-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
279A: Rozetta-----	Low bearing strength	Susceptible to rutting and wheel slippage
280B: Fayette-----	Low bearing strength	Susceptible to rutting and wheel slippage
280C2: Fayette-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
310B: McHenry-----	Low bearing strength	Susceptible to rutting and wheel slippage
310C2: McHenry-----	Low bearing strength	Susceptible to rutting and wheel slippage
325B: Dresden-----	Low bearing strength	Susceptible to rutting and wheel slippage
325C2: Dresden-----	Low bearing strength	Susceptible to rutting and wheel slippage
327B: Fox-----	Low bearing strength	Susceptible to rutting and wheel slippage
327C2: Fox-----	Low bearing strength	Susceptible to rutting and wheel slippage
327D2: Fox-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
332A: Billett-----	No major considerations	No major considerations
332B: Billett-----	No major considerations	No major considerations
344A: Harvard-----	Low bearing strength	Susceptible to rutting and wheel slippage
344B: Harvard-----	Low bearing strength	Susceptible to rutting and wheel slippage
361B: Kidder-----	Low bearing strength	Susceptible to rutting and wheel slippage
361C2: Kidder-----	Low bearing strength	Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations--Continued

Map symbol and soil name	Haul road considerations	Log landing considerations
361D2: Kidder-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
361D3: Kidder-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
361E2: Kidder-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
387A: Ockley-----	Low bearing strength	Susceptible to rutting and wheel slippage
387B: Ockley-----	Low bearing strength	Susceptible to rutting and wheel slippage
403E: Elizabeth-----	Slope Depth to hard bedrock Low bearing strength	Slope Susceptible to rutting and wheel slippage
419A: Flagg-----	Low bearing strength	Susceptible to rutting and wheel slippage
419B: Flagg-----	Low bearing strength	Susceptible to rutting and wheel slippage
419C2: Flagg-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
505D2: Dunbarton-----	Slope Depth to hard bedrock Low bearing strength	Slope Susceptible to rutting and wheel slippage
505E2: Dunbarton-----	Slope Depth to hard bedrock Low bearing strength	Slope Susceptible to rutting and wheel slippage
527B: Kidami-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
527C2: Kidami-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
527D2: Kidami-----	Slope Wetness Low bearing strength	Slope Wetness Susceptible to rutting and wheel slippage
543B: Piscasaw-----	Low bearing strength	Susceptible to rutting and wheel slippage
544A: Torox-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations--Continued

Map symbol and soil name	Haul road considerations	Log landing considerations
545A: Windere-----	Low bearing strength	Susceptible to rutting and wheel slippage
545B: Windere-----	Low bearing strength	Susceptible to rutting and wheel slippage
561B: Whalan-----	Low bearing strength	Susceptible to rutting and wheel slippage
NewGlarus-----	Low bearing strength	Susceptible to rutting and wheel slippage
561C2: Whalan-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
NewGlarus-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
561D2: Whalan-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
NewGlarus-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
570A: Martinsville-----	Low bearing strength	Susceptible to rutting and wheel slippage
570B: Martinsville-----	Low bearing strength	Susceptible to rutting and wheel slippage
570C2: Martinsville-----	Low bearing strength	Susceptible to rutting and wheel slippage
618B: Senachwine-----	Low bearing strength	Susceptible to rutting and wheel slippage
624B: Caprell-----	Low bearing strength	Susceptible to rutting and wheel slippage
624C2: Caprell-----	Low bearing strength	Susceptible to rutting and wheel slippage
624D2: Caprell-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
624E: Caprell-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
667C2: Kaneville-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
675A: Greenbush-----	Low bearing strength	Susceptible to rutting and wheel slippage
675B: Greenbush-----	Low bearing strength	Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations--Continued

Map symbol and soil name	Haul road considerations	Log landing considerations
766A: Lamartine-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
768C: Backbone-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
771A: Hayfield-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
777A: Adrian-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
779B: Chelsea-----	No major considerations	No major considerations
780B: Grellton-----	Low bearing strength	Susceptible to rutting and wheel slippage
782A: Juneau-----	No major considerations	No major considerations
791A: Rush-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
939C2: Rodman-----	No major considerations	No major considerations
Warsaw-----	Low bearing strength	Susceptible to rutting and wheel slippage
939D2: Rodman-----	Slope	Slope
Warsaw-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
969E2: Casco-----	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
Rodman-----	Slope	Slope
1082A: Millington-----	Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
1100A: Palms-----	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
1103A: Houghton-----	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
1776A: Comfrey, frequently flooded--	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations--Continued

Map symbol and soil name	Haul road considerations	Log landing considerations
1776A: Comfrey, occasionally flooded	Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
1777A: Adrian-----	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
3082A: Millington-----	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
3107A: Sawmill-----	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
3415A: Orion-----	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
3776A: Comfrey-----	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
8082A: Millington-----	Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
8782A: Juneau-----	No major considerations	Flooding
9278A: Stronghurst-----	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage

Table 13.--Forestland Site Preparation and Planting Considerations

(Only the soils that are commonly used as forestland are listed. See text for a description of the considerations listed in this table)

Map symbol and soil name	Forestland site preparation and planting considerations
21B: Pecatonica-----	Potential poor tilth and compaction
21C2: Pecatonica-----	Water erosion Potential poor tilth and compaction
22B: Westville-----	Potential poor tilth and compaction
22C2: Westville-----	Water erosion Potential poor tilth and compaction
22D2: Westville-----	Slope Water erosion Potential poor tilth and compaction
61A: Atterberry-----	Wetness Potential poor tilth and compaction
62A: Herbert-----	Wetness Potential poor tilth and compaction
100A: Palms-----	Wetness
103A: Houghton-----	Wetness
104A: Virgil-----	Wetness Potential poor tilth and compaction
119B: Elco-----	Wetness Potential poor tilth and compaction
134A: Camden-----	Potential poor tilth and compaction
188A: Beardstown-----	Wetness Potential poor tilth and compaction
219A: Millbrook-----	Wetness Potential poor tilth and compaction
227B: Argyle-----	Potential poor tilth and compaction
242A: Kendall-----	Wetness Potential poor tilth and compaction

Table 13.--Forestland Site Preparation and Planting  
Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
243A: St. Charles-----	Potential poor tilth and compaction
243B: St. Charles-----	Potential poor tilth and compaction
243C2: St. Charles-----	Water erosion Potential poor tilth and compaction
278A: Stronghurst-----	Wetness Potential poor tilth and compaction
279A: Rozetta-----	Potential poor tilth and compaction
280B: Fayette-----	Potential poor tilth and compaction
280C2: Fayette-----	Water erosion Potential poor tilth and compaction
310B: McHenry-----	Potential poor tilth and compaction
310C2: McHenry-----	Potential poor tilth and compaction
325B: Dresden-----	Potential poor tilth and compaction
325C2: Dresden-----	Potential poor tilth and compaction
327B: Fox-----	Potential poor tilth and compaction
327C2: Fox-----	Potential poor tilth and compaction
327D2: Fox-----	Water erosion Potential poor tilth and compaction
332A: Billett-----	No major considerations
332B: Billett-----	No major considerations
344A: Harvard-----	Potential poor tilth and compaction
344B: Harvard-----	Potential poor tilth and compaction
361B: Kidder-----	Potential poor tilth and compaction

Table 13.--Forestland Site Preparation and Planting Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
361C2: Kidder-----	Potential poor tilth and compaction
361D2: Kidder-----	Water erosion Potential poor tilth and compaction
361D3: Kidder-----	Water erosion Potential poor tilth and compaction
361E2: Kidder-----	Slope Water erosion Potential poor tilth and compaction
387A: Ockley-----	Potential poor tilth and compaction
387B: Ockley-----	Potential poor tilth and compaction
403E: Elizabeth-----	Slope Depth to hard bedrock Water erosion Potential poor tilth and compaction
419A: Flagg-----	Potential poor tilth and compaction
419B: Flagg-----	Potential poor tilth and compaction
419C2: Flagg-----	Water erosion Potential poor tilth and compaction
505D2: Dunbarton-----	Depth to hard bedrock Water erosion Potential poor tilth and compaction
505E2: Dunbarton-----	Slope Depth to hard bedrock Water erosion Potential poor tilth and compaction
527B: Kidami-----	Wetness Potential poor tilth and compaction
527C2: Kidami-----	Wetness Potential poor tilth and compaction
527D2: Kidami-----	Wetness Water erosion Potential poor tilth and compaction

Table 13.--Forestland Site Preparation and Planting  
Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
543B: Piscasaw-----	Potential poor tilth and compaction
544A: Torox-----	Wetness Potential poor tilth and compaction
545A: Windere-----	Potential poor tilth and compaction
545B: Windere-----	Potential poor tilth and compaction
561B: Whalan-----	Potential poor tilth and compaction
NewGlarus-----	No major considerations
561C2: Whalan-----	Water erosion Potential poor tilth and compaction
NewGlarus-----	Water erosion Potential poor tilth and compaction
561D2: Whalan-----	Water erosion Potential poor tilth and compaction
NewGlarus-----	Water erosion Potential poor tilth and compaction
570A: Martinsville-----	No major considerations
570B: Martinsville-----	No major considerations
570C2: Martinsville-----	No major considerations
618B: Senachwine-----	No major considerations
624B: Caprell-----	Potential poor tilth and compaction
624C2: Caprell-----	Potential poor tilth and compaction
624D2: Caprell-----	Water erosion Potential poor tilth and compaction
624E: Caprell-----	Slope Water erosion Potential poor tilth and compaction
667C2: Kaneville-----	Water erosion Potential poor tilth and compaction

Table 13.--Forestland Site Preparation and Planting  
Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
675A: Greenbush-----	Potential poor tilth and compaction
675B: Greenbush-----	No major considerations
766A: Lamartine-----	Wetness Potential poor tilth and compaction
768C: Backbone-----	Water erosion
771A: Hayfield-----	Wetness Potential poor tilth and compaction
777A: Adrian-----	Wetness
779B: Chelsea-----	No major considerations
780B: Grellton-----	No major considerations
782A: Juneau-----	No major considerations
791A: Rush-----	Wetness Potential poor tilth and compaction
939C2: Rodman-----	No major considerations
Warsaw-----	Potential poor tilth and compaction
939D2: Rodman-----	Water erosion
Warsaw-----	Water erosion Potential poor tilth and compaction
969E2: Casco-----	Slope Water erosion
Rodman-----	Slope Water erosion
1082A: Millington-----	Wetness
1100A: Palms-----	Flooding Wetness
1103A: Houghton-----	Flooding Wetness

Table 13.--Forestland Site Preparation and Planting  
Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
1776A: Comfrey, frequently flooded--	Flooding Wetness Potential poor tilth and compaction
Comfrey, occasionally flooded	Wetness Potential poor tilth and compaction
1777A: Adrian-----	Flooding Wetness
3082A: Millington-----	Flooding Wetness
3107A: Sawmill-----	Flooding Wetness Potential poor tilth and compaction
3415A: Orion-----	Flooding Wetness Potential poor tilth and compaction
3776A: Comfrey-----	Flooding Wetness Potential poor tilth and compaction
8082A: Millington-----	Wetness
8782A: Juneau-----	No major considerations
9278A: Stronghurst-----	Wetness Potential poor tilth and compaction

Table 14.--Forestland Productivity

(Only the soils commonly used for production of commercial trees are listed)

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
21B:				
Pecatonica-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	80	57	
	Black walnut-----	---	---	
21C2:				
Pecatonica-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	80	57	
	Black walnut-----	---	---	
22B:				
Westville-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak-----	80	57	
	Black walnut-----	---	---	
22C2:				
Westville-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak-----	80	57	
	Black walnut-----	---	---	
22D2:				
Westville-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak-----	80	57	
	Black walnut-----	---	---	
61A:				
Atterberry-----	Northern red oak-----	70	57	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	White oak-----	70	57	
	Bur oak-----	---	---	
62A:				
Herbert-----	White oak-----	80	57	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Black walnut-----	---	---	
	Northern red oak-----	---	---	
	Shagbark hickory-----	---	---	
100A:				
Palms-----	Tamarack-----	61	57	Eastern cottonwood, pin oak, swamp white oak.
	Northern white-cedar-----	---	---	
	Quaking aspen-----	---	---	
	Red maple-----	55	29	
	Silver maple-----	80	29	
103A:				
Houghton-----	Silver maple-----	82	29	Eastern cottonwood, pin oak, swamp white oak.
	Quaking aspen-----	60	57	
	Red maple-----	56	29	
	Arborvitae-----	37	57	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
104A: Virgil-----	Silver maple----- American elm----- Shagbark hickory-----	70 --- ---	29 --- ---	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
119B: Elco-----	Black walnut----- Northern red oak----- White oak-----	--- --- 80	--- --- 57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
134A: Camden-----	Northern red oak----- White oak----- Sugar maple----- Shagbark hickory-----	85 85 --- ---	72 72 --- ---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
188A: Beardstown-----	Black walnut----- Northern red oak----- Tuliptree----- White oak-----	--- 80 90 80	--- 57 86 57	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
219A: Millbrook-----	Northern red oak----- White oak----- Black walnut----- Shagbark hickory-----	80 80 --- ---	57 57 --- ---	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
227B: Argyle-----	Black walnut----- Northern red oak----- White oak-----	--- --- 80	--- --- 57	Scotch pine, black walnut, eastern white pine, northern red oak, red pine, white oak.
242A: Kendall-----	White oak----- Black walnut----- Northern red oak----- Tuliptree-----	80 --- 80 90	57 --- 57 86	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
243A: St. Charles-----	White oak----- Northern red oak----- Sweetgum----- Tuliptree-----	85 85 --- 95	72 72 --- 100	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
243B: St. Charles-----	Northern red oak----- Sweetgum----- Tuliptree----- White oak-----	85 --- 95 85	72 --- 100 72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
243C2: St. Charles-----	White oak----- Northern red oak----- Sweetgum----- Tuliptree-----	85 85 --- 95	72 72 --- 100	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
278A: Stronghurst-----	Bur oak-----	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	White oak-----	70	57	
	Northern red oak-----	70	57	
279A: Rozetta-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	Tuliptree-----	90	86	
	White oak-----	80	57	
280B: Fayette-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	Tuliptree-----	90	86	
	White oak-----	80	57	
280C2: Fayette-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	80	57	
	Black walnut-----	---	---	
	Tuliptree-----	90	86	
310B: McHenry-----	Northern red oak-----	65	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	---	---	
	White oak-----	70	57	
310C2: McHenry-----	Bur oak-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak-----	70	57	
	Northern red oak-----	70	57	
310D2: McHenry-----	Bur oak-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak-----	70	57	
	Northern red oak-----	70	57	
325B: Dresden-----	Northern red oak-----	70	57	Black oak, common hackberry, eastern white pine.
	American basswood-----	---	---	
	Black cherry-----	---	---	
	Black oak-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
325C2: Dresden-----	Northern red oak-----	70	57	Black oak, common hackberry, eastern white pine.
	American basswood-----	---	---	
	Black cherry-----	---	---	
	Black oak-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
327B:				
Fox-----	Northern red oak-----	65	57	Black oak, common hackberry, eastern white pine.
	Black cherry-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
327C2:				
Fox-----	Northern red oak-----	65	57	Black oak, common hackberry, eastern white pine.
	Black cherry-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
327D2:				
Fox-----	Northern red oak-----	65	57	Black oak, common hackberry, eastern white pine.
	Black cherry-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
332A:				
Billett-----	Black oak-----	70	57	Black walnut, bur oak, eastern white pine, pecan, pin oak.
	Scarlet oak-----	70	57	
	White oak-----	70	57	
332B:				
Billett-----	Black oak-----	70	57	Black walnut, bur oak, eastern white pine, pecan, pin oak.
	Scarlet oak-----	70	57	
	White oak-----	70	57	
344A:				
Harvard-----	Northern red oak-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	---	---	
	Tuliptree-----	---	---	
	White oak-----	---	---	
344B:				
Harvard-----	Northern red oak-----	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	85	72	
	White oak-----	---	---	
361B:				
Kidder-----	Northern red oak-----	63	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
361C2:				
Kidder-----	Northern red oak-----	63	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
361D2:				
Kidder-----	Northern red oak-----	63	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
361D3:				
Kidder-----	Northern red oak-----	63	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
361E2:				
Kidder-----	Northern red oak-----	63	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
387A:				
Ockley-----	Northern red oak-----	90	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Sweetgum-----	76	72	
	Tuliptree-----	98	100	
	White oak-----	90	72	
387B:				
Ockley-----	Northern red oak-----	90	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Sweetgum-----	76	72	
	Tuliptree-----	98	100	
	White oak-----	90	72	
403E:				
Elizabeth-----	Black oak-----	60	43	Bur oak, chinkapin oak, eastern redcedar.
	Bur oak-----	60	43	
	Eastern redcedar-----	---	---	
	Northern red oak-----	---	---	
	Shagbark hickory-----	---	---	
419A:				
Flagg-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	80	57	
	Black walnut-----	---	---	
419B:				
Flagg-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	80	57	
	Black walnut-----	---	---	
419C2:				
Flagg-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	80	57	
	Black walnut-----	---	---	
505D2:				
Dunbarton-----	Black oak-----	---	---	Bur oak, chinkapin oak, eastern redcedar.
	Northern red oak-----	61	57	
	Shagbark hickory-----	---	---	
	White oak-----	---	---	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
505E2:				
Dunbarton-----	Black oak-----	---	---	Bur oak, chinkapin oak, eastern redcedar.
	Northern red oak-----	61	57	
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
527B:				
Kidami-----	Northern red oak-----	69	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	American beech-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
527C2:				
Kidami-----	Northern red oak-----	69	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	American beech-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
527D2:				
Kidami-----	Northern red oak-----	69	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	American beech-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
543B:				
Piscasaw-----	Black oak-----	84	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	---	---	
	Tuliptree-----	99	100	
544A:				
Torox-----	Black oak-----	84	72	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Shagbark hickory-----	---	---	
	Tuliptree-----	99	100	
545A:				
Windere-----	American basswood-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Northern red oak-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
545B:				
Windere-----	American basswood-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Northern red oak-----	---	---	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
561B:				
Whalan-----	American basswood-----	65	57	Black oak, common hackberry, eastern white pine.
	Bitternut hickory-----	69	---	
	Black cherry-----	57	29	
	Black walnut-----	55	---	
	Eastern white pine-----	58	114	
	Northern red oak-----	79	86	
	Paper birch-----	55	57	
	Quaking aspen-----	75	86	
	White oak-----	78	72	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
561B:				
NewGlarus-----	Black walnut-----	---	---	Black oak, common hackberry, eastern white pine.
	Eastern redcedar-----	---	---	
	Northern red oak-----	80	57	
	Tuliptree-----	88	86	
561C2:				
Whalan-----	American basswood-----	65	57	Black oak, common hackberry, eastern white pine.
	Bitternut hickory-----	69	---	
	Black cherry-----	57	29	
	Black walnut-----	55	---	
	Eastern white pine-----	58	114	
	Northern red oak-----	79	86	
	Paper birch-----	55	57	
	Quaking aspen-----	75	86	
	White oak-----	78	72	
NewGlarus-----	Black walnut-----	---	---	Black oak, common hackberry, eastern white pine.
	Eastern redcedar-----	---	---	
	Northern red oak-----	80	57	
	Tuliptree-----	88	86	
561D2:				
Whalan-----	American basswood-----	65	57	Black oak, common hackberry, eastern white pine.
	Bitternut hickory-----	69	---	
	Black cherry-----	57	29	
	Black walnut-----	55	---	
	Eastern white pine-----	58	114	
	Northern red oak-----	79	86	
	Paper birch-----	55	57	
	Quaking aspen-----	75	86	
	White oak-----	78	72	
NewGlarus-----	Black walnut-----	---	---	Black oak, common hackberry, eastern white pine.
	Eastern redcedar-----	---	---	
	Northern red oak-----	80	57	
	Tuliptree-----	88	86	
570A:				
Martinsville-----	Shagbark hickory-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Sweetgum-----	76	72	
	Tuliptree-----	98	100	
	White oak-----	80	57	
570B:				
Martinsville-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak-----	80	57	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
570C2:				
Martinsville-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak-----	80	57	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
570D2:				
Martinsville-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak-----	80	57	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
618B:				
Senachwine-----	Sweetgum-----	76	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Tuliptree-----	98	100	
	White oak-----	90	72	
624B:				
Caprell-----	American beech-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Northern red oak-----	69	57	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
624C2:				
Caprell-----	American beech-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Northern red oak-----	69	57	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
624D2:				
Caprell-----	American beech-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Northern red oak-----	69	57	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
624E:				
Caprell-----	American beech-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Northern red oak-----	69	57	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
667C2:				
Kaneville-----	Northern red oak-----	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
675A:				
Greenbush-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	Tuliptree-----	90	86	
	White oak-----	80	57	
675B:				
Greenbush-----	White oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	Black walnut-----	---	---	
	Tuliptree-----	90	86	
766A:				
Lamartine-----	White oak-----	80	57	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Black walnut-----	---	---	
	Northern red oak-----	---	---	
	Shagbark hickory-----	---	---	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
768C:				
Backbone-----	Black oak-----	---	---	Black oak, common hackberry, eastern white pine.
	Northern red oak-----	55	43	
	White oak-----	55	43	
771A:				
Hayfield-----	Eastern white pine-----	60	114	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Northern red oak-----	65	57	
	White oak-----	65	57	
777A:				
Adrian-----	Black willow-----	---	---	Eastern cottonwood, pin oak, swamp white oak.
	Red maple-----	51	29	
	Silver maple-----	76	29	
779B:				
Chelsea-----	Northern red oak-----	---	---	Common hackberry, eastern redcedar, eastern white pine, red maple.
	White oak-----	55	43	
779D:				
Chelsea-----	Northern red oak-----	---	---	Common hackberry, eastern redcedar, eastern white pine, red maple.
	White oak-----	55	43	
780B:				
Grellton-----	Northern red oak-----	70	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	---	---	
	Sugar maple-----	---	---	
780C2:				
Grellton-----	Northern red oak-----	70	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	---	---	
	Sugar maple-----	---	---	
782A:				
Juneau-----	Northern red oak-----	75	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Sugar maple-----	---	---	
791A:				
Rush-----	Northern red oak-----	90	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak-----	90	72	
	Shagbark hickory-----	---	---	
	Sugar maple-----	---	---	
939C2:				
Rodman-----	Eastern white pine-----	85	200	Bur oak, chinkapin oak, eastern redcedar.
	Northern red oak-----	70	57	
	Red pine-----	75	143	
	White oak-----	70	57	
Warsaw.				

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
939D2:				
Rodman-----	Eastern white pine-----	85	200	Bur oak, chinkapin oak, eastern redcedar.
	Northern red oak-----	70	57	
	Red pine-----	75	143	
	White oak-----	70	57	
Warsaw.				
969E2:				
Casco-----	Northern red oak-----	55	43	Black oak, common hackberry, eastern white pine.
	Black oak-----	---	---	
	Shagbark hickory-----	---	---	
Rodman-----	Northern red oak-----	45	29	Bur oak, chinkapin oak, eastern redcedar.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
1082A:				
Millington-----	American beech-----	---	---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar.
	American sycamore-----	---	---	
	Blackgum-----	---	---	
	Northern red oak-----	---	---	
	Pin oak-----	---	---	
	Red maple-----	---	---	
	Shagbark hickory-----	---	---	
	Swamp white oak-----	---	---	
1100A:				
Palms-----	Tamarack-----	61	57	Eastern cottonwood, pin oak, swamp white oak.
	Northern white-cedar-----	---	---	
	Quaking aspen-----	---	---	
	Red maple-----	55	29	
	Silver maple-----	80	29	
1103A:				
Houghton-----	Silver maple-----	82	29	Eastern cottonwood, pin oak, swamp white oak.
	Quaking aspen-----	60	57	
	Red maple-----	56	29	
	Arborvitae-----	37	57	
1776A:				
Comfrey, frequently flooded-----	Silver maple-----	94	43	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
Comfrey, occasionally flooded-----	Silver maple-----	94	43	
1777A:				
Adrian-----	Black willow-----	---	---	Eastern cottonwood, pin oak, swamp white oak.
	Quaking aspen-----	56	57	
	Red maple-----	51	29	
	Silver maple-----	76	29	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
3082A: Millington-----	American beech----- American sycamore----- Blackgum----- Northern red oak----- Pin oak----- Red maple----- Shagbark hickory----- Swamp white oak-----	--- --- --- --- --- --- --- ---	--- --- --- --- --- --- --- ---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar.
3107A: Sawmill-----	Pin oak----- American sycamore----- Eastern cottonwood----- Sweetgum-----	90 --- --- ---	72 --- --- ---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
3415A: Orion-----	Red maple----- Silver maple-----	--- 80	--- 29	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
3776A: Comfrey-----	Silver maple-----	94	43	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
3800A: Psamments-----	---	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
8082A: Millington-----	American beech----- American sycamore----- Blackgum----- Northern red oak----- Pin oak----- Red maple----- Shagbark hickory----- Swamp white oak-----	--- --- --- --- --- --- --- ---	--- --- --- --- --- --- --- ---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar.
8776A: Comfrey-----	Silver maple-----	94	43	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
8782A: Juneau-----	Northern red oak----- Sugar maple----- White oak-----	75 --- ---	57 --- ---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
9061A: Atterberry-----	Northern red oak----- White oak----- Bur oak-----	70 70 ---	57 57 ---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/acre	
9278A: Stronghurst-----	Northern red oak-----	70	57	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	White oak-----	70	57	
	Bur oak-----	---	---	

Table 15a.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Not limited		Not limited		Somewhat limited Slope	0.28
21C2: Pecatonica-----	Not limited		Not limited		Very limited Slope	1.00
22B: Westville-----	Not limited		Not limited		Somewhat limited Slope	0.28
22C2: Westville-----	Not limited		Not limited		Very limited Slope	1.00
22D2: Westville-----	Somewhat limited Slope	0.96	Somewhat limited Slope	0.96	Very limited Slope	1.00
51A: Muscatune-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
59A: Lisbon-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
61A: Atterberry-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
62A: Herbert-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
68A: Sable-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A+:						
Sable-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
86A:						
Osc-----	Not limited		Not limited		Not limited	
86B:						
Osc-----	Not limited		Not limited		Somewhat limited	
					Slope	0.28
87A:						
Dickinson-----	Not limited		Not limited		Not limited	
100A:						
Palms-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
102A:						
La Hogue-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to	0.98	Depth to	0.75	Depth to	0.98
	saturated zone		saturated zone		saturated zone	
103A:						
Houghton-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Organic matter	1.00	Organic matter	1.00	Organic matter	1.00
	content		content		content	
104A:						
Virgil-----	Very limited		Somewhat limited		Very limited	
	Depth to	1.00	Depth to	0.94	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
119B:						
Elco-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water	0.43	Slow water	0.43	Slow water	0.43
	movement		movement		movement	
					Slope	0.28
125A:						
Selma-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
134A:						
Camden-----	Not limited		Not limited		Not limited	
146A:						
Elliott-----	Very limited		Somewhat limited		Very limited	
	Depth to	1.00	Slow water	0.96	Depth to	1.00
	saturated zone		movement		saturated zone	
	Slow water	0.96	Depth to	0.88	Slow water	0.96
	movement		saturated zone		movement	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
148A: Proctor-----	Not limited		Not limited		Not limited	
148B: Proctor-----	Not limited		Not limited		Somewhat limited Slope	0.28
149A: Brenton-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
152A: Drummer-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
152A+: Drummer-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
153A: Pella-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
172A: Hoopeston-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
188A: Beardstown-----	Somewhat limited Depth to saturated zone	0.99	Somewhat limited Depth to saturated zone	0.78	Somewhat limited Depth to saturated zone	0.99
197A: Troxel-----	Not limited		Not limited		Not limited	
198A: Elburn-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
199A: Plano-----	Not limited		Not limited		Not limited	
199B: Plano-----	Not limited		Not limited		Somewhat limited Slope	0.28
199C2: Plano-----	Not limited		Not limited		Very limited Slope	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
206A:						
Thorp-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
219A:						
Millbrook-----	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
221B:						
Parr-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.28
					Slow water movement	0.21
221C2:						
Parr-----	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
					Slow water movement	0.21
223B:						
Varna-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.12
227B:						
Argyle-----	Not limited		Not limited		Somewhat limited	
					Slope	0.28
242A:						
Kendall-----	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
243A:						
St. Charles-----	Not limited		Not limited		Not limited	
243B:						
St. Charles-----	Not limited		Not limited		Somewhat limited	
					Slope	0.28
243C2:						
St. Charles-----	Not limited		Not limited		Very limited	
					Slope	1.00
278A:						
Stronghurst-----	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
279A:						
Rozetta-----	Not limited		Not limited		Not limited	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
280B: Fayette-----	Not limited		Not limited		Somewhat limited Slope	0.28
280C2: Fayette-----	Not limited		Not limited		Very limited Slope	1.00
290A: Warsaw-----	Not limited		Not limited		Not limited	
290B: Warsaw-----	Not limited		Not limited		Somewhat limited Slope	0.12
290C2: Warsaw-----	Not limited		Not limited		Somewhat limited Slope	0.88
290D2: Warsaw-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
293A: Andres-----	Somewhat limited Depth to saturated zone Slow water movement	0.99 0.21	Somewhat limited Depth to saturated zone Slow water movement	0.78 0.21	Somewhat limited Depth to saturated zone Slow water movement	0.99 0.21
297B: Ringwood-----	Not limited		Not limited		Somewhat limited Slope	0.12
297C2: Ringwood-----	Not limited		Not limited		Somewhat limited Slope	0.88
297D2: Ringwood-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
310B: McHenry-----	Not limited		Not limited		Somewhat limited Slope	0.12
310C2: McHenry-----	Not limited		Not limited		Somewhat limited Slope	0.88
310D2: McHenry-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
325B: Dresden-----	Not limited		Not limited		Somewhat limited Slope	0.12
325C2: Dresden-----	Not limited		Not limited		Somewhat limited Slope	0.88

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
327B: Fox-----	Not limited		Not limited		Somewhat limited Slope	0.12
327C2: Fox-----	Not limited		Not limited		Somewhat limited Slope	0.88
327D2: Fox-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
329A: Will-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
332A: Billett-----	Not limited		Not limited		Not limited	
332B: Billett-----	Not limited		Not limited		Somewhat limited Slope	0.28
343A: Kane-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
344A: Harvard-----	Not limited		Not limited		Not limited	
344B: Harvard-----	Not limited		Not limited		Somewhat limited Slope	0.28
354A: Hononegah-----	Somewhat limited Too sandy	0.78	Somewhat limited Too sandy	0.78	Somewhat limited Too sandy Content of large stones	0.78 0.01
354B: Hononegah-----	Somewhat limited Too sandy	0.78	Somewhat limited Too sandy	0.78	Somewhat limited Too sandy Slope Content of large stones	0.78 0.50 0.01
361B: Kidder-----	Not limited		Not limited		Somewhat limited Slope	0.12
361C2: Kidder-----	Not limited		Not limited		Somewhat limited Slope	0.88
361D2: Kidder-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
361D3: Kidder-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
361E2: Kidder-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
363C2: Griswold-----	Not limited		Not limited		Very limited Slope	1.00
363D2: Griswold-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
369A: Waupecan-----	Not limited		Not limited		Not limited	
379A: Dakota-----	Not limited		Not limited		Not limited	
387A: Ockley-----	Not limited		Not limited		Somewhat limited Gravel content	0.04
387B: Ockley-----	Not limited		Not limited		Somewhat limited Slope Gravel content	0.28 0.04
403E: Elizabeth-----	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
412B: Ogle-----	Not limited		Not limited		Somewhat limited Slope	0.28
419A: Flagg-----	Not limited		Not limited		Not limited	
419B: Flagg-----	Not limited		Not limited		Somewhat limited Slope	0.28
419C2: Flagg-----	Not limited		Not limited		Very limited Slope	1.00
440A: Jasper-----	Not limited		Not limited		Not limited	
440B: Jasper-----	Not limited		Not limited		Somewhat limited Slope	0.28
440C2: Jasper-----	Not limited		Not limited		Very limited Slope	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
490A: Odell-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.78	Depth to saturated zone	0.99
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
503B: Rockton-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.43	Slow water movement	0.43	Slope	0.50
					Slow water movement	0.43
					Depth to bedrock	0.10
505D2: Dunbarton-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slow water movement	0.22	Slow water movement	0.22	Depth to bedrock	1.00
	Slope	0.04	Slope	0.04	Gravel content	0.70
					Slow water movement	0.22
505E2: Dunbarton-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Slow water movement	0.22	Slow water movement	0.22	Gravel content	0.70
					Slow water movement	0.22
506B: Hitt-----	Not limited		Not limited		Somewhat limited Slope	0.28
512A: Danabrook-----	Not limited		Not limited		Not limited	
512B: Danabrook-----	Not limited		Not limited		Somewhat limited Slope	0.28
512C2: Danabrook-----	Not limited		Not limited		Very limited Slope	1.00
523A: Dunham-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
526A: Grundelein-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
527B: Kidami-----	Not limited		Not limited		Somewhat limited Slope	0.12

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
527C2: Kidami-----	Not limited		Not limited		Somewhat limited Slope	0.88
527D2: Kidami-----	Somewhat limited Slow water movement Slope	0.21  0.04	Somewhat limited Slow water movement Slope	0.21  0.04	Very limited Slope Slow water movement	1.00  0.21
528A: Lahoguess-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
529A: Selmass-----	Very limited Depth to saturated zone Ponding	1.00  1.00	Very limited Depth to saturated zone Ponding	1.00  1.00	Very limited Depth to saturated zone Ponding	1.00  1.00
543B: Piscasaw-----	Not limited		Not limited		Somewhat limited Slope	0.12
544A: Torox-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
545A: Windere-----	Not limited		Not limited		Not limited	
545B: Windere-----	Not limited		Not limited		Somewhat limited Slope	0.12
561B: Whalan-----	Somewhat limited Slow water movement	0.43	Somewhat limited Slow water movement	0.43	Somewhat limited Slow water movement Slope Depth to bedrock	0.43  0.28 0.01
NewGlarus-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement Slope Depth to bedrock	0.96  0.28 0.03
561C2: Whalan-----	Somewhat limited Slow water movement	0.43	Somewhat limited Slow water movement	0.43	Very limited Slope Slow water movement Depth to bedrock	1.00  0.43 0.06

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
561C2: NewGlarus-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.06
561D2: Whalan-----	Somewhat limited Slope Slow water movement	0.74 0.43	Somewhat limited Slope Slow water movement	0.74 0.43	Very limited Slope Depth to bedrock Slow water movement	1.00 0.71 0.43
NewGlarus-----	Somewhat limited Slow water movement Slope	0.96 0.74	Somewhat limited Slow water movement Slope	0.96 0.74	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.46
566B: Rockton-----	Somewhat limited Slow water movement	0.43	Somewhat limited Slow water movement	0.43	Somewhat limited Depth to bedrock Slow water movement Slope	0.84 0.43 0.28
Dodgeville-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement Slope Depth to bedrock	0.96 0.28 0.06
566C2: Rockton-----	Somewhat limited Slow water movement	0.43	Somewhat limited Slow water movement	0.43	Very limited Slope Depth to bedrock Slow water movement	1.00 0.90 0.43
Dodgeville-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.35
566D2: Rockton-----	Somewhat limited Slope Slow water movement	0.74 0.43	Somewhat limited Slope Slow water movement	0.74 0.43	Very limited Slope Depth to bedrock Slow water movement	1.00 0.97 0.43
Dodgeville-----	Somewhat limited Slow water movement Slope	0.96 0.74	Somewhat limited Slow water movement Slope	0.96 0.74	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.90

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
570A: Martinsville-----	Not limited		Not limited		Not limited	
570B: Martinsville-----	Not limited		Not limited		Somewhat limited Slope	0.12
570C2: Martinsville-----	Not limited		Not limited		Somewhat limited Slope	0.88
570D2: Martinsville-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
618B: Senachwine-----	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Somewhat limited Slope Slow water movement	0.28 0.21
623A: Kishwaukee-----	Not limited		Not limited		Not limited	
623B: Kishwaukee-----	Not limited		Not limited		Somewhat limited Slope	0.28
624B: Caprell-----	Not limited		Not limited		Somewhat limited Slope	0.12
624C2: Caprell-----	Not limited		Not limited		Very limited Slope	1.00
624D2: Caprell-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
624E: Caprell-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
625B: Geryune-----	Not limited		Not limited		Somewhat limited Slope	0.28
626A: Kish-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
635A: Lismod-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
635B: Lismod-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone Slope	0.98 0.12
636B: Parmod-----	Not limited		Not limited		Somewhat limited Slope	0.28
636C2: Parmod-----	Not limited		Not limited		Very limited Slope	1.00
667C2: Kaneville-----	Not limited		Not limited		Very limited Slope	1.00
675A: Greenbush-----	Not limited		Not limited		Not limited	
675B: Greenbush-----	Not limited		Not limited		Somewhat limited Slope	0.28
728B: Winnebago-----	Not limited		Not limited		Somewhat limited Slope	0.28
728C2: Winnebago-----	Not limited		Not limited		Very limited Slope	1.00
766A: Lamartine-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
768C: Backbone-----	Somewhat limited Too sandy Slow water movement	0.68 0.21	Somewhat limited Too sandy Slow water movement	0.68 0.21	Very limited Slope Depth to bedrock Too sandy Slow water movement	1.00 0.84 0.68 0.21
771A: Hayfield-----	Somewhat limited Depth to saturated zone	0.99	Somewhat limited Depth to saturated zone	0.78	Somewhat limited Depth to saturated zone	0.99
772A: Marshan-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
777A: Adrian-----	Very limited Depth to saturated zone Ponding	1.00  1.00	Very limited Depth to saturated zone Ponding	1.00  1.00	Very limited Depth to saturated zone Ponding	1.00  1.00
779B: Chelsea-----	Somewhat limited Too sandy	0.59	Somewhat limited Too sandy	0.59	Somewhat limited Too sandy Slope	0.59 0.28
779D: Chelsea-----	Somewhat limited Too sandy Slope	0.59 0.04	Somewhat limited Too sandy Slope	0.59 0.04	Very limited Slope Too sandy	1.00 0.59
780B: Grellton-----	Not limited		Not limited		Somewhat limited Slope	0.28
780C2: Grellton-----	Not limited		Not limited		Very limited Slope	1.00
781A: Friesland-----	Not limited		Not limited		Not limited	
781B: Friesland-----	Not limited		Not limited		Somewhat limited Slope	0.28
782A: Juneau-----	Not limited		Not limited		Not limited	
783A: Flagler-----	Not limited		Not limited		Not limited	
783B: Flagler-----	Not limited		Not limited		Somewhat limited Slope	0.50
791A: Rush-----	Not limited		Not limited		Not limited	
802B: Orthents, loamy----	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Somewhat limited Slope Slow water movement	0.28 0.21
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
939C2: Rodman-----	Somewhat limited Gravel content	0.02	Somewhat limited Gravel content	0.02	Very limited Gravel content Slope	1.00 0.88

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
939C2: Warsaw-----	Not limited		Not limited		Somewhat limited Slope	0.88
939D2: Rodman-----	Somewhat limited Slope Gravel content	0.04 0.02	Somewhat limited Slope Gravel content	0.04 0.02	Very limited Slope Gravel content	1.00 1.00
Warsaw-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
969E2: Casco-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Rodman-----	Very limited Slope Gravel content	1.00 0.02	Very limited Slope Gravel content	1.00 0.02	Very limited Slope Gravel content	1.00 1.00
1082A: Millington-----	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 1.00 0.60
1100A: Palms-----	Very limited Depth to saturated zone Flooding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Organic matter content	1.00 1.00
1103A: Houghton-----	Very limited Depth to saturated zone Flooding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Organic matter content	1.00 1.00
1776A: Comfrey, frequently flooded-----	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00
Comfrey, occasionally flooded-----	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 1.00 0.60

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1777A:						
Adrian-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Organic matter content	1.00	Organic matter content	1.00
	Ponding	1.00	Ponding	1.00	Flooding	1.00
3082A:						
Millington-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
3107A:						
Sawmill-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
3415A:						
Orion-----	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Depth to saturated zone	0.75	Flooding	1.00
	Depth to saturated zone	0.98	Flooding	0.40	Depth to saturated zone	0.98
3776A:						
Comfrey-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
3800A:						
Psamments-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Too sandy	1.00	Too sandy	1.00
	Too sandy	1.00	Flooding	0.40	Flooding	1.00
8082A:						
Millington-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60
8776A:						
Comfrey-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60
8782A:						
Juneau-----	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9061A: Atterberry-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
9068A: Sable-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
9278A: Stronghurst-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00

Table 15b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Not limited		Not limited		Not limited	
21C2: Pecatonica-----	Not limited		Not limited		Not limited	
22B: Westville-----	Not limited		Not limited		Not limited	
22C2: Westville-----	Not limited		Not limited		Not limited	
22D2: Westville-----	Not limited		Not limited		Somewhat limited Slope	0.96
51A: Muscatune-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
59A: Lisbon-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
61A: Atterberry-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
62A: Herbert-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
68A: Sable-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
68A+: Sable-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
86A: Osco-----	Not limited		Not limited		Not limited	
86B: Osco-----	Not limited		Not limited		Not limited	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
87A: Dickinson-----	Not limited		Not limited		Not limited	
100A: Palms-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
102A: La Hogue-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
103A: Houghton-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
104A: Virgil-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
119B: Elco-----	Not limited		Not limited		Not limited	
125A: Selma-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
134A: Camden-----	Not limited		Not limited		Not limited	
146A: Elliott-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
148A: Proctor-----	Not limited		Not limited		Not limited	
148B: Proctor-----	Not limited		Not limited		Not limited	
149A: Brenton-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
152A: Drummer-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
152A+:						
Drummer-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
153A:						
Pella-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
172A:						
Hoopeston-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to	0.44	Depth to	0.44	Depth to	0.75
	saturated zone		saturated zone		saturated zone	
188A:						
Beardstown-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to	0.50	Depth to	0.50	Depth to	0.78
	saturated zone		saturated zone		saturated zone	
197A:						
Troxel-----	Not limited		Not limited		Not limited	
198A:						
Elburn-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to	0.44	Depth to	0.44	Depth to	0.75
	saturated zone		saturated zone		saturated zone	
199A:						
Plano-----	Not limited		Not limited		Not limited	
199B:						
Plano-----	Not limited		Not limited		Not limited	
199C2:						
Plano-----	Not limited		Not limited		Not limited	
206A:						
Thorp-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
219A:						
Millbrook-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to	0.86	Depth to	0.86	Depth to	0.94
	saturated zone		saturated zone		saturated zone	
221B:						
Parr-----	Not limited		Not limited		Not limited	
221C2:						
Parr-----	Not limited		Not limited		Not limited	
223B:						
Varna-----	Not limited		Not limited		Not limited	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
227B: Argyle-----	Not limited		Not limited		Not limited	
242A: Kendall-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
243A: St. Charles-----	Not limited		Not limited		Not limited	
243B: St. Charles-----	Not limited		Not limited		Not limited	
243C2: St. Charles-----	Not limited		Not limited		Not limited	
278A: Stronghurst-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
279A: Rozetta-----	Not limited		Not limited		Not limited	
280B: Fayette-----	Not limited		Not limited		Not limited	
280C2: Fayette-----	Not limited		Not limited		Not limited	
290A: Warsaw-----	Not limited		Not limited		Not limited	
290B: Warsaw-----	Not limited		Not limited		Not limited	
290C2: Warsaw-----	Not limited		Not limited		Not limited	
290D2: Warsaw-----	Not limited		Not limited		Somewhat limited Slope	0.04
293A: Andres-----	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone	0.78
297B: Ringwood-----	Not limited		Not limited		Not limited	
297C2: Ringwood-----	Not limited		Not limited		Not limited	
297D2: Ringwood-----	Not limited		Not limited		Somewhat limited Slope	0.04

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
310B: McHenry-----	Not limited		Not limited		Not limited	
310C2: McHenry-----	Not limited		Not limited		Not limited	
310D2: McHenry-----	Not limited		Not limited		Somewhat limited Slope	0.04
325B: Dresden-----	Not limited		Not limited		Not limited	
325C2: Dresden-----	Not limited		Not limited		Not limited	
327B: Fox-----	Not limited		Not limited		Not limited	
327C2: Fox-----	Not limited		Not limited		Not limited	
327D2: Fox-----	Not limited		Not limited		Somewhat limited Slope	0.04
329A: Will-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
332A: Billett-----	Not limited		Not limited		Not limited	
332B: Billett-----	Not limited		Not limited		Not limited	
343A: Kane-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
344A: Harvard-----	Not limited		Not limited		Not limited	
344B: Harvard-----	Not limited		Not limited		Not limited	
354A: Hononegah-----	Somewhat limited Too sandy	0.78	Somewhat limited Too sandy	0.78	Somewhat limited Droughty Too sandy Content of large stones	0.96 0.50 0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
354B: Hononegah-----	Somewhat limited Too sandy	0.78	Somewhat limited Too sandy	0.78	Somewhat limited Droughty Too sandy Content of large stones	0.98 0.50 0.01
361B: Kidder-----	Not limited		Not limited		Not limited	
361C2: Kidder-----	Not limited		Not limited		Not limited	
361D2: Kidder-----	Not limited		Not limited		Somewhat limited Slope	0.04
361D3: Kidder-----	Not limited		Not limited		Somewhat limited Slope	0.04
361E2: Kidder-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope	1.00
363C2: Griswold-----	Not limited		Not limited		Not limited	
363D2: Griswold-----	Not limited		Not limited		Somewhat limited Slope	0.04
369A: Waupecan-----	Not limited		Not limited		Not limited	
379A: Dakota-----	Not limited		Not limited		Not limited	
387A: Ockley-----	Not limited		Not limited		Not limited	
387B: Ockley-----	Not limited		Not limited		Not limited	
403E: Elizabeth-----	Somewhat limited Slope	0.95	Not limited		Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.82
412B: Ogle-----	Not limited		Not limited		Not limited	
419A: Flagg-----	Not limited		Not limited		Not limited	
419B: Flagg-----	Not limited		Not limited		Not limited	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
419C2: Flagg-----	Not limited		Not limited		Not limited	
440A: Jasper-----	Not limited		Not limited		Not limited	
440B: Jasper-----	Not limited		Not limited		Not limited	
440C2: Jasper-----	Not limited		Not limited		Not limited	
490A: Odell-----	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone	0.78
503B: Rockton-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.10
505D2: Dunbarton-----	Not limited		Not limited		Very limited Depth to bedrock Droughty Slope	1.00 0.16 0.04
505E2: Dunbarton-----	Somewhat limited Slope	0.02	Not limited		Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.61
506B: Hitt-----	Not limited		Not limited		Not limited	
512A: Danabrook-----	Not limited		Not limited		Not limited	
512B: Danabrook-----	Not limited		Not limited		Not limited	
512C2: Danabrook-----	Not limited		Not limited		Not limited	
523A: Dunham-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
526A: Grundelein-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
527B: Kidami-----	Not limited		Not limited		Not limited	
527C2: Kidami-----	Not limited		Not limited		Not limited	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
527D2: Kidami-----	Not limited		Not limited		Somewhat limited Slope	0.04
528A: Lahoguess-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
529A: Selmass-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
543B: Piscasaw-----	Not limited		Not limited		Not limited	
544A: Torox-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
545A: Windere-----	Not limited		Not limited		Not limited	
545B: Windere-----	Not limited		Not limited		Not limited	
561B: Whalan-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.01
NewGlarus-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.03
561C2: Whalan-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.06
NewGlarus-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.06
561D2: Whalan-----	Not limited		Not limited		Somewhat limited Slope Depth to bedrock	0.74 0.71
NewGlarus-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope Depth to bedrock	0.74 0.46
566B: Rockton-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.84
Dodgeville-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.06

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
566C2: Rockton-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.90
Dodgeville-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.35
566D2: Rockton-----	Not limited		Not limited		Somewhat limited Depth to bedrock Slope	0.97 0.74
Dodgeville-----	Not limited		Not limited		Somewhat limited Depth to bedrock Slope Droughty	0.90 0.74 0.01
570A: Martinsville-----	Not limited		Not limited		Not limited	
570B: Martinsville-----	Not limited		Not limited		Not limited	
570C2: Martinsville-----	Not limited		Not limited		Not limited	
570D2: Martinsville-----	Not limited		Not limited		Somewhat limited Slope	0.04
618B: Senachwine-----	Not limited		Not limited		Not limited	
623A: Kishwaukee-----	Not limited		Not limited		Not limited	
623B: Kishwaukee-----	Not limited		Not limited		Not limited	
624B: Caprell-----	Not limited		Not limited		Not limited	
624C2: Caprell-----	Not limited		Not limited		Not limited	
624D2: Caprell-----	Not limited		Not limited		Somewhat limited Slope	0.04
624E: Caprell-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope	1.00
625B: Geryune-----	Not limited		Not limited		Not limited	
626A: Kish-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
635A: Lismod-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
635B: Lismod-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
636B: Parmod-----	Not limited		Not limited		Not limited	
636C2: Parmod-----	Not limited		Not limited		Not limited	
667C2: Kaneville-----	Not limited		Not limited		Not limited	
675A: Greenbush-----	Not limited		Not limited		Not limited	
675B: Greenbush-----	Not limited		Not limited		Not limited	
728B: Winnebago-----	Not limited		Not limited		Not limited	
728C2: Winnebago-----	Not limited		Not limited		Not limited	
766A: Lamartine-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
768C: Backbone-----	Somewhat limited Too sandy	0.68	Somewhat limited Too sandy	0.68	Somewhat limited Depth to bedrock Droughty	0.84 0.26
771A: Hayfield-----	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone	0.78
772A: Marshan-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
777A: Adrian-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
779B: Chelsea-----	Somewhat limited Too sandy	0.59	Somewhat limited Too sandy	0.59	Somewhat limited Droughty	0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
779D: Chelsea-----	Somewhat limited Too sandy	0.59	Somewhat limited Too sandy	0.59	Somewhat limited Slope	0.04
780B: Grellton-----	Not limited		Not limited		Not limited	
780C2: Grellton-----	Not limited		Not limited		Not limited	
781A: Friesland-----	Not limited		Not limited		Not limited	
781B: Friesland-----	Not limited		Not limited		Not limited	
782A: Juneau-----	Not limited		Not limited		Not limited	
783A: Flagler-----	Not limited		Not limited		Not limited	
783B: Flagler-----	Not limited		Not limited		Not limited	
791A: Rush-----	Not limited		Not limited		Not limited	
802B: Orthents, loamy----	Not limited		Not limited		Not limited	
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
939C2: Rodman-----	Not limited		Not limited		Somewhat limited Droughty Gravel content	0.94 0.02
Warsaw-----	Not limited		Not limited		Not limited	
939D2: Rodman-----	Not limited		Not limited		Somewhat limited Droughty Slope Gravel content	0.97 0.04 0.02
Warsaw-----	Not limited		Not limited		Somewhat limited Slope	0.04
969E2: Casco-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope Droughty	1.00 0.05

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
969E2: Rodman-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope Droughty Gravel content	1.00 1.00 0.02
1082A: Millington-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 1.00 0.60
1100A: Palms-----	Very limited Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00	Very limited Flooding Organic matter content Ponding	1.00 1.00 1.00
1103A: Houghton-----	Very limited Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00	Very limited Flooding Organic matter content Ponding	1.00 1.00 1.00
1776A: Comfrey, frequently flooded-----	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 1.00
Comfrey, occasionally flooded-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.60
1777A: Adrian-----	Very limited Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00	Very limited Flooding Organic matter content Ponding	1.00 1.00 1.00
3082A: Millington-----	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3107A: Sawmill-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40	Ponding	1.00
3415A: Orion-----	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
3776A: Comfrey-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40	Ponding	1.00
3800A: Psammets-----	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Droughty	0.69
					Too sandy	0.50
8082A: Millington-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8776A: Comfrey-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8782A: Juneau-----	Not limited		Not limited		Somewhat limited Flooding	0.60
9061A: Atterberry-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
9068A: Sable-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
9278A: Stronghurst-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94

Table 16.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
21B: Pecatonica-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
21C2: Pecatonica-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
22B: Westville-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
22C2: Westville-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
22D2: Westville-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
51A: Muscatune-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
59A: Lisbon-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
61A: Atterberry-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
62A: Herbert-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
68A: Sable-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
68A+: Sable-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
86A: Osco-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
86B: Osco-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
87A: Dickinson-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
100A: Palms-----	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
102A: La Hogue-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
103A: Houghton-----	Poor	Poor	Poor	Poor	Very poor.	Good	Good	Poor	Poor	Good.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
104A: Virgil-----	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
119B: Elco-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
125A: Selma-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
134A: Camden-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
146A: Elliott-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
148A: Proctor-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very 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	Poor	Good	Good	Fair	Fair	Good.
152A+: Drummer-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
153A: Pella-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
172A: Hoopeston-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
188A: Beardstown-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
197A: Troxel-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
198A: Elburn-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
199A: Plano-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
199B: Plano-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
199C2: Plano-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
206A: Thorp-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
219A: Millbrook-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
221B: 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.
227B: Argyle-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
242A: Kendall-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
243A: St. Charles-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
243B: St. Charles-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
243C2: St. Charles-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
278A: Stronghurst-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
279A: Rozetta-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
280B: Fayette-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
280C2: Fayette-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
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.
290C2: Warsaw-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
290D2: Warsaw-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
293A: Andres-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
297B: Ringwood-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
297C2: Ringwood-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
297D2: Ringwood-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
310B: McHenry-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
310C2: McHenry-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
310D2: McHenry-----	Fair	Good	Good	Good	Good	Very 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.
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	Poor	Good	Good	Fair	Fair	Good.
332A: Billett-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
332B: Billett-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
343A: Kane-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
344A: Harvard-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
344B: Harvard-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
354A: Hononegah-----	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
354B: Hononegah-----	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
361B: Kidder-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
361C2: Kidder-----	Fair	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.
361D3: 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.
363C2: Griswold-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
363D2: Griswold-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
369A: Waupecan-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
379A: Dakota-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
387A: Ockley-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
387B: Ockley-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
403E: Elizabeth-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
412B: Ogle-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
419A: Flagg-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
419B: Flagg-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
419C2: Flagg-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
440A: Jasper-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
440B: Jasper-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
440C2: Jasper-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
490A: Odell-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
503B: Rockton-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
505D2: Dunbarton-----	Poor	Poor	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
505E2: Dunbarton-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
506B: Hitt-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
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.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
512C2: Danabrook-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
523A: Dunham-----	Fair	Fair	Fair	Fair	Poor	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-----	Fair	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.
528A: Lahoguess-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
529A: Selmass-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
543B: Piscasaw-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
544A: Torox-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
545A: Windere-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
545B: Windere-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
561B: Whalan-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NewGlarus-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
561C2: Whalan-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NewGlarus-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
561D2: Whalan-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NewGlarus-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
566B: Rockton-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Dodgeville-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
566C2: Rockton-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Dodgeville-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
566D2: Rockton-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Dodgeville-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
570A: Martinsville-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
570B: Martinsville-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
570C2: Martinsville-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
570D2: Martinsville-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
618B: Senachwine-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
623A: Kishwaukee-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
623B: Kishwaukee-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
624B: Caprell-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
624C2: Caprell-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
624D2: Caprell-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
624E: Caprell-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
625B: Geryune-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
626A: Kish-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
635A: Lismod-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
635B: Lismod-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
636B: Parmod-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
636C2: Parmod-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
667C2: Kaneville-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
675A: Greenbush-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
675B: Greenbush-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
728B: Winnebago-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
728C2: Winnebago-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
766A: Lamartine-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
768C: Backbone-----	Poor	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
771A: Hayfield-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
772A: Marshan-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
777A: Adrian-----	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
779B: Chelsea-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
779D: Chelsea-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
780B: Grellton-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
780C2: Grellton-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
781A: Friesland-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
781B: Friesland-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
782A: Juneau-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
783A: Flagler-----	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
783B: Flagler-----	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
791A: Rush-----	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.
864. Pits, quarry										
865. Pits, gravel										
939C2: Rodman-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Warsaw-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
939D2: Rodman-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Warsaw-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
969E2: Casco-----	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Rodman-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
1082A: Millington-----	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
1100A: Palms-----	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
1103A: Houghton-----	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
1776A: Comfrey, frequently flooded-----	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
Comfrey, occasionally flooded-----	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
1777A: Adrian-----	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
3082A: Millington-----	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
3107A: Sawmill-----	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
3415A: Orion-----	Poor	Fair	Fair	Good	Fair	Fair	Fair	Fair	Good	Fair.
3776A: Comfrey-----	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
3800A: Psammets-----	Poor	Poor	Fair	Poor	Poor	Poor	Very poor.	Poor	Poor	Very poor.
8082A: Millington-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
8776A: Comfrey-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
8782A: Juneau-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
9061A: Atterberry-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
9068A: Sable-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
9278A: Stronghurst-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.

Table 17a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
21C2: Pecatonica-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
22B: Westville-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
22C2: Westville-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
22D2: Westville-----	Somewhat limited Slope Shrink-swell	0.96 0.50	Somewhat limited Slope Shrink-swell	0.96 0.50	Very limited Slope Shrink-swell	1.00 0.50
51A: Muscatune-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50
59A: Lisbon-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50
61A: Atterberry-----	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50
62A: Herbert-----	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Shrink-swell	1.00 0.50
68A: Sable-----	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A+:						
Sable-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
86A:						
Oscos-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
86B:						
Oscos-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
87A:						
Dickinson-----	Not limited		Not limited		Not limited	
100A:						
Palms-----	Very limited		Very limited		Very limited	
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Ponding	1.00	Organic matter content	1.00
	Ponding	1.00			Ponding	1.00
102A:						
La Hogue-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50			Shrink-swell	0.50
103A:						
Houghton-----	Very limited		Very limited		Very limited	
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
104A:						
Virgil-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
119B:						
Elco-----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	1.00	Shrink-swell	0.50
			Depth to saturated zone	0.99		

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
125A: Selma-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
134A: Camden-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
146A: Elliott-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
148A: Proctor-----	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
148B: Proctor-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
149A: Brenton-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
152A: Drummer-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
152A+: Drummer-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
			Shrink-swell	0.50		
153A: Pella-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
172A: Hoopeston-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
188A: Beardstown-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
197A: Troxel-----	Not limited		Not limited		Not limited	
198A: Elburn-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98  0.50	Very limited Depth to saturated zone Shrink-swell	1.00  0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.98  0.50
199A: Plano-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
199B: Plano-----	Somewhat limited Shrink-swell	0.27	Somewhat limited Shrink-swell	0.27	Somewhat limited Shrink-swell	0.27
199C2: Plano-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97  0.50
206A: Thorp-----	Very limited Depth to saturated zone Ponding Shrink-swell	1.00  1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00  1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00  1.00 0.50
219A: Millbrook-----	Very limited Depth to saturated zone Shrink-swell	1.00  0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Shrink-swell	1.00  0.50
221B: Parr-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone	0.99	Somewhat limited Shrink-swell	0.50
221C2: Parr-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone	0.99	Somewhat limited Slope Shrink-swell	0.97  0.50
223B: Varna-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99  0.50	Somewhat limited Shrink-swell	0.50
227B: Argyle-----	Not limited		Not limited		Not limited	
242A: Kendall-----	Very limited Depth to saturated zone Shrink-swell	1.00  0.50	Very limited Depth to saturated zone Shrink-swell	1.00  0.50	Very limited Depth to saturated zone Shrink-swell	1.00  0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
243A: St. Charles-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
243B: St. Charles-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
243C2: St. Charles-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
278A: Stronghurst-----	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50
279A: Rozetta-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Shrink-swell	0.50
280B: Fayette-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
280C2: Fayette-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
290A: Warsaw-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
290B: Warsaw-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
290C2: Warsaw-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell Slope	0.50 0.12
290D2: Warsaw-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Slope	0.04	Very limited Slope Shrink-swell	1.00 0.50
293A: Andres-----	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50
297B: Ringwood-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297C2: Ringwood-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell Slope	0.50 0.12
297D2: Ringwood-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Slope	0.04	Very limited Slope Shrink-swell	1.00 0.50
310B: McHenry-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
310C2: McHenry-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell Slope	0.50 0.12
310D2: McHenry-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Slope	0.04	Very limited Slope Shrink-swell	1.00 0.50
325B: Dresden-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
325C2: Dresden-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell Slope	0.50 0.12
327B: Fox-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
327C2: Fox-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell Slope	0.50 0.12
327D2: Fox-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Slope	0.04	Very limited Slope Shrink-swell	1.00 0.50
329A: Will-----	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00 0.50
332A: Billett-----	Not limited		Not limited		Not limited	
332B: Billett-----	Not limited		Not limited		Not limited	

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
343A: Kane-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50
344A: Harvard-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
344B: Harvard-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
354A: Hononegah-----	Not limited		Not limited		Not limited	
354B: Hononegah-----	Not limited		Not limited		Not limited	
361B: Kidder-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
361C2: Kidder-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
361D2: Kidder-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Slope	0.04	Very limited Slope Shrink-swell	1.00 0.50
361D3: Kidder-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
361E2: Kidder-----	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope	1.00	Very limited Slope Shrink-swell	1.00 0.50
363C2: Griswold-----	Not limited		Not limited		Somewhat limited Slope	0.50
363D2: Griswold-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
369A: Waupecan-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
379A: Dakota-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
387A: Ockley-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
387B: Ockley-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
403E: Elizabeth-----	Very limited Depth to hard bedrock Slope Content of large stones	1.00  1.00 0.62	Very limited Depth to hard bedrock Slope Content of large stones	1.00  1.00 0.62	Very limited Slope Depth to hard bedrock Content of large stones	1.00  1.00 0.62
412B: Ogle-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
419A: Flagg-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
419B: Flagg-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
419C2: Flagg-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Slope Shrink-swell	0.97 0.50
440A: Jasper-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
440B: Jasper-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
440C2: Jasper-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Slope Shrink-swell	0.97 0.50
490A: Odell-----	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.99
503B: Rockton-----	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.10	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.10

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
505D2: Dunbarton-----	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.04	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.04	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 1.00 0.50
505E2: Dunbarton-----	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 1.00 1.00	Very limited Shrink-swell Depth to hard bedrock Slope	1.00 1.00 1.00	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 1.00
506B: Hitt-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.84 0.50	Somewhat limited Shrink-swell	0.50
512A: Danabrook-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell	0.50
512B: Danabrook-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell	0.50
512C2: Danabrook-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone	0.99	Somewhat limited Slope Shrink-swell	0.97 0.50
523A: Dunham-----	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50
526A: Grundelein-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50
527B: Kidami-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell	0.50
527C2: Kidami-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell Slope	0.50 0.12

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
527D2: Kidami-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Depth to saturated zone Slope	0.99 0.04	Very limited Slope Shrink-swell	1.00 0.50
528A: Lahoguess-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50
529A: Selmass-----	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50
543B: Piscasaw-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
544A: Torox-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50
545A: Windere-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell	0.50
545B: Windere-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell	0.50
561B: Whalan-----	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.01	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.01
NewGlarus-----	Very limited Shrink-swell Depth to hard bedrock	1.00 0.03	Very limited Shrink-swell Depth to hard bedrock	1.00 1.00	Very limited Shrink-swell Depth to hard bedrock	1.00 0.03
561C2: Whalan-----	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.06	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Somewhat limited Slope Shrink-swell Depth to hard bedrock	0.97 0.50 0.06

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
561C2:						
NewGlarus-----	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Depth to hard bedrock	0.06	Depth to hard bedrock	1.00	Slope	0.97
					Depth to hard bedrock	0.06
561D2:						
Whalan-----	Somewhat limited		Very limited		Very limited	
	Slope	0.74	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.71	Slope	0.74	Depth to hard bedrock	0.71
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
NewGlarus-----	Somewhat limited		Very limited		Very limited	
	Slope	0.74	Depth to hard bedrock	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	0.74	Shrink-swell	0.50
	Depth to hard bedrock	0.46	Shrink-swell	0.50	Depth to hard bedrock	0.46
566B:						
Rockton-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Depth to hard bedrock	0.84
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Dodgeville-----	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Depth to hard bedrock	0.06	Depth to hard bedrock	1.00	Depth to hard bedrock	0.06
566C2:						
Rockton-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Slope	0.97
	Shrink-swell	0.50	Shrink-swell	0.50	Depth to hard bedrock	0.90
					Shrink-swell	0.50
Dodgeville-----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to hard bedrock	1.00	Slope	0.97
	Depth to hard bedrock	0.35	Shrink-swell	0.50	Shrink-swell	0.50
					Depth to hard bedrock	0.35
566D2:						
Rockton-----	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Slope	1.00
	Slope	0.74	Slope	0.74	Depth to hard bedrock	0.97
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Dodgeville-----	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
	Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Shrink-swell	1.00
	Slope	0.74	Slope	0.74	Depth to hard bedrock	0.90
570A:						
Martinsville-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
570B: Martinsville-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
570C2: Martinsville-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
570D2: Martinsville-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
618B: Senachwine-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
623A: Kishwaukee-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
623B: Kishwaukee-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
624B: Caprell-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
624C2: Caprell-----	Not limited		Not limited		Somewhat limited Slope	0.50
624D2: Caprell-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Slope	0.04	Very limited Slope Shrink-swell	1.00 0.50
624E: Caprell-----	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
625B: Geryune-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone	0.99	Somewhat limited Shrink-swell	0.50
626A: Kish-----	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50
635A: Lismod-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
635B: Lismod-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98  0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Shrink-swell	0.98  0.50
636B: Parmod-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
636C2: Parmod-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Slope Shrink-swell	0.97  0.50
667C2: Kaneville-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99  0.50	Somewhat limited Slope Shrink-swell	0.97  0.50
675A: Greenbush-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50  0.15	Somewhat limited Shrink-swell	0.50
675B: Greenbush-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50  0.15	Somewhat limited Shrink-swell	0.50
728B: Winnebago-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
728C2: Winnebago-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97  0.50
766A: Lamartine-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98  0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Shrink-swell	0.98  0.50
768C: Backbone-----	Somewhat limited Depth to hard bedrock Shrink-swell	0.84  0.50	Very limited Depth to hard bedrock Shrink-swell	1.00  0.50	Somewhat limited Slope Depth to hard bedrock Shrink-swell	0.97  0.84  0.50
771A: Hayfield-----	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.99

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
772A: Marshan-----	Very limited Depth to saturated zone Ponding	1.00  1.00	Very limited Depth to saturated zone Ponding	1.00  1.00	Very limited Depth to saturated zone Ponding	1.00  1.00
777A: Adrian-----	Very limited Subsidence Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00 1.00	Very limited Subsidence Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Subsidence Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00 1.00
779B: Chelsea-----	Not limited		Not limited		Not limited	
779D: Chelsea-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
780B: Grellton-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
780C2: Grellton-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
781A: Friesland-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
781B: Friesland-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
782A: Juneau-----	Not limited		Somewhat limited Depth to saturated zone	0.24	Not limited	
783A: Flagler-----	Not limited		Not limited		Not limited	
783B: Flagler-----	Not limited		Not limited		Not limited	
791A: Rush-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
802B: Orthents, loamy----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.47	Somewhat limited Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
939C2: Rodman-----	Not limited		Not limited		Somewhat limited Slope	0.12
Warsaw-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell Slope	0.50 0.12
939D2: Rodman-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
Warsaw-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Slope	0.04	Very limited Slope Shrink-swell	1.00 0.50
969E2: Casco-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Rodman-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
1082A: Millington-----	Very limited Flooding Depth to saturated zone Ponding Shrink-swell	1.00 1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Ponding Shrink-swell	1.00 1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Ponding Shrink-swell	1.00 1.00 1.00 0.50
1100A: Palms-----	Very limited Ponding Subsidence Flooding Depth to saturated zone Organic matter content	1.00 1.00 1.00 1.00 1.00	Very limited Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited Ponding Subsidence Flooding Depth to saturated zone Organic matter content	1.00 1.00 1.00 1.00 1.00
1103A: Houghton-----	Very limited Ponding Subsidence Flooding Depth to saturated zone Organic matter content	1.00 1.00 1.00 1.00 1.00	Very limited Ponding Subsidence Flooding Depth to saturated zone Organic matter content	1.00 1.00 1.00 1.00 1.00	Very limited Ponding Subsidence Flooding Depth to saturated zone Organic matter content	1.00 1.00 1.00 1.00 1.00

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1776A: Comfrey, frequently flooded-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Comfrey, occasionally flooded-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
1777A: Adrian-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00			Organic matter content	1.00
3082A: Millington-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
			Shrink-swell	0.50		
3107A: Sawmill-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3415A: Orion-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
3776A: Comfrey-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3800A: Psamments-----	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.15	Very limited Flooding	1.00
8082A: Millington-----	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Ponding Shrink-swell	1.00 1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00
8776A: Comfrey-----	Very limited Flooding Depth to saturated zone Ponding Shrink-swell	1.00 1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Ponding Shrink-swell	1.00 1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Ponding Shrink-swell	1.00 1.00 1.00 0.50
8782A: Juneau-----	Very limited Flooding	1.00	Very limited Flooding Shrink-swell Depth to saturated zone	1.00 0.50 0.24	Very limited Flooding	1.00
9061A: Atterberry-----	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50
9068A: Sable-----	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50
9278A: Stronghurst-----	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50

Table 17b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
21C2: Pecatonica-----	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
22B: Westville-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
22C2: Westville-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
22D2: Westville-----	Very limited Low strength Slope Shrink-swell Frost action	 1.00 0.96 0.50 0.50	Somewhat limited Slope Cutbanks cave	 0.96 0.10	Somewhat limited Slope	  0.96
51A: Muscatune-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.75 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00 0.10	Somewhat limited Depth to saturated zone	  0.75
59A: Lisbon-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.75 0.50	Very limited Depth to saturated zone Dense layer Cutbanks cave	 1.00 0.50 0.10	Somewhat limited Depth to saturated zone	  0.75
61A: Atterberry-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.94 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00 0.10	Somewhat limited Depth to saturated zone	  0.94

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
62A:						
Herbert-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.94
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.94	Dense layer	0.50		
	saturated zone		Cutbanks cave	0.10		
	Shrink-swell	0.50				
68A:						
Sable-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
68A+:						
Sable-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
86A:						
Osc-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.15		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
86B:						
Osc-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.15		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
87A:						
Dickinson-----	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
100A:						
Palms-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Subsidence	1.00	Ponding	1.00	Ponding	1.00
	Frost action	1.00	Organic matter	1.00		
	Ponding	1.00	content			
			Cutbanks cave	0.10		
102A:						
La Hogue-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to	0.75	Depth to	1.00	Depth to	0.75
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
	Low strength	0.22				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
103A: Houghton-----	Very limited Depth to saturated zone Subsidence Frost action Ponding	 1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Organic matter content Ponding	 1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	 1.00 1.00
104A: Virgil-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.94 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00 1.00	Somewhat limited Depth to saturated zone	 0.94
119B: Elco-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.99 0.10	Not limited	
125A: Selma-----	Very limited Depth to saturated zone Frost action Ponding Shrink-swell	 1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Cutbanks cave Ponding	 1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	 1.00 1.00
134A: Camden-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited	
146A: Elliott-----	Very limited Low strength Depth to saturated zone Shrink-swell Frost action	 1.00 0.88 0.50 0.50	Very limited Depth to saturated zone Dense layer Cutbanks cave	 1.00 0.50 0.10	Somewhat limited Depth to saturated zone	 0.88
148A: Proctor-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited	
148B: Proctor-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited	

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
149A: Brenton-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	1.00		
	saturated zone					
	Shrink-swell	0.50				
152A: Drummer-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00				
	Shrink-swell	0.50				
152A+: Drummer-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00				
	Shrink-swell	0.50				
153A: Pella-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00				
	Shrink-swell	0.50				
172A: Hoopeston-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to	0.75	Depth to	1.00	Depth to	0.75
	saturated zone		saturated zone		saturated zone	
	Frost action	0.50	Cutbanks cave	1.00		
188A: Beardstown-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.78
	Depth to	0.78	saturated zone		saturated zone	
	saturated zone		Cutbanks cave	1.00		
197A: Troxel-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
198A: Elburn-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	1.00		
	saturated zone					
	Shrink-swell	0.50				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
199A: Plano-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited	
199B: Plano-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.27	Very limited Cutbanks cave	 1.00	Not limited	
199C2: Plano-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited	
206A: Thorp-----	Very limited Depth to saturated zone Frost action Low strength Ponding Shrink-swell	 1.00  1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Cutbanks cave Ponding	 1.00  1.00 1.00	Very limited Depth to saturated zone Ponding	 1.00  1.00
219A: Millbrook-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.94 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00  1.00	Somewhat limited Depth to saturated zone	 0.94
221B: Parr-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Depth to saturated zone Dense layer Cutbanks cave	 0.99  0.50 0.10	Not limited	
221C2: Parr-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Depth to saturated zone Dense layer Cutbanks cave	 0.99  0.50 0.10	Not limited	
223B: Varna-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Depth to saturated zone Dense layer Cutbanks cave Too clayey	 0.99  0.50 0.10 0.03	Not limited	
227B: Argyle-----	Somewhat limited Frost action	 0.50	Very limited Cutbanks cave	 1.00	Not limited	

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
242A: Kendall-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.94 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00  0.10	Somewhat limited Depth to saturated zone	 0.94
243A: St. Charles-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
243B: St. Charles-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
243C2: St. Charles-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
278A: Stronghurst-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.94 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00  0.10	Somewhat limited Depth to saturated zone	 0.94
279A: Rozetta-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.15  0.10	Not limited	
280B: Fayette-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
280C2: Fayette-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
290A: Warsaw-----	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290B: Warsaw-----	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
	Low strength	0.22				
290C2: Warsaw-----	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
290D2: Warsaw-----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Slope	0.04				
293A: Andres-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Depth to	0.78
	Depth to	0.78	saturated zone		saturated zone	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
297B: Ringwood-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
297C2: Ringwood-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
297D2: Ringwood-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Slope	0.04				
310B: McHenry-----	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
310C2: McHenry-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
310D2: McHenry-----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Slope	0.04				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
325B: Dresden-----	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
325C2: Dresden-----	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
327B: Fox-----	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
327C2: Fox-----	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
327D2: Fox-----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Slope	0.04				
329A: Will-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00				
	Shrink-swell	0.50				
332A: Billett-----	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
332B: Billett-----	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
343A: Kane-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
344A: Harvard-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
344B: Harvard-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited	
354A: Hononegah-----	Not limited		Very limited Cutbanks cave	 1.00	Somewhat limited Droughty Too sandy Content of large stones	 0.96 0.50 0.01
354B: Hononegah-----	Not limited		Very limited Cutbanks cave	 1.00	Somewhat limited Droughty Too sandy Content of large stones	 0.98 0.50 0.01
361B: Kidder-----	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
361C2: Kidder-----	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
361D2: Kidder-----	Somewhat limited Shrink-swell Frost action Slope	 0.50 0.50 0.04	Somewhat limited Cutbanks cave Slope	 0.10 0.04	Somewhat limited Slope	 0.04
361D3: Kidder-----	Somewhat limited Frost action Slope	 0.50 0.04	Somewhat limited Cutbanks cave Slope	 0.10 0.04	Somewhat limited Slope	 0.04
361E2: Kidder-----	Very limited Slope Shrink-swell Frost action	 1.00 0.50 0.50	Very limited Slope Cutbanks cave	 1.00 0.10	Very limited Slope	 1.00
363C2: Griswold-----	Somewhat limited Frost action Low strength	 0.50 0.22	Very limited Cutbanks cave	 1.00	Not limited	
363D2: Griswold-----	Somewhat limited Frost action Low strength Slope	 0.50 0.22 0.04	Very limited Cutbanks cave Slope	 1.00 0.04	Somewhat limited Slope	 0.04

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
369A: Waupecan-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited	
379A: Dakota-----	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	
387A: Ockley-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	
387B: Ockley-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	
403E: Elizabeth-----	Very limited Depth to hard bedrock Slope Content of large stones Frost action	 1.00 1.00 0.62 0.50	Very limited Depth to hard bedrock Slope Content of large stones Cutbanks cave	 1.00 1.00 0.62 0.10	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.82
412B: Ogle-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
419A: Flagg-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
419B: Flagg-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
419C2: Flagg-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
440A: Jasper-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
440B: Jasper-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	
440C2: Jasper-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	
490A: Odell-----	Somewhat limited Depth to saturated zone Frost action	 0.78 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00 0.10	Somewhat limited Depth to saturated zone	 0.78
503B: Rockton-----	Very limited Low strength Shrink-swell Frost action Depth to hard bedrock	 1.00 0.50 0.50 0.10	Very limited Depth to hard bedrock Cutbanks cave	 1.00 0.10	Somewhat limited Depth to bedrock	 0.10
505D2: Dunbarton-----	Very limited Depth to hard bedrock Low strength Shrink-swell Frost action Slope	 1.00 1.00 0.50 0.50 0.04	Very limited Depth to hard bedrock Cutbanks cave Slope	 1.00 0.10 0.04	Very limited Depth to bedrock Droughty Slope	 1.00 0.16 0.04
505E2: Dunbarton-----	Very limited Depth to hard bedrock Low strength Shrink-swell Slope Frost action	 1.00 1.00 1.00 1.00 0.50	Very limited Depth to hard bedrock Cutbanks cave	 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.61
506B: Hitt-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Very limited Too clayey Depth to hard bedrock Cutbanks cave	 1.00 0.84 0.10	Not limited	
512A: Danabrook-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Dense layer Cutbanks cave	 0.99 0.50 0.10	Not limited	

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
512B: Danabrook-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.99		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Dense layer	0.50		
			Cutbanks cave	0.10		
512C2: Danabrook-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.99		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Dense layer	0.50		
			Cutbanks cave	0.10		
523A: Dunham-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00				
	Shrink-swell	0.50				
526A: Grundelein-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	1.00		
	saturated zone					
	Shrink-swell	0.50				
527B: Kidami-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to	0.99		
	Shrink-swell	0.50	saturated zone			
	Frost action	0.50	Dense layer	0.50		
			Cutbanks cave	0.10		
527C2: Kidami-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to	0.99		
	Shrink-swell	0.50	saturated zone			
	Frost action	0.50	Dense layer	0.50		
			Cutbanks cave	0.10		
527D2: Kidami-----	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Depth to	0.99	Slope	0.04
	Shrink-swell	0.50	saturated zone			
	Frost action	0.50	Dense layer	0.50		
	Slope	0.04	Cutbanks cave	0.10		
			Slope	0.04		
528A: Lahoguess-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to	0.75	Depth to	1.00	Depth to	0.75
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
	Low strength	0.22				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
529A: Selmass-----	Very limited Depth to saturated zone Frost action Low strength Ponding Shrink-swell	 1.00  1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Cutbanks cave Ponding	 1.00  1.00 1.00	Very limited Depth to saturated zone Ponding	 1.00  1.00
543B: Piscasaw-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
544A: Torox-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.75 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00  0.10	Somewhat limited Depth to saturated zone	 0.75
545A: Windere-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.99  0.10	Not limited	
545B: Windere-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.99  0.10	Not limited	
561B: Whalan-----	Very limited Low strength Shrink-swell Frost action Depth to hard bedrock	 1.00 0.50 0.50 0.01	Very limited Depth to hard bedrock Too clayey Cutbanks cave	 1.00  0.28 0.10	Somewhat limited Depth to bedrock	 0.01
NewGlarus-----	Very limited Frost action Shrink-swell Low strength Depth to hard bedrock	 1.00 1.00 1.00 0.03	Very limited Depth to hard bedrock Too clayey Cutbanks cave	 1.00  1.00 0.10	Somewhat limited Depth to bedrock	 0.03
561C2: Whalan-----	Somewhat limited Low strength Shrink-swell Frost action Depth to hard bedrock	 0.78 0.50 0.50 0.06	Very limited Depth to hard bedrock Too clayey Cutbanks cave	 1.00  0.28 0.10	Somewhat limited Depth to bedrock	 0.06

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
561C2:						
NewGlarus-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.06
	Shrink-swell	1.00				
	Low strength	1.00	Too clayey	1.00		
	Depth to hard bedrock	0.06	Cutbanks cave	0.10		
561D2:						
Whalan-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to hard bedrock	1.00	Slope	0.74
	Slope	0.74			Depth to bedrock	0.71
	Depth to hard bedrock	0.71	Slope	0.74		
	Shrink-swell	0.50	Too clayey	0.28		
	Frost action	0.50	Cutbanks cave	0.10		
NewGlarus-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard bedrock	1.00	Slope	0.74
	Low strength	1.00			Depth to bedrock	0.46
	Slope	0.74	Too clayey	1.00		
	Shrink-swell	0.50	Slope	0.74		
	Depth to hard bedrock	0.46	Cutbanks cave	0.10		
566B:						
Rockton-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.84
	Depth to hard bedrock	0.84	Too clayey	0.12		
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
Dodgeville-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.06
	Low strength	1.00				
	Shrink-swell	1.00	Too clayey	1.00		
	Depth to hard bedrock	0.06	Cutbanks cave	0.10		
566C2:						
Rockton-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.90
	Depth to hard bedrock	0.90	Too clayey	0.12		
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
Dodgeville-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.35
	Low strength	1.00				
	Shrink-swell	0.50	Too clayey	1.00		
	Depth to hard bedrock	0.35	Cutbanks cave	0.10		

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
566D2:						
Rockton-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to hard	1.00	Depth to bedrock	0.97
	Depth to hard	0.97	bedrock		Slope	0.74
	bedrock		Slope	0.74		
	Slope	0.74	Too clayey	0.12		
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
Dodgeville-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard	1.00	Depth to bedrock	0.90
	Low strength	1.00	bedrock		Slope	0.74
	Shrink-swell	1.00	Too clayey	1.00	Droughty	0.01
	Depth to hard	0.90	Slope	0.74		
	bedrock		Cutbanks cave	0.10		
	Slope	0.74				
570A:						
Martinsville-----	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
570B:						
Martinsville-----	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
570C2:						
Martinsville-----	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
570D2:						
Martinsville-----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Slope	0.04				
618B:						
Senachwine-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Dense layer	0.50		
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
623A:						
Kishwaukee-----	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
623B:						
Kishwaukee-----	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
624B:						
Caprell-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624C2: Caprell-----	Somewhat limited Frost action	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
624D2: Caprell-----	Very limited Low strength Shrink-swell Frost action Slope	1.00 0.50 0.50 0.04	Somewhat limited Cutbanks cave Slope	0.10 0.04	Somewhat limited Slope	0.04
624E: Caprell-----	Very limited Slope Low strength Shrink-swell Frost action	1.00 1.00 0.50 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
625B: Geryune-----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	0.99 0.10	Not limited	
626A: Kish-----	Very limited Depth to saturated zone Frost action Ponding Low strength Shrink-swell	1.00 1.00 1.00 1.00 0.78 0.50	Very limited Depth to saturated zone Ponding Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Depth to saturated zone Ponding	1.00 1.00
635A: Lismod-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	1.00 1.00 0.75 0.50	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Depth to saturated zone	0.75
635B: Lismod-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	1.00 1.00 0.75 0.50	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Depth to saturated zone	0.75
636B: Parmod-----	Very limited Low strength Shrink-swell Frost action	1.00 0.50 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
636C2: Parmod-----	Very limited Low strength Shrink-swell Frost action	1.00 0.50 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
667C2: Kaneville-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave Depth to saturated zone	 1.00 0.99	Not limited	
675A: Greenbush-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.15 0.10	Not limited	
675B: Greenbush-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.15 0.10	Not limited	
728B: Winnebago-----	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
728C2: Winnebago-----	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
766A: Lamartine-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.75 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00 0.10	Somewhat limited Depth to saturated zone	 0.75
768C: Backbone-----	Very limited Low strength Depth to hard bedrock Shrink-swell Frost action	 1.00 0.84 0.50 0.50	Very limited Depth to hard bedrock Cutbanks cave	 1.00 0.10	Somewhat limited Depth to bedrock Droughty	 0.84 0.26
771A: Hayfield-----	Somewhat limited Depth to saturated zone Frost action	 0.78 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00 1.00	Somewhat limited Depth to saturated zone	 0.78
772A: Marshan-----	Very limited Depth to saturated zone Frost action Ponding	 1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Cutbanks cave Ponding	 1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	 1.00 1.00

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
777A: Adrian-----	Very limited Depth to saturated zone Subsidence Frost action Ponding	1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Cutbanks cave Ponding Organic matter content	1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
779B: Chelsea-----	Not limited		Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.01
779D: Chelsea-----	Somewhat limited Slope	0.04	Very limited Cutbanks cave Slope	1.00 0.04	Somewhat limited Slope	0.04
780B: Grellton-----	Very limited Low strength Shrink-swell Frost action	1.00 0.50 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
780C2: Grellton-----	Very limited Low strength Shrink-swell Frost action	1.00 0.50 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
781A: Friesland-----	Somewhat limited Shrink-swell Frost action	0.50 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
781B: Friesland-----	Somewhat limited Shrink-swell Frost action	0.50 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
782A: Juneau-----	Very limited Frost action	1.00	Somewhat limited Depth to saturated zone Cutbanks cave	0.73 0.10	Not limited	
783A: Flagler-----	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Not limited	
783B: Flagler-----	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Not limited	
791A: Rush-----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Very limited Cutbanks cave	1.00	Not limited	

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
802B: Orthents, loamy-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to	0.47		
	Frost action	0.50	saturated zone			
	Low strength	0.22	Cutbanks cave	0.10		
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
939C2: Rodman-----	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Droughty	0.94
					Gravel content	0.02
Warsaw-----	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
939D2: Rodman-----	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.04	Cutbanks cave	1.00	Droughty	0.97
			Slope	0.04	Slope	0.04
					Gravel content	0.02
Warsaw-----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Slope	0.04				
969E2: Casco-----	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Frost action	0.50	Slope	1.00	Droughty	0.05
Rodman-----	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
			Slope	1.00	Droughty	0.99
					Gravel content	0.02
1082A: Millington-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
1100A: Palms-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Subsidence	1.00	Organic matter	1.00	Flooding	1.00
	Frost action	1.00	content			
	Flooding	1.00	Flooding	0.80		
			Cutbanks cave	0.10		

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1103A:						
Houghton-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Subsidence	1.00	Organic matter	1.00	Flooding	1.00
	Frost action	1.00	content			
	Flooding	1.00	Flooding	0.80		
1776A:						
Comfrey, frequently flooded-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to	1.00	Depth to	1.00	Flooding	1.00
	saturated zone		saturated zone		Depth to	1.00
	Frost action	1.00	Flooding	0.80	saturated zone	
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
Comfrey, occasionally flooded-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
1777A:						
Adrian-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Subsidence	1.00	Cutbanks cave	1.00	Flooding	1.00
	Frost action	1.00	Organic matter	1.00		
	Flooding	1.00	content			
			Flooding	0.80		
3082A:						
Millington-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Flooding	1.00
	saturated zone		saturated zone		Depth to	1.00
	Frost action	1.00	Ponding	1.00	saturated zone	
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
3107A:						
Sawmill-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Flooding	1.00
	saturated zone		saturated zone		Depth to	1.00
	Frost action	1.00	Ponding	1.00	saturated zone	
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3415A: Orion-----	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to	1.00	Flooding	1.00
	Flooding	1.00	saturated zone		Depth to	0.75
	Low strength	1.00	Cutbanks cave	1.00	saturated zone	
	Depth to	0.75	Flooding	0.80		
	saturated zone					
3776A: Comfrey-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Flooding	1.00
	saturated zone		saturated zone		Depth to	1.00
	Frost action	1.00	Ponding	1.00	saturated zone	
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
3800A: Psamments-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
			Flooding	0.80	Droughty	0.69
			Depth to	0.15	Too sandy	0.50
			saturated zone			
8082A: Millington-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
8776A: Comfrey-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
8782A: Juneau-----	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to	0.73	Flooding	0.60
	Flooding	1.00	saturated zone			
			Flooding	0.60		
			Cutbanks cave	0.10		
9061A: Atterberry-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.94
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.94	Cutbanks cave	0.10		
	saturated zone					
	Shrink-swell	0.50				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9068A:						
Sable-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
9278A:						
Stronghurst-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				

Table 18a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
21C2: Pecatonica-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
22B: Westville-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
22C2: Westville-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
22D2: Westville-----	Somewhat limited Slope Slow water movement	0.96 0.46	Very limited Slope Seepage	1.00 0.53
51A: Muscatune-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 0.53
59A: Lisbon-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.53
61A: Atterberry-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 0.53
62A: Herbert-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
68A: Sable-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
68A+: Sable-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
86A: Osco-----	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
	Depth to saturated zone	0.40		
86B: Osco-----	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
	Depth to saturated zone	0.40	Slope	0.18
87A: Dickinson-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
100A: Palms-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Subsidence	1.00	Seepage	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.72	Organic matter content	1.00
102A: La Hogue-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
103A: Houghton-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Organic matter content	1.00
	Subsidence	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Ponding	1.00	Ponding	1.00

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
104A: Virgil-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 1.00
119B: Elco-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Seepage Slope Depth to saturated zone	0.53 0.18 0.04
125A: Selma-----	Very limited Depth to saturated zone Seepage, bottom layer Ponding Slow water movement	1.00 1.00 1.00 0.46	Very limited Seepage Depth to saturated zone Ponding	1.00 1.00 1.00
134A: Camden-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Somewhat limited Seepage	0.53
146A: Elliott-----	Very limited Slow water movement Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
148A: Proctor-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage	1.00
148B: Proctor-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.18

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
149A: Brenton-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 1.00
152A: Drummer-----	Very limited Depth to saturated zone Seepage, bottom layer Ponding Slow water movement	1.00 1.00 1.00 0.46	Very limited Depth to saturated zone Seepage Ponding	1.00 1.00 1.00
152A+: Drummer-----	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.46	Very limited Depth to saturated zone Ponding Seepage	1.00 1.00 0.53
153A: Pella-----	Very limited Depth to saturated zone Seepage, bottom layer Ponding Slow water movement	1.00 1.00 1.00 0.46	Very limited Depth to saturated zone Seepage Ponding	1.00 1.00 1.00
172A: Hoopeston-----	Very limited Depth to saturated zone Seepage, bottom layer	1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 1.00
188A: Beardstown-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Seepage Depth to saturated zone	1.00 1.00
197A: Troxel-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
198A: Elburn-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46		
199A: Plano-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
199B: Plano-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.18
199C2: Plano-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	1.00
206A: Thorp-----	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Ponding	1.00
	Ponding	1.00		
219A: Millbrook-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
221B: Parr-----	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Slope	0.18
			Depth to saturated zone	0.04

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
221C2: Parr-----	Very limited Depth to saturated zone	1.00	Very limited Slope	1.00
	Slow water movement	1.00	Seepage Depth to saturated zone	0.53 0.04
223B: Varna-----	Very limited Slow water movement	1.00	Somewhat limited Slope	0.08
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
227B: Argyle-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53
			Slope	0.18
242A: Kendall-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
243A: St. Charles-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53
243B: St. Charles-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53
			Slope	0.18
243C2: St. Charles-----	Somewhat limited Slow water movement	0.46	Very limited Slope	1.00
			Seepage	0.53
278A: Stronghurst-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
279A: Rozetta-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53
	Depth to saturated zone	0.40		
280B: Fayette-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53
			Slope	0.18

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
280C2: Fayette-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
290A: Warsaw-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage	1.00
290B: Warsaw-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.08
290C2: Warsaw-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.68
290D2: Warsaw-----	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.46 0.04	Very limited Seepage Slope	1.00 1.00
293A: Andres-----	Very limited Slow water movement Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.53
297B: Ringwood-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.08
297C2: Ringwood-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.68

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
297D2:				
Ringwood-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	1.00
	Slope	0.04		
310B:				
McHenry-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.08
310C2:				
McHenry-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.68
310D2:				
McHenry-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	1.00
	Slope	0.04		
325B:				
Dresden-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.08
325C2:				
Dresden-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.68
327B:				
Fox-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.08
327C2:				
Fox-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.68

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
327D2: Fox-----	Very limited Seepage, bottom layer Slow water movement Slope	1.00  0.46  0.04	Very limited Seepage Slope	1.00  1.00
329A: Will-----	Very limited Depth to saturated zone Seepage, bottom layer Ponding Slow water movement	1.00  1.00  1.00 0.46	Very limited Seepage Depth to saturated zone Ponding	1.00  1.00  1.00
332A: Billett-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00
332B: Billett-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 0.18
343A: Kane-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00  1.00  0.46	Very limited Seepage Depth to saturated zone	1.00  1.00
344A: Harvard-----	Very limited Seepage, bottom layer Slow water movement	1.00  0.46	Very limited Seepage	1.00
344B: Harvard-----	Very limited Seepage, bottom layer Slow water movement	1.00  0.46	Very limited Seepage Slope	1.00 0.18
354A: Hononegah-----	Very limited Filtering capacity Seepage, bottom layer	1.00  1.00	Very limited Seepage	1.00

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
354B: Hononegah-----	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage Slope	1.00 0.32
361B: Kidder-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.08
361C2: Kidder-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.68
361D2: Kidder-----	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.46 0.04	Very limited Seepage Slope	1.00 1.00
361D3: Kidder-----	Very limited Seepage, bottom layer Slope	1.00 0.04	Very limited Seepage Slope	1.00 1.00
361E2: Kidder-----	Very limited Seepage, bottom layer Slope Slow water movement	1.00 1.00 0.46	Very limited Slope Seepage	1.00 1.00
363C2: Griswold-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.92
363D2: Griswold-----	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.46 0.04	Very limited Slope Seepage	1.00 1.00

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
369A: Waupecan-----	Very limited Seepage, bottom layer Slow water movement	1.00  0.46	Very limited Seepage	1.00
379A: Dakota-----	Very limited Seepage, bottom layer Slow water movement	1.00  0.46	Very limited Seepage	1.00
387A: Ockley-----	Very limited Seepage, bottom layer Slow water movement	1.00  0.46	Very limited Seepage	1.00
387B: Ockley-----	Very limited Seepage, bottom layer Slow water movement	1.00  0.46	Very limited Seepage Slope	1.00 0.18
403E: Elizabeth-----	Very limited Depth to bedrock Slope Content of large stones	1.00 1.00 0.62	Very limited Depth to hard bedrock Slope Content of large stones Seepage	1.00  1.00 1.00 0.53
412B: Ogle-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
419A: Flagg-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53
419B: Flagg-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
419C2: Flagg-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
440A: Jasper-----	Very limited Seepage, bottom layer Slow water movement	1.00  0.46	Very limited Seepage	1.00
440B: Jasper-----	Very limited Seepage, bottom layer Slow water movement	1.00  0.46	Very limited Seepage Slope	1.00 0.18
440C2: Jasper-----	Very limited Seepage, bottom layer Slow water movement	1.00  0.46	Very limited Slope Seepage	1.00 1.00
490A: Odell-----	Very limited Depth to saturated zone Slow water movement	1.00  1.00	Very limited Depth to saturated zone Seepage	1.00  0.53
503B: Rockton-----	Very limited Depth to bedrock Slow water movement	1.00 1.00	Very limited Depth to hard bedrock Seepage Slope	1.00  1.00 0.32
505D2: Dunbarton-----	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Slope Seepage	1.00  1.00 0.53
505E2: Dunbarton-----	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00  1.00 0.21
506B: Hitt-----	Very limited Slow water movement Depth to bedrock	1.00  0.94	Somewhat limited Depth to hard bedrock Seepage Slope	0.84  0.53 0.18

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
512A: Danabrook-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Seepage Depth to saturated zone	0.53 0.04
512B: Danabrook-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Seepage Slope Depth to saturated zone	0.53 0.18 0.04
512C2: Danabrook-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Slope Seepage Depth to saturated zone	1.00 0.53 0.04
523A: Dunham-----	Very limited Depth to saturated zone Seepage, bottom layer Ponding Slow water movement	1.00 1.00 1.00 1.00 0.46	Very limited Seepage Depth to saturated zone Ponding	1.00 1.00 1.00
526A: Grundelein-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Seepage Depth to saturated zone	1.00 1.00
527B: Kidami-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Seepage Slope Depth to saturated zone	0.53 0.18 0.04
527C2: Kidami-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Slope Seepage Depth to saturated zone	1.00 0.53 0.04
527D2: Kidami-----	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.04	Very limited Slope Seepage Depth to saturated zone	1.00 0.53 0.04

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
528A: Lahoguess-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46		
529A: Selmass-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46		
543B: Piscasaw-----	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
			Slope	0.08
544A: Torox-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
545A: Windere-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
545B: Windere-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.08
561B: Whalan-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slow water movement	1.00	Seepage	1.00
			Slope	0.18
NewGlarus-----	Very limited		Very limited	
	Slow water movement	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Seepage	0.28
			Slope	0.18

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
561C2:				
Whalan-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard	1.00
	Slow water	1.00	bedrock	
	movement		Seepage	1.00
			Slope	1.00
NewGlarus-----	Very limited		Very limited	
	Slow water	1.00	Depth to hard	1.00
	movement		bedrock	
	Depth to bedrock	1.00	Slope	1.00
			Seepage	0.28
561D2:				
Whalan-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard	1.00
	Slow water	1.00	bedrock	
	movement		Slope	1.00
	Slope	0.74	Seepage	1.00
NewGlarus-----	Very limited		Very limited	
	Slow water	1.00	Depth to hard	1.00
	movement		bedrock	
	Depth to bedrock	1.00	Slope	1.00
	Slope	0.74	Seepage	0.28
566B:				
Rockton-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard	1.00
	Slow water	1.00	bedrock	
	movement		Seepage	1.00
			Slope	0.18
Dodgeville-----	Very limited		Very limited	
	Slow water	1.00	Depth to hard	1.00
	movement		bedrock	
	Depth to bedrock	1.00	Seepage	0.28
			Slope	0.18
566C2:				
Rockton-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard	1.00
	Slow water	1.00	bedrock	
	movement		Seepage	1.00
			Slope	1.00
Dodgeville-----	Very limited		Very limited	
	Slow water	1.00	Depth to hard	1.00
	movement		bedrock	
	Depth to bedrock	1.00	Slope	1.00
			Seepage	0.28
566D2:				
Rockton-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard	1.00
	Slope	0.74	bedrock	
			Slope	1.00
			Seepage	1.00

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
566D2: Dodgeville-----	Very limited Slow water movement	1.00	Very limited Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	0.74	Seepage	0.28
570A: Martinsville-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00
	Slow water movement	0.46		
570B: Martinsville-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00
	Slow water movement	0.46	Slope	0.08
570C2: Martinsville-----	Very limited Seepage, bottom layer	1.00	Somewhat limited Slope	0.68
	Slow water movement	0.46	Seepage	0.53
570D2: Martinsville-----	Very limited Seepage, bottom layer	1.00	Very limited Slope	1.00
	Slow water movement	0.46	Seepage	1.00
	Slope	0.04		
618B: Senachwine-----	Very limited Slow water movement	1.00	Somewhat limited Seepage	0.53
			Slope	0.18
623A: Kishwaukee-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00
	Slow water movement	0.46		
623B: Kishwaukee-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00
	Slow water movement	0.46	Slope	0.18
624B: Caprell-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53
			Slope	0.18

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
624C2: Caprell-----	Somewhat limited Slow water movement	0.46	Somewhat limited Slope Seepage	1.00 0.53
624D2: Caprell-----	Somewhat limited Slow water movement Slope	0.46 0.04	Very limited Slope Seepage	1.00 0.53
624E: Caprell-----	Very limited Slope Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 0.53
625B: Geryune-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.18
626A: Kish-----	Very limited Depth to saturated zone Seepage, bottom layer Ponding Slow water movement	1.00 1.00 1.00 0.46	Very limited Depth to saturated zone Seepage Ponding	1.00 1.00 1.00
635A: Lismod-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 0.53
635B: Lismod-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.18
636B: Parmod-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
636C2: Parmod-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
667C2: Kaneville-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Depth to saturated zone Slope Seepage	1.00 1.00 1.00
675A: Greenbush-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Somewhat limited Seepage	0.53
675B: Greenbush-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Somewhat limited Seepage Slope	0.53 0.18
728B: Winnebago-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
728C2: Winnebago-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
766A: Lamartine-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 0.53
768C: Backbone-----	Very limited Depth to bedrock Slow water movement	1.00 1.00	Very limited Depth to hard bedrock Seepage Slope	1.00 1.00 1.00 1.00
771A: Hayfield-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Seepage Depth to saturated zone	1.00 1.00

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
772A: Marshan-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46		
777A: Adrian-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Subsidence	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00
	Ponding	1.00	Organic matter content	1.00
779B: Chelsea-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
779D: Chelsea-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slope	0.04	Slope	1.00
780B: Grellton-----	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
780C2: Grellton-----	Somewhat limited		Very limited	
	Slow water movement	0.46	Slope	1.00
			Seepage	0.53
781A: Friesland-----	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
781B: Friesland-----	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
782A: Juneau-----	Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.65	Seepage	0.53
	Slow water movement	0.46	Depth to saturated zone	0.02
783A: Flagler-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
783B: Flagler-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 0.32
791A: Rush-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage	1.00
802B: Orthents, loamy----	Very limited Slow water movement Depth to saturated zone	1.00 0.94	Somewhat limited Slope	0.18
864: Pits, quarry-----	Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated	
939C2: Rodman-----	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage Slope	1.00 0.68
Warsaw-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.68
939D2: Rodman-----	Very limited Filtering capacity Seepage, bottom layer Slope	1.00 1.00 0.04	Very limited Seepage Slope	1.00 1.00
Warsaw-----	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.46 0.04	Very limited Seepage Slope	1.00 1.00
969E2: Casco-----	Very limited Filtering capacity Seepage, bottom layer Slope	1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
969E2:				
Rodman-----	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slope	1.00		
1082A:				
Millington-----	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
1100A:				
Palms-----	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Subsidence	1.00	Seepage	1.00
	Slow water movement	0.72	Organic matter content	1.00
1103A:				
Houghton-----	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Organic matter content	1.00
	Subsidence	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
1776A:				
Comfrey, frequently flooded-----	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
Comfrey, occasionally flooded-----	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
1777A:				
Adrian-----	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Subsidence	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Organic matter content	1.00
3082A:				
Millington-----	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
3107A:				
Sawmill-----	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
3415A:				
Orion-----	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
3776A:				
Comfrey-----	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
3800A:				
Psammets-----	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Filtering capacity	1.00	Seepage	1.00
	Seepage, bottom layer	1.00		
	Depth to saturated zone	0.40		

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8082A: Millington-----	Very limited Flooding Depth to saturated zone Ponding Slow water movement	1.00 1.00  1.00 0.46	Very limited Flooding Depth to saturated zone Ponding Seepage	1.00 1.00  1.00 0.53
8776A: Comfrey-----	Very limited Flooding Depth to saturated zone Ponding Slow water movement	1.00 1.00  1.00 0.46	Very limited Flooding Depth to saturated zone Ponding Seepage	1.00 1.00  1.00 0.53
8782A: Juneau-----	Very limited Flooding Depth to saturated zone Slow water movement	1.00 0.65  0.46	Very limited Flooding Seepage Depth to saturated zone	1.00 0.53  0.02
9061A: Atterberry-----	Very limited Depth to saturated zone Slow water movement	1.00   0.46	Very limited Depth to saturated zone Seepage	1.00   0.53
9068A: Sable-----	Very limited Depth to saturated zone Ponding Slow water movement	1.00  1.00 0.46	Very limited Depth to saturated zone Ponding Seepage	1.00  1.00 0.53
9278A: Stronghurst-----	Very limited Depth to saturated zone Slow water movement	1.00  0.46	Very limited Depth to saturated zone Seepage	1.00  0.53

Table 18b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Not limited		Not limited		Not limited	
21C2: Pecatonica-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
22B: Westville-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
22C2: Westville-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
22D2: Westville-----	Somewhat limited Slope Too clayey	0.96 0.50	Somewhat limited Slope	0.96	Somewhat limited Slope Too clayey	0.96 0.50
51A: Muscatune-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
59A: Lisbon-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
61A: Atterberry-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
62A: Herbert-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
68A: Sable-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A+:						
Sable-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
86A:						
Oscos-----	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
86B:						
Oscos-----	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
87A:						
Dickinson-----	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
100A:						
Palms-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Seepage	1.00	Ponding	1.00
	Too clayey	0.50	Ponding	1.00	Too clayey	0.50
102A:						
La Hogue-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00				
103A:						
Houghton-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Seepage	1.00	Organic matter content	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Seepage	0.16
104A:						
Virgil-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
119B: Elco-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
125A: Selma-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Seepage	0.52
134A: Camden-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
146A: Elliott-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
148A: Proctor-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
					Seepage	0.22
148B: Proctor-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
149A: Brenton-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
152A: Drummer-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Too clayey	0.50
	Too clayey	0.50				
152A+: Drummer-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
153A: Pella-----	Very limited Depth to saturated zone Seepage, bottom layer Ponding Too clayey	 1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Ponding	 1.00 1.00	Very limited Depth to saturated zone Ponding Too clayey	 1.00 1.00 0.50
172A: Hoopeston-----	Very limited Depth to saturated zone Seepage, bottom layer	 1.00 1.00	Very limited Depth to saturated zone Seepage	 1.00 1.00	Very limited Depth to saturated zone Seepage	 1.00 0.52
188A: Beardstown-----	Very limited Depth to saturated zone Seepage, bottom layer	 1.00 1.00	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00
197A: Troxel-----	Not limited		Not limited		Not limited	
198A: Elburn-----	Very limited Depth to saturated zone Seepage, bottom layer Too clayey	 1.00 1.00 0.50	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone Too clayey	 1.00 0.50
199A: Plano-----	Very limited Seepage, bottom layer Too clayey	 1.00 0.50	Not limited		Somewhat limited Too clayey	 0.50
199B: Plano-----	Very limited Seepage, bottom layer Too clayey	 1.00 0.50	Not limited		Somewhat limited Too clayey	 0.50
199C2: Plano-----	Very limited Seepage, bottom layer Too clayey	 1.00 0.50	Not limited		Somewhat limited Too clayey	 0.50
206A: Thorp-----	Very limited Depth to saturated zone Seepage, bottom layer Ponding Too clayey	 1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Ponding	 1.00 1.00	Very limited Depth to saturated zone Ponding Too clayey	 1.00 1.00 0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
219A: Millbrook-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too sandy	0.50
	Too sandy	0.50			Seepage	0.22
221B: Parr-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Depth to saturated zone	0.24
221C2: Parr-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Depth to saturated zone	0.24
223B: Varna-----	Very limited		Somewhat limited		Very limited	
	Too clayey	1.00	Depth to saturated zone	0.04	Too clayey	1.00
	Depth to saturated zone	0.68			Depth to saturated zone	0.24
227B: Argyle-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
242A: Kendall-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
243A: St. Charles-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
243B: St. Charles-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
243C2: St. Charles-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
278A: Stronghurst-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
279A: Rozetta-----	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
280B: Fayette-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
280C2: Fayette-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
290A: Warsaw-----	Very limited Seepage, bottom layer Too sandy	1.00 0.50	Very limited Seepage	1.00	Very limited Seepage Too sandy Gravel content	1.00 0.50 0.02
290B: Warsaw-----	Very limited Seepage, bottom layer Too sandy	1.00 0.50	Very limited Seepage	1.00	Very limited Seepage Too sandy Gravel content	1.00 0.50 0.04
290C2: Warsaw-----	Very limited Seepage, bottom layer Too sandy	1.00 0.50	Very limited Seepage	1.00	Very limited Seepage Too sandy Gravel content	1.00 0.50 0.07
290D2: Warsaw-----	Very limited Seepage, bottom layer Too sandy Slope	1.00 0.50 0.04	Very limited Seepage Slope	1.00 0.04	Very limited Seepage Too sandy Gravel content Slope	1.00 0.50 0.09 0.04
293A: Andres-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
297B: Ringwood-----	Very limited Seepage, bottom layer	1.00	Not limited		Somewhat limited Seepage	0.52
297C2: Ringwood-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.52
297D2: Ringwood-----	Very limited Seepage, bottom layer Slope	1.00 0.04	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage Slope	0.52 0.04
310B: McHenry-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.52
310C2: McHenry-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.52

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
310D2: McHenry-----	Very limited Seepage, bottom layer Slope	1.00  0.04	Very limited Seepage Slope	1.00  0.04	Somewhat limited Seepage Slope	0.52  0.04
325B: Dresden-----	Very limited Seepage, bottom layer Too sandy	1.00  1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00  1.00
325C2: Dresden-----	Very limited Seepage, bottom layer Too sandy	1.00  1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00  1.00
327B: Fox-----	Very limited Seepage, bottom layer Too sandy	1.00  1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage Gravel content	1.00  1.00 0.01
327C2: Fox-----	Very limited Seepage, bottom layer Too sandy	1.00  1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00  1.00
327D2: Fox-----	Very limited Seepage, bottom layer Too sandy Slope	1.00  1.00 0.04	Very limited Seepage Slope	1.00  0.04	Very limited Too sandy Seepage Slope Gravel content	1.00  1.00 0.04 0.04
329A: Will-----	Very limited Depth to saturated zone Seepage, bottom layer Too sandy Ponding	1.00  1.00 1.00 1.00	Very limited Depth to saturated zone Seepage Ponding	1.00  1.00 1.00	Very limited Depth to saturated zone Too sandy Seepage Ponding Gravel content	1.00  1.00 1.00 1.00 0.04
332A: Billett-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.52
332B: Billett-----	Very limited Seepage, bottom layer Too sandy	1.00  0.50	Very limited Seepage	1.00	Very limited Seepage Too sandy	1.00  0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
343A: Kane-----	Very limited Depth to saturated zone Seepage, bottom layer Too sandy	1.00 1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 1.00	Very limited Too sandy Seepage Depth to saturated zone Gravel content	1.00 1.00 1.00 0.05
344A: Harvard-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
344B: Harvard-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
354A: Hononegah-----	Very limited Seepage, bottom layer Too sandy	1.00 0.50	Very limited Seepage	1.00	Very limited Seepage Too sandy Gravel content	1.00 0.50 0.38
354B: Hononegah-----	Very limited Seepage, bottom layer Too sandy	1.00 0.50	Very limited Seepage	1.00	Very limited Seepage Gravel content Too sandy	1.00 0.51 0.50
361B: Kidder-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.52
361C2: Kidder-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
361D2: Kidder-----	Very limited Seepage, bottom layer Slope	1.00 0.04	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage Slope	0.52 0.04
361D3: Kidder-----	Very limited Seepage, bottom layer Slope	1.00 0.04	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage Slope	0.52 0.04
361E2: Kidder-----	Very limited Seepage, bottom layer Slope	1.00 1.00	Very limited Seepage Slope	1.00 1.00	Very limited Slope Seepage	1.00 0.52

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
363C2: Griswold-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.22
363D2: Griswold-----	Very limited Seepage, bottom layer Slope	1.00 0.04	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage Slope	0.22 0.04
369A: Waupecan-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Very limited Seepage	1.00	Somewhat limited Too clayey	0.50
379A: Dakota-----	Very limited Seepage, bottom layer Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00 1.00
387A: Ockley-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey Gravel content	0.50 0.01
387B: Ockley-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey Gravel content	0.50 0.01
403E: Elizabeth-----	Very limited Depth to bedrock Slope Content of large stones	1.00 1.00 0.62	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope Content of large stones	1.00 1.00 0.62
412B: Ogle-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
419A: Flagg-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
419B: Flagg-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
419C2: Flagg-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
440A: Jasper-----	Very limited Seepage, bottom layer	1.00	Not limited		Not limited	
440B: Jasper-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
440C2: Jasper-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.22
490A: Odell-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
503B: Rockton-----	Very limited Depth to bedrock Too clayey	1.00 0.50	Very limited Seepage Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Too clayey	1.00 0.50
505D2: Dunbarton-----	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.04
505E2: Dunbarton-----	Very limited Depth to bedrock Too clayey Slope	1.00 1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Too clayey Hard to compact Slope	1.00 1.00 1.00 1.00
506B: Hitt-----	Very limited Depth to bedrock Too clayey	1.00 0.50	Somewhat limited Depth to bedrock	0.84	Somewhat limited Depth to bedrock Too clayey	0.84 0.50
512A: Danabrook-----	Somewhat limited Depth to saturated zone Too clayey	0.68 0.50	Somewhat limited Depth to saturated zone	0.04	Somewhat limited Too clayey Depth to saturated zone	0.50 0.24
512B: Danabrook-----	Somewhat limited Depth to saturated zone Too clayey	0.68 0.50	Somewhat limited Depth to saturated zone	0.04	Somewhat limited Too clayey Depth to saturated zone	0.50 0.24
512C2: Danabrook-----	Somewhat limited Depth to saturated zone	0.68	Somewhat limited Depth to saturated zone	0.04	Somewhat limited Depth to saturated zone	0.24

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
523A: Dunham-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage Ponding	1.00 1.00	Ponding Too clayey	1.00 0.50
	Ponding	1.00				
	Too clayey	0.50				
526A: Grundelein-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50				
527B: Kidami-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
527C2: Kidami-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
527D2: Kidami-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Slope	0.04	Depth to saturated zone	0.24
	Slope	0.04	Depth to saturated zone	0.04	Slope	0.04
528A: Lahoguess-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50				
529A: Selmass-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Too clayey	0.50
	Too clayey	0.50				
543B: Piscasaw-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
544A: Torox-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
545A:						
Windere-----	Very limited		Very limited		Somewhat limited	
	Depth to	1.00	Depth to	1.00	Too clayey	0.50
	saturated zone		saturated zone		Depth to	0.24
	Too clayey	0.50			saturated zone	
545B:						
Windere-----	Very limited		Very limited		Somewhat limited	
	Depth to	1.00	Depth to	1.00	Too clayey	0.50
	saturated zone		saturated zone		Depth to	0.24
	Too clayey	0.50			saturated zone	
561B:						
Whalan-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
			Depth to bedrock	1.00		
NewGlarus-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
561C2:						
Whalan-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
			Depth to bedrock	1.00		
NewGlarus-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
561D2:						
Whalan-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
	Slope	0.74	Depth to bedrock	1.00	Slope	0.74
	Too clayey	0.50	Slope	0.74	Too clayey	0.50
NewGlarus-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.74	Slope	0.74	Slope	0.74
	Too clayey	0.50			Too clayey	0.50
566B:						
Rockton-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
	Too clayey	0.50	Depth to bedrock	1.00	Too clayey	0.50
Dodgeville-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
566C2:						
Rockton-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
	Too clayey	0.50	Depth to bedrock	1.00	Too clayey	0.50
Dodgeville-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
566D2:						
Rockton-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
	Slope	0.74	Depth to bedrock	1.00	Slope	0.74
	Too clayey	0.50	Slope	0.74	Too clayey	0.50
Dodgeville-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	1.00	Slope	0.74	Too clayey	1.00
	Slope	0.74			Hard to compact	1.00
					Slope	0.74
570A:						
Martinsville-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
570B:						
Martinsville-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
570C2:						
Martinsville-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
570D2:						
Martinsville-----	Very limited		Somewhat limited		Somewhat limited	
	Seepage, bottom layer	1.00	Slope	0.04	Too clayey	0.50
	Too clayey	0.50			Slope	0.04
	Slope	0.04				
618B:						
Senachwine-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
623A:						
Kishwaukee-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
623B:						
Kishwaukee-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
624B:						
Caprell-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
624C2:						
Caprell-----	Not limited		Not limited		Not limited	

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624D2: Caprell-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04
624E: Caprell-----	Very limited Slope Too clayey	1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
625B: Geryune-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.24
626A: Kish-----	Very limited Depth to saturated zone Seepage, bottom layer Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
635A: Lismod-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
635B: Lismod-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
636B: Parmod-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
636C2: Parmod-----	Not limited		Not limited		Not limited	
667C2: Kaneville-----	Very limited Depth to saturated zone Seepage, bottom layer Too clayey	1.00 1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey Depth to saturated zone	0.50 0.24
675A: Greenbush-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
675B: Greenbush-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
728B: Winnebago-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
728C2: Winnebago-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
766A: Lamartine-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
768C: Backbone-----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
771A: Hayfield-----	Very limited Depth to saturated zone Seepage, bottom layer Too sandy	1.00 1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 1.00	Very limited Depth to saturated zone Too sandy Seepage	1.00 1.00 1.00
772A: Marshan-----	Very limited Depth to saturated zone Seepage, bottom layer Too sandy Ponding	1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Seepage Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Too sandy Seepage Ponding	1.00 1.00 1.00 1.00
777A: Adrian-----	Very limited Depth to saturated zone Seepage, bottom layer Organic matter content Ponding	1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Seepage Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Organic matter content Ponding Seepage	1.00 1.00 1.00 0.16
779B: Chelsea-----	Very limited Seepage, bottom layer Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00 0.52
779D: Chelsea-----	Very limited Seepage, bottom layer Too sandy Slope	1.00 0.50 0.04	Very limited Seepage Slope	1.00 0.04	Very limited Seepage Too sandy Slope	1.00 0.50 0.04
780B: Grellton-----	Not limited		Not limited		Not limited	

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
780C2: Grellton-----	Not limited		Not limited		Not limited	
781A: Friesland-----	Not limited		Not limited		Not limited	
781B: Friesland-----	Not limited		Not limited		Not limited	
782A: Juneau-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Not limited	
783A: Flagler-----	Very limited Seepage, bottom layer Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00 1.00
783B: Flagler-----	Very limited Seepage, bottom layer Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00 1.00
791A: Rush-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
802B: Orthents, loamy----	Not limited		Not limited		Not limited	
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
939C2: Rodman-----	Very limited Seepage, bottom layer Too sandy	1.00 0.50	Very limited Seepage	1.00	Very limited Seepage Gravel content Too sandy	1.00 1.00 0.50
Warsaw-----	Very limited Seepage, bottom layer Too sandy	1.00 0.50	Very limited Seepage	1.00	Very limited Seepage Too sandy Gravel content	1.00 0.50 0.07
939D2: Rodman-----	Very limited Seepage, bottom layer Too sandy Slope	1.00 0.50 0.04	Very limited Seepage Slope	1.00 0.04	Very limited Seepage Gravel content Too sandy Slope	1.00 1.00 0.50 0.04

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
939D2: Warsaw-----	Very limited Seepage, bottom layer Too sandy Slope	 1.00  0.50 0.04	Very limited Seepage Slope	 1.00 0.04	Very limited Seepage Too sandy Gravel content Slope	 1.00 0.50 0.09 0.04
969E2: Casco-----	Very limited Seepage, bottom layer Too sandy Slope	 1.00 1.00 1.00	Very limited Seepage Slope	 1.00 1.00	Very limited Too sandy Seepage Slope Gravel content	 1.00 1.00 1.00 0.20
Rodman-----	Very limited Seepage, bottom layer Slope Too sandy	 1.00 1.00 0.50	Very limited Seepage Slope	 1.00 1.00	Very limited Seepage Gravel content Slope Too sandy	 1.00 1.00 1.00 0.50
1082A: Millington-----	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	 1.00 1.00 1.00
1100A: Palms-----	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00 1.00	Very limited Flooding Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	 1.00 1.00
1103A: Houghton-----	Very limited Flooding Depth to saturated zone Ponding Organic matter content Seepage, bottom layer	 1.00 1.00 1.00 1.00 1.00	Very limited Flooding Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Organic matter content Seepage	 1.00 1.00 1.00 0.16
1776A: Comfrey, frequently flooded-----	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00 1.00	Very limited Flooding Ponding Depth to saturated zone	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	 1.00 1.00

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1776A: Comfrey, occasionally flooded-----	Very limited Flooding Depth to saturated zone Ponding Too clayey	 1.00 1.00  1.00 0.50	Very limited Flooding Ponding Depth to saturated zone	 1.00 1.00 1.00  1.00	Very limited Ponding Depth to saturated zone Too clayey	 1.00 1.00 1.00  0.50
1777A: Adrian-----	Very limited Flooding Depth to saturated zone Ponding Seepage, bottom layer Too sandy	 1.00 1.00  1.00 1.00 0.50	Very limited Flooding Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00  1.00  1.00	Very limited Ponding Depth to saturated zone Seepage Too sandy	 1.00 1.00 1.00  1.00 0.50
3082A: Millington-----	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00  1.00	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00 1.00  1.00	Very limited Depth to saturated zone Ponding	 1.00 1.00 1.00
3107A: Sawmill-----	Very limited Flooding Depth to saturated zone Ponding Too clayey	 1.00 1.00  1.00 0.50	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00 1.00  1.00	Very limited Depth to saturated zone Ponding Too clayey	 1.00 1.00 1.00 0.50
3415A: Orion-----	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Depth to saturated zone	 1.00
3776A: Comfrey-----	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00  1.00	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00 1.00  1.00	Very limited Depth to saturated zone Ponding	 1.00 1.00 1.00
3800A: Psamments-----	Very limited Flooding Depth to saturated zone Seepage, bottom layer Too sandy	 1.00 1.00  1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	 1.00 1.00 1.00  1.00	Very limited Too sandy Seepage	 1.00 1.00

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8082A: Millington-----	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00  1.00	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00  1.00	Very limited Depth to saturated zone Ponding	 1.00  1.00
8776A: Comfrey-----	Very limited Flooding Depth to saturated zone Ponding Too clayey	 1.00 1.00  1.00 0.50	Very limited Flooding Depth to saturated zone Ponding	 1.00 1.00  1.00	Very limited Depth to saturated zone Ponding Too clayey	 1.00  1.00 0.50
8782A: Juneau-----	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 1.00	Not limited	
9061A: Atterberry-----	Very limited Depth to saturated zone Too clayey	 1.00  0.50	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone Too clayey	 1.00  0.50
9068A: Sable-----	Very limited Depth to saturated zone Ponding Too clayey	 1.00  1.00 0.50	Very limited Depth to saturated zone Ponding	 1.00  1.00	Very limited Depth to saturated zone Ponding Too clayey	 1.00  1.00 0.50
9278A: Stronghurst-----	Very limited Depth to saturated zone Too clayey	 1.00  0.50	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone Too clayey	 1.00  0.50

Table 19a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
21B: Pecatonica-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
21C2: Pecatonica-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
22B: Westville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
22C2: Westville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
22D2: Westville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
51A: Muscatune-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
59A: Lisbon-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
61A: Atterberry-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
62A: Herbert-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
68A: Sable-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
68A+:				
Sable-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
86A:				
Osc-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
86B:				
Osc-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
87A:				
Dickinson-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.39
100A:				
Palms-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
102A:				
La Hogue-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
103A:				
Houghton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
104A:				
Virgil-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
119B:				
Elco-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
125A:				
Selma-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
134A:				
Camden-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
146A:				
Elliott-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
148A: Proctor-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
148B: Proctor-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
149A: Brenton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
152A: Drummer-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
152A+: Drummer-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
153A: Pella-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
172A: Hoopeston-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.10
188A: Beardstown-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.32
197A: Troxel-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
198A: Elburn-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
199A: Plano-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
199B: Plano-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
199C2:				
Plano-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
206A:				
Thorp-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
219A:				
Millbrook-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
221B:				
Parr-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
221C2:				
Parr-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
223B:				
Varna-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
227B:				
Argyle-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
242A:				
Kendall-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
243A:				
St. Charles-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
243B:				
St. Charles-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
243C2:				
St. Charles-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
278A:				
Stronghurst-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
279A:				
Rozetta-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
280B:				
Fayette-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
280C2:				
Fayette-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
290A:				
Warsaw-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.27	Bottom layer	0.27
290B:				
Warsaw-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.27	Bottom layer	0.27
290C2:				
Warsaw-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.27	Bottom layer	0.27
290D2:				
Warsaw-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.27	Bottom layer	0.27
293A:				
Andres-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
297B:				
Ringwood-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
297C2:				
Ringwood-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
297D2:				
Ringwood-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
310B:				
McHenry-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
310C2: McHenry-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
310D2: McHenry-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
325B: Dresden-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.12	Bottom layer	0.24
325C2: Dresden-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.12	Bottom layer	0.24
327B: Fox-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.16	Bottom layer	0.30
327C2: Fox-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.16	Bottom layer	0.30
327D2: Fox-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.16	Bottom layer	0.30
329A: Will-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.20	Bottom layer	0.42
332A: Billett-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.24
332B: Billett-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.24
343A: Kane-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.27	Bottom layer	0.30
344A: Harvard-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
344B: Harvard-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
354A: Hononegah-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.26
	Bottom layer	0.43	Bottom layer	0.38
354B: Hononegah-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.26
	Bottom layer	0.43	Bottom layer	0.38
361B: Kidder-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
361C2: Kidder-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
361D2: Kidder-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
361D3: Kidder-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
361E2: Kidder-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
363C2: Griswold-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
363D2: Griswold-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
369A: Waupecan-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.30
379A: Dakota-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.06

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
387A: Ockley-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.18	Bottom layer	0.67
387B: Ockley-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.18	Bottom layer	0.67
403E: Elizabeth-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
412B: Ogle-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
419A: Flagg-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
419B: Flagg-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
419C2: Flagg-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
440A: Jasper-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
440B: Jasper-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
440C2: Jasper-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
490A: Odell-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
503B: Rockton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
505D2: Dunbarton-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
505E2: Dunbarton-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
506B: Hitt-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
512A: Danabrook-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
512B: Danabrook-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
512C2: Danabrook-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
523A: Dunham-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.01	Bottom layer	0.13
526A: Grundelein-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.01	Bottom layer	0.13
527B: Kidami-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
527C2: Kidami-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
527D2: Kidami-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
528A: Lahoguess-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.13

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
529A: Selmass-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.11
543B: Piscasaw-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
544A: Torox-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
545A: Windere-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
545B: Windere-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
561B: Whalan-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
NewGlarus-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
561C2: Whalan-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
NewGlarus-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
561D2: Whalan-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
NewGlarus-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
566B: Rockton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Dodgeville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
566C2:				
Rockton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Dodgeville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
566D2:				
Rockton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Dodgeville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
570A:				
Martinsville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
570B:				
Martinsville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
570C2:				
Martinsville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
570D2:				
Martinsville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
618B:				
Senachwine-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
623A:				
Kishwaukee-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.18	Bottom layer	0.67
623B:				
Kishwaukee-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.18	Bottom layer	0.67
624B:				
Caprell-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
624C2: Caprell-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
624D2: Caprell-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
624E: Caprell-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
625B: Geryune-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
626A: Kish-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
635A: Lismod-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
635B: Lismod-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
636B: Parmod-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
636C2: Parmod-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
667C2: Kaneville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
675A: Greenbush-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
675B: Greenbush-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
728B: Winnebago-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
728C2: Winnebago-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
766A: Lamartine-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
768C: Backbone-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
771A: Hayfield-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.44
772A: Marshan-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.54
777A: Adrian-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
779B: Chelsea-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
779D: Chelsea-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
780B: Grellton-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
780C2: Grellton-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
781A: Friesland-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
781B: Friesland-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
782A: Juneau-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
783A: Flagler-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.91
783B: Flagler-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.91
791A: Rush-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.27
802B: Orthents, loamy----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
864: Pits, quarry-----	Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated	
939C2: Rodman-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.40	Bottom layer	0.63
Warsaw-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.27	Bottom layer	0.27
939D2: Rodman-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.40	Bottom layer	0.63
Warsaw-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.27	Bottom layer	0.27
969E2: Casco-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.20	Bottom layer	0.30
Rodman-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.40	Bottom layer	0.63

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
1082A: Millington-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
1100A: Palms-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
1103A: Houghton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
1776A: Comfrey, frequently flooded-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Comfrey, occasionally flooded-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
1777A: Adrian-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3082A: Millington-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3107A: Sawmill-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3415A: Orion-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3776A: Comfrey-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3800A: Psammments-----	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.97
	Thickest layer	0.00	Thickest layer	0.97
8082A: Millington-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
8776A: Comfrey-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8782A: Juneau-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
9061A: Atterberry-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
9068A: Sable-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
9278A: Stronghurst-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Fair		Fair		Fair	
	Organic matter content	0.12	Shrink-swell	0.94	Too clayey	0.57
	Water erosion	0.68				
	Too acid	0.74				
	Too clayey	0.98				
21C2: Pecatonica-----	Fair		Fair		Fair	
	Organic matter content	0.24	Shrink-swell	0.95	Too clayey	0.60
	Too acid	0.54				
	Water erosion	0.90				
	Too clayey	0.98				
22B: Westville-----	Fair		Poor		Good	
	Organic matter content	0.68	Low strength	0.00		
	Too acid	0.84	Shrink-swell	0.87		
22C2: Westville-----	Fair		Poor		Good	
	Organic matter content	0.68	Low strength	0.00		
	Too acid	0.84	Shrink-swell	0.92		
22D2: Westville-----	Fair		Poor		Fair	
	Organic matter content	0.68	Low strength	0.00	Slope	0.04
	Too acid	0.84	Shrink-swell	0.92		
51A: Muscatune-----	Fair		Poor		Fair	
	Too acid	0.84	Low strength	0.00	Wetness	0.14
	Too clayey	0.92	Wetness	0.14	Too clayey	0.67
	Organic matter content	0.92	Shrink-swell	0.99		
	Water erosion	0.99				
59A: Lisbon-----	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness	0.14	Wetness	0.14
	Carbonate content	0.46	Shrink-swell	0.99		
	Water erosion	0.99				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
61A: Atterberry-----	Fair		Poor		Fair	
	Organic matter content	0.18	Low strength Wetness	0.00 0.04	Wetness Too clayey	0.04 0.55
	Too acid	0.74	Shrink-swell	0.99		
	Water erosion	0.90				
	Too clayey	0.92				
62A: Herbert-----	Poor		Fair		Fair	
	Organic matter content	0.00	Wetness	0.04	Wetness Hard to reclaim (dense layer)	0.04 0.20
	Carbonate content	0.68				
	Water erosion	0.90				
68A: Sable-----	Fair		Poor		Poor	
	Organic matter content	0.68	Wetness Low strength	0.00 0.00	Wetness Too clayey	0.00 0.98
	Too clayey	0.98	Shrink-swell	0.97		
	Water erosion	0.99				
68A+: Sable-----	Fair		Poor		Poor	
	Organic matter content	0.68	Wetness Low strength	0.00 0.00	Wetness Too clayey	0.00 0.67
	Too clayey	0.98	Shrink-swell	0.97		
	Water erosion	0.99				
86A: Osco-----	Fair		Poor		Fair	
	Organic matter content	0.50	Low strength Shrink-swell	0.00 0.87	Too clayey	0.64
	Water erosion	0.68				
	Too acid	0.84				
	Too clayey	0.98				
86B: Osco-----	Fair		Poor		Fair	
	Organic matter content	0.50	Low strength Shrink-swell	0.00 0.87	Too clayey	0.64
	Too acid	0.84				
	Too clayey	0.98				
	Water erosion	0.99				
87A: Dickinson-----	Fair		Good		Good	
	Organic matter content	0.12				
	Too acid	0.74				
100A: Palms-----	Poor		Poor		Poor	
	Wind erosion	0.00	Wetness Low strength	0.00 0.00	Wetness Organic matter content	0.00 0.00
102A: La Hogue-----	Fair		Fair		Fair	
	Too acid	0.99	Wetness	0.14	Wetness	0.14

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
103A: Houghton-----	Poor		Poor		Poor	
	Wind erosion	0.00	Wetness	0.00	Wetness	0.00
	Too acid	0.88			Organic matter content	0.00
104A: Virgil-----	Fair		Poor		Fair	
	Organic matter content	0.68	Low strength Wetness	0.00 0.04	Wetness Too clayey	0.04 0.67
	Water erosion	0.90	Shrink-swell	0.91		
	Too acid	0.97				
	Too clayey	0.98				
119B: Elco-----	Fair		Poor		Fair	
	Organic matter content	0.02	Low strength Shrink-swell	0.00 0.45	Too clayey Wetness	0.57 0.98
	Water erosion	0.68	Wetness	0.98		
	Too clayey	0.98				
125A: Selma-----	Good		Poor		Poor	
			Wetness Shrink-swell	0.00 0.98	Hard to reclaim (dense layer) Wetness	0.00 0.00
134A: Camden-----	Fair		Fair		Good	
	Organic matter content	0.08	Shrink-swell	0.92		
	Water erosion	0.68				
	Too acid	0.84				
146A: Elliott-----	Fair		Poor		Fair	
	Organic matter content	0.18	Low strength Wetness	0.00 0.07	Wetness Too clayey	0.07 0.55
	Carbonate content	0.84	Shrink-swell	0.97		
	Too acid	0.84				
	Too clayey	0.92				
	Water erosion	0.99				
148A: Proctor-----	Fair		Fair		Good	
	Organic matter content	0.12	Shrink-swell	0.98		
	Too acid	0.84				
	Water erosion	0.99				
148B: Proctor-----	Fair		Fair		Good	
	Organic matter content	0.68	Shrink-swell	0.97		
	Water erosion	0.99				
149A: Brenton-----	Fair		Poor		Fair	
	Water erosion	0.99	Low strength Wetness Shrink-swell	0.00 0.14 0.99	Wetness	0.14

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
152A: Drummer-----	Fair		Poor		Poor	
	Carbonate content	0.92	Wetness	0.00	Wetness	0.00
	Water erosion	0.99	Low strength	0.00		
			Shrink-swell	0.97		
152A+: Drummer-----	Fair		Poor		Poor	
	Organic matter content	0.50	Wetness	0.00	Wetness	0.00
	Carbonate content	0.92	Low strength	0.00		
	Water erosion	0.99	Shrink-swell	0.99		
153A: Pella-----	Fair		Poor		Poor	
	Carbonate content	0.80	Wetness	0.00	Wetness	0.00
	Too clayey	0.98	Low strength	0.00	Too clayey	0.81
	Too acid	0.99	Shrink-swell	0.99		
	Water erosion	0.99				
172A: Hoopeston-----	Fair		Fair		Fair	
	Organic matter content	0.68	Wetness	0.14	Wetness	0.14
188A: Beardstown-----	Fair		Fair		Fair	
	Organic matter content	0.50	Wetness	0.12	Wetness	0.12
	Too acid	0.54			Too acid	0.98
	Water erosion	0.99				
197A: Troxel-----	Fair		Good		Good	
	Too acid	0.84				
	Water erosion	0.99				
198A: Elburn-----	Fair		Poor		Fair	
	Too clayey	0.98	Low strength	0.00	Wetness	0.14
	Water erosion	0.99	Wetness	0.14	Too clayey	0.81
			Shrink-swell	0.99		
199A: Plano-----	Fair		Poor		Fair	
	Organic matter content	0.68	Low strength	0.00	Too clayey	0.67
	Too acid	0.97	Shrink-swell	0.98		
	Too clayey	0.98				
	Water erosion	0.99				
199B: Plano-----	Fair		Poor		Fair	
	Organic matter content	0.68	Low strength	0.00	Too clayey	0.67
	Too acid	0.92	Shrink-swell	0.99		
	Too clayey	0.98				
	Water erosion	0.99				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
199C2: Plano-----	Fair		Poor		Fair	
	Organic matter content	0.68	Low strength Shrink-swell	0.00 0.99	Too clayey	0.67
	Too acid	0.97				
	Too clayey	0.98				
	Water erosion	0.99				
206A: Thorp-----	Fair		Poor		Poor	
	Organic matter content	0.68	Wetness Low strength Shrink-swell	0.00 0.00 0.99	Wetness	0.00
	Water erosion	0.90				
	Too acid	0.97				
219A: Millbrook-----	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness Shrink-swell	0.04 0.99	Wetness Too acid	0.04 0.99
	Too acid	0.61				
	Water erosion	0.90				
221B: Parr-----	Fair		Fair		Fair	
	Organic matter content	0.02	Wetness	0.98	Hard to reclaim (dense layer)	0.94
	Carbonate content	0.92			Wetness	0.98
	Water erosion	0.99				
221C2: Parr-----	Fair		Fair		Fair	
	Organic matter content	0.02	Wetness	0.98	Hard to reclaim (dense layer)	0.80
	Carbonate content	0.92			Wetness	0.98
	Water erosion	0.99				
223B: Varna-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength Shrink-swell	0.00 0.97	Too clayey Wetness	0.00 0.98
	Carbonate content	0.97				
	Water erosion	0.99	Wetness	0.98		
	Too acid	0.99				
227B: Argyle-----	Fair		Good		Fair	
	Organic matter content	0.12			Rock fragments	0.01
	Too acid	0.74			Too clayey	0.57
	Water erosion	0.90			Hard to reclaim (rock fragments)	0.95
	Too clayey	0.98				
242A: Kendall-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength Wetness	0.00 0.04	Wetness Too clayey	0.04 0.57
	Too acid	0.61	Shrink-swell	0.95	Too acid	0.99
	Water erosion	0.68				
	Too clayey	0.98				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
243A: St. Charles-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength Shrink-swell	0.00 0.94	Too clayey	0.57
	Too acid	0.88				
	Water erosion	0.90				
	Too clayey	0.98				
243B: St. Charles-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength Shrink-swell	0.00 0.95	Too clayey	0.57
	Too acid	0.88				
	Water erosion	0.90				
	Too clayey	0.98				
243C2: St. Charles-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength Shrink-swell	0.00 0.99	Too clayey	0.57
	Too acid	0.88				
	Water erosion	0.90				
	Too clayey	0.98				
278A: Stronghurst-----	Fair		Poor		Fair	
	Water erosion	0.68	Low strength	0.00	Wetness	0.04
	Organic matter content	0.88	Wetness Shrink-swell	0.04 0.97	Too clayey	0.70
	Too acid	0.97				
	Too clayey	0.98				
279A: Rozetta-----	Fair		Poor		Fair	
	Organic matter content	0.24	Low strength Shrink-swell	0.00 0.96	Too clayey	0.60
	Water erosion	0.68				
	Too acid	0.68				
	Too clayey	0.98				
280B: Fayette-----	Fair		Poor		Fair	
	Organic matter content	0.50	Low strength Shrink-swell	0.00 0.87	Too clayey	0.64
	Water erosion	0.68				
	Too acid	0.68				
	Too clayey	0.98				
280C2: Fayette-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength Shrink-swell	0.00 0.87	Too clayey	0.57
	Too acid	0.68				
	Water erosion	0.90				
	Too clayey	0.98				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290A: Warsaw-----	Fair		Good		Poor	
	Organic matter content	0.50			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.68				
	Too acid	0.99				
290B: Warsaw-----	Fair		Good		Poor	
	Organic matter content	0.50			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.68				
	Too acid	0.97				
290C2: Warsaw-----	Fair		Good		Poor	
	Organic matter content	0.50			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.68				
	Too acid	0.97				
290D2: Warsaw-----	Fair		Good		Poor	
	Organic matter content	0.50			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.68			Slope	0.96
	Too acid	0.97				
293A: Andres-----	Fair		Poor		Fair	
	Organic matter content	0.18	Low strength	0.00	Wetness	0.12
	Too clayey	0.82	Wetness	0.12	Too clayey	0.64
	Carbonate content	0.84	Shrink-swell	0.96		
	Water erosion	0.99				
297B: Ringwood-----	Fair		Good		Good	
	Organic matter content	0.12				
	Carbonate content	0.80				
297C2: Ringwood-----	Fair		Fair		Good	
	Organic matter content	0.12	Shrink-swell	0.99		
	Carbonate content	0.80				
297D2: Ringwood-----	Fair		Good		Fair	
	Organic matter content	0.12			Slope	0.96
	Carbonate content	0.80				
310B: McHenry-----	Fair		Good		Fair	
	Organic matter content	0.12			Hard to reclaim (rock fragments)	0.99
	Carbonate content	0.92				
	Water erosion	0.99				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
310C2: McHenry-----	Fair		Good		Good	
	Organic matter content	0.12				
	Carbonate content	0.92				
310D2: McHenry-----	Fair		Good		Fair	
	Organic matter content	0.12			Slope	0.96
	Carbonate content	0.92				
325B: Dresden-----	Fair		Good		Poor	
	Organic matter content	0.12			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.46				
	Too acid	0.99				
325C2: Dresden-----	Fair		Good		Poor	
	Organic matter content	0.12			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.46				
	Too acid	0.99				
327B: Fox-----	Fair		Good		Poor	
	Organic matter content	0.12			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.68			Too clayey	0.53
	Too acid	0.92				
	Too clayey	0.92				
327C2: Fox-----	Fair		Good		Poor	
	Organic matter content	0.12			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.68			Too clayey	0.53
	Too clayey	0.92				
	Too acid	0.97				
327D2: Fox-----	Fair		Good		Poor	
	Organic matter content	0.12			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.68			Too clayey	0.53
	Too clayey	0.92			Slope	0.96
329A: Will-----	Fair		Poor		Poor	
	Organic matter content	0.50	Wetness	0.00	Wetness	0.00
	Carbonate content	0.68			Hard to reclaim (rock fragments)	0.00
332A: Billett-----	Fair		Good		Good	
	Organic matter content	0.12				
	Too acid	0.92				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
332B: Billett-----	Fair		Good		Good	
	Organic matter content	0.12				
	Too acid	0.92				
343A: Kane-----	Fair		Fair		Poor	
	Organic matter content	0.12	Wetness	0.14	Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.46			Wetness	0.14
	Too acid	0.88				
344A: Harvard-----	Fair		Poor		Good	
	Organic matter content	0.68	Low strength	0.00		
	Too acid	0.97	Shrink-swell	0.90		
	Water erosion	0.99				
344B: Harvard-----	Fair		Fair		Good	
	Organic matter content	0.12	Low strength	0.78		
	Too acid	0.97	Shrink-swell	0.90		
	Water erosion	0.99				
354A: Hononegah-----	Poor		Good		Poor	
	Wind erosion	0.00			Hard to reclaim (rock fragments)	0.00
	Droughty	0.00			Too sandy	0.03
	Too sandy	0.03			Rock fragments	0.99
	Organic matter content	0.12				
	Carbonate content	0.68				
354B: Hononegah-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Wind erosion	0.00			Rock fragments	0.00
	Droughty	0.00			Hard to reclaim (rock fragments)	0.00
	Organic matter content	0.12				
	Carbonate content	0.68				
361B: Kidder-----	Fair		Good		Good	
	Organic matter content	0.12				
	Carbonate content	0.92				
361C2: Kidder-----	Fair		Good		Good	
	Organic matter content	0.68				
	Carbonate content	0.92				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
361D2: Kidder-----	Fair		Good		Fair	
	Organic matter content	0.12			Slope	0.96
	Carbonate content	0.92				
361D3: Kidder-----	Fair		Good		Fair	
	Organic matter content	0.12			Rock fragments	0.88
	Carbonate content	0.92			Slope	0.96
361E2: Kidder-----	Fair		Fair		Poor	
	Organic matter content	0.12	Slope	0.98	Slope	0.00
	Carbonate content	0.92				
363C2: Griswold-----	Fair		Good		Good	
	Organic matter content	0.12				
	Carbonate content	0.68				
363D2: Griswold-----	Fair		Good		Fair	
	Organic matter content	0.12			Slope	0.96
	Carbonate content	0.68				
369A: Waupecan-----	Fair		Poor		Good	
	Too acid	0.84	Low strength	0.00		
	Organic matter content	0.88				
	Water erosion	0.99				
379A: Dakota-----	Fair		Good		Good	
	Organic matter content	0.12				
	Too acid	0.84				
387A: Ockley-----	Fair		Fair		Fair	
	Organic matter content	0.12	Shrink-swell	0.89	Hard to reclaim (rock fragments)	0.46
	Too acid	0.54			Too clayey	0.57
	Carbonate content	0.68			Rock fragments	0.88
	Too clayey	0.98			Too acid	0.98
387B: Ockley-----	Fair		Fair		Fair	
	Organic matter content	0.12	Shrink-swell	0.91	Hard to reclaim (rock fragments)	0.46
	Too acid	0.54			Too clayey	0.57
	Carbonate content	0.68			Rock fragments	0.88
	Too clayey	0.98			Too acid	0.98

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
403E: Elizabeth-----	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Droughty	0.00	Slope	0.05	Rock fragments	0.00
	Stone content	0.60			Slope	0.00
	Carbonate content	0.92				
	Cobble content	0.93				
412B: Ogle-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Too clayey	0.64
	Too acid	0.74	Shrink-swell	0.89		
	Too clayey	0.98				
	Water erosion	0.99				
419A: Flagg-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.54	Shrink-swell	0.99	Too acid	0.98
	Water erosion	0.68				
	Too clayey	0.98				
419B: Flagg-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.54	Shrink-swell	0.97	Too acid	0.98
	Water erosion	0.68				
	Too clayey	0.98				
419C2: Flagg-----	Fair		Poor		Fair	
	Organic matter content	0.02	Low strength	0.00	Too clayey	0.57
	Too acid	0.54			Too acid	0.98
	Water erosion	0.90				
	Too clayey	0.98				
440A: Jasper-----	Good		Poor		Good	
			Low strength	0.00		
440B: Jasper-----	Good		Poor		Good	
			Low strength	0.00		
			Shrink-swell	0.99		
440C2: Jasper-----	Fair		Good		Good	
	Organic matter content	0.12				
490A: Odell-----	Fair		Fair		Fair	
	Organic matter content	0.02	Wetness	0.12	Wetness	0.12
	Carbonate content	0.92				
	Too acid	0.95				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
503B: Rockton-----	Fair		Poor		Fair	
	Depth to bedrock	0.90	Depth to bedrock	0.00	Too clayey	0.76
	Too clayey	0.98	Low strength	0.00	Depth to bedrock	0.90
			Shrink-swell	0.81		
505D2: Dunbarton-----	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Droughty	0.05	Low strength	0.00	Rock fragments	0.50
	Too clayey	0.92	Shrink-swell	0.52	Too clayey	0.87
					Slope	0.96
505E2: Dunbarton-----	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
	Depth to bedrock	0.00	Low strength	0.00	Depth to bedrock	0.00
	Droughty	0.00	Shrink-swell	0.12	Slope	0.00
	Organic matter content	0.03	Slope	0.98	Rock fragments	0.50
506B: Hitt-----	Fair		Poor		Fair	
	Organic matter content	0.08	Low strength	0.00	Too clayey	0.52
	Too acid	0.84	Depth to bedrock	0.16		
	Too clayey	0.92	Shrink-swell	0.93		
	Water erosion	0.99				
512A: Danabrook-----	Fair		Fair		Fair	
	Organic matter content	0.24	Low strength	0.22	Wetness	0.98
	Carbonate content	0.46	Wetness	0.98		
	Too acid	0.84	Shrink-swell	0.98		
	Water erosion	0.99				
512B: Danabrook-----	Fair		Poor		Fair	
	Carbonate content	0.46	Low strength	0.00	Wetness	0.98
	Water erosion	0.99	Shrink-swell	0.97		
			Wetness	0.98		
512C2: Danabrook-----	Fair		Fair		Fair	
	Organic matter content	0.24	Wetness	0.98	Wetness	0.98
	Carbonate content	0.54	Shrink-swell	0.99		
	Too acid	0.97				
	Water erosion	0.99				
523A: Dunham-----	Fair		Poor		Poor	
	Carbonate content	0.46	Wetness	0.00	Wetness	0.00
	Water erosion	0.99	Low strength	0.00	Hard to reclaim	0.08
	Too acid	0.99	Shrink-swell	0.98	(rock fragments)	

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
526A: Grundelein-----	Fair		Poor		Fair	
	Carbonate content	0.46	Low strength	0.00	Hard to reclaim	0.08
	Water erosion	0.99	Wetness	0.14	(rock fragments)	
	Too acid	0.99	Shrink-swell	0.99	Wetness	0.14
527B: Kidami-----	Fair		Poor		Fair	
	Carbonate content	0.16	Low strength	0.00	Wetness	0.98
	Organic matter content	0.68	Wetness	0.98		
	Too acid	0.84	Shrink-swell	0.99		
	Water erosion	0.99				
527C2: Kidami-----	Fair		Poor		Fair	
	Carbonate content	0.16	Low strength	0.00	Wetness	0.98
	Organic matter content	0.68	Wetness	0.98		
	Too acid	0.97				
527D2: Kidami-----	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness	0.98	Hard to reclaim	0.90
	Carbonate content	0.16			(dense layer)	
	Too acid	0.97			Slope	0.96
	Water erosion	0.99			Wetness	0.98
528A: Lahoguess-----	Good		Fair		Fair	
			Wetness	0.14	Wetness	0.14
			Low strength	0.78		
529A: Selmass-----	Good		Poor		Poor	
			Wetness	0.00	Wetness	0.00
			Low strength	0.00		
			Shrink-swell	0.99		
543B: Piscasaw-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Too clayey	0.70
	Water erosion	0.68	Shrink-swell	0.95		
	Carbonate content	0.68				
	Too acid	0.84				
	Too clayey	0.98				
544A: Torox-----	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness	0.14	Wetness	0.14
	Carbonate content	0.68	Shrink-swell	0.99	Too clayey	0.70
	Too acid	0.74				
	Water erosion	0.90				
	Too clayey	0.98				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
545A:						
Windere-----	Fair		Poor		Fair	
	Carbonate content	0.46	Low strength	0.00	Too clayey	0.70
	Water erosion	0.68	Shrink-swell	0.96	Wetness	0.98
	Too acid	0.84	Wetness	0.98		
	Organic matter content	0.88				
	Too clayey	0.98				
545B:						
Windere-----	Fair		Poor		Fair	
	Carbonate content	0.46	Low strength	0.00	Too clayey	0.81
	Too acid	0.84	Shrink-swell	0.95	Wetness	0.98
	Too clayey	0.98	Wetness	0.98		
	Water erosion	0.99				
561B:						
Whalan-----	Fair		Poor		Fair	
	Organic matter content	0.68	Depth to bedrock	0.00	Depth to bedrock	0.99
	Too acid	0.84	Low strength	0.00		
	Depth to bedrock	0.99	Shrink-swell	0.77		
NewGlarus-----	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
	Organic matter content	0.12	Low strength	0.00	Depth to bedrock	0.97
	Water erosion	0.90	Shrink-swell	0.55		
	Depth to bedrock	0.97				
561C2:						
Whalan-----	Fair		Poor		Fair	
	Organic matter content	0.68	Depth to bedrock	0.00	Depth to bedrock	0.93
	Too acid	0.84	Low strength	0.22		
	Depth to bedrock	0.93	Shrink-swell	0.81		
NewGlarus-----	Fair		Poor		Fair	
	Organic matter content	0.88	Depth to bedrock	0.00	Depth to bedrock	0.93
	Water erosion	0.90	Low strength	0.00		
	Depth to bedrock	0.93	Shrink-swell	0.50		
561D2:						
Whalan-----	Fair		Poor		Fair	
	Depth to bedrock	0.29	Depth to bedrock	0.00	Slope	0.26
	Organic matter content	0.68	Low strength	0.00	Depth to bedrock	0.29
	Too acid	0.84	Shrink-swell	0.81	Too clayey	0.67
	Droughty	0.88				
	Too clayey	0.98				
NewGlarus-----	Fair		Poor		Fair	
	Depth to bedrock	0.54	Depth to bedrock	0.00	Slope	0.26
	Organic matter content	0.88	Low strength	0.00	Depth to bedrock	0.54
	Water erosion	0.90	Shrink-swell	0.55		
	Droughty	0.96				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
566B:						
Rockton-----	Fair		Poor		Fair	
	Depth to bedrock	0.16	Depth to bedrock	0.00	Depth to bedrock	0.16
	Droughty	0.67	Low strength	0.00	Too clayey	0.76
	Too acid	0.97	Shrink-swell	0.69		
	Too clayey	0.98				
Dodgeville-----	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
	Organic matter content	0.12	Low strength	0.00	Depth to bedrock	0.93
	Too acid	0.61	Shrink-swell	0.50	Too acid	0.99
	Depth to bedrock	0.93				
	Water erosion	0.99				
	Droughty	0.99				
566C2:						
Rockton-----	Fair		Poor		Fair	
	Depth to bedrock	0.10	Depth to bedrock	0.00	Depth to bedrock	0.10
	Droughty	0.53	Low strength	0.00	Too clayey	0.76
	Too acid	0.97	Shrink-swell	0.70		
	Too clayey	0.98				
Dodgeville-----	Fair		Poor		Fair	
	Too acid	0.61	Depth to bedrock	0.00	Depth to bedrock	0.65
	Depth to bedrock	0.65	Low strength	0.00		
	Droughty	0.96	Shrink-swell	0.60		
	Water erosion	0.99				
566D2:						
Rockton-----	Fair		Poor		Fair	
	Depth to bedrock	0.03	Depth to bedrock	0.00	Depth to bedrock	0.03
	Droughty	0.32	Low strength	0.00	Slope	0.26
	Too acid	0.97	Shrink-swell	0.78	Too clayey	0.76
	Too clayey	0.98				
Dodgeville-----	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
	Depth to bedrock	0.10	Low strength	0.00	Depth to bedrock	0.10
	Organic matter content	0.12	Shrink-swell	0.26	Slope	0.26
	Droughty	0.17			Too acid	0.99
	Too acid	0.61				
	Water erosion	0.99				
570A:						
Martinsville-----	Fair		Fair		Good	
	Organic matter content	0.68	Shrink-swell	0.99		
	Too acid	0.92				
570B:						
Martinsville-----	Fair		Fair		Good	
	Organic matter content	0.68	Shrink-swell	0.99		
	Too acid	0.92				
	Water erosion	0.99				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
570C2: Martinsville-----	Fair		Fair		Good	
	Organic matter content	0.68	Shrink-swell	0.99		
	Too acid	0.74				
570D2: Martinsville-----	Fair		Fair		Fair	
	Organic matter content	0.68	Shrink-swell	0.99	Slope	0.96
	Too acid	0.74				
618B: Senachwine-----	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Too clayey	0.57
	Carbonate content	0.16				
	Too acid	0.97				
	Too clayey	0.98				
623A: Kishwaukee-----	Fair		Poor		Fair	
	Too acid	0.84	Low strength	0.00	Hard to reclaim	0.68
	Carbonate content	0.97	Shrink-swell	0.93	(rock fragments)	
623B: Kishwaukee-----	Fair		Poor		Fair	
	Too acid	0.84	Low strength	0.00	Hard to reclaim	0.68
	Carbonate content	0.97	Shrink-swell	0.90	(rock fragments)	
624B: Caprell-----	Fair		Poor		Good	
	Carbonate content	0.16	Low strength	0.00		
	Organic matter content	0.88				
	Too acid	0.97				
624C2: Caprell-----	Fair		Good		Good	
	Organic matter content	0.12				
	Carbonate content	0.16				
	Too acid	0.97				
624D2: Caprell-----	Fair		Good		Fair	
	Organic matter content	0.12			Slope	0.96
	Carbonate content	0.16				
	Too acid	0.97				
624E: Caprell-----	Fair		Poor		Poor	
	Carbonate content	0.16	Low strength	0.00	Slope	0.00
	Organic matter content	0.88	Slope	0.98		
	Too acid	0.97				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
625B: Geryune-----	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness Shrink-swell	0.98 0.99	Wetness	0.98
	Carbonate content	0.46				
	Too acid	0.84				
	Water erosion	0.99				
626A: Kish-----	Fair		Poor		Poor	
	Carbonate content	0.68	Wetness Low strength Shrink-swell	0.00 0.22 0.97	Wetness Carbonate content	0.00 0.97
635A: Lismod-----	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness	0.14	Wetness	0.14
	Carbonate content	0.46				
	Water erosion	0.99				
635B: Lismod-----	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness	0.14	Wetness	0.14
	Carbonate content	0.46				
	Water erosion	0.99				
636B: Parmod-----	Fair		Poor		Good	
	Carbonate content	0.46	Low strength	0.00		
	Organic matter content	0.88				
636C2: Parmod-----	Fair		Good		Good	
	Organic matter content	0.12				
	Carbonate content	0.46				
	Too acid	0.97				
667C2: Kaneville-----	Fair		Poor		Fair	
	Organic matter content	0.82	Low strength Shrink-swell	0.00 0.95	Wetness	0.98
	Water erosion	0.99	Wetness	0.98		
675A: Greenbush-----	Fair		Poor		Fair	
	Organic matter content	0.88	Low strength Shrink-swell	0.00 0.93	Too clayey	0.70
	Water erosion	0.90				
	Too acid	0.97				
	Too clayey	0.98				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
675B: Greenbush-----	Fair		Poor		Fair	
	Organic matter content	0.88	Low strength Shrink-swell	0.00 0.91	Too clayey	0.70
	Too acid	0.97				
	Too clayey	0.98				
	Water erosion	0.99				
728B: Winnebago-----	Fair		Fair		Good	
	Organic matter content	0.68	Shrink-swell	0.92		
	Too acid	0.74				
728C2: Winnebago-----	Fair		Fair		Good	
	Organic matter content	0.68	Shrink-swell	0.91		
	Too acid	0.74				
766A: Lamartine-----	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness Shrink-swell	0.14 0.99	Wetness Too clayey	0.14 0.70
	Carbonate content	0.32				
	Too acid	0.74				
	Too clayey	0.98				
	Water erosion	0.99				
768C: Backbone-----	Poor		Poor		Fair	
	Wind erosion	0.00	Depth to bedrock	0.00	Depth to bedrock	0.16
	Droughty	0.02	Low strength	0.00		
	Organic matter content	0.12	Shrink-swell	0.99		
	Depth to bedrock	0.16				
	Too acid	0.97				
771A: Hayfield-----	Poor		Fair		Poor	
	Too sandy	0.00	Wetness	0.12	Too sandy	0.00
	Organic matter content	0.12			Wetness	0.12
	Water erosion	0.99			Rock fragments	0.88
772A: Marshan-----	Fair		Poor		Poor	
	Organic matter content	0.12	Wetness	0.00	Wetness	0.00
777A: Adrian-----	Poor		Poor		Poor	
	Wind erosion	0.00	Wetness	0.00	Wetness	0.00
					Organic matter content	0.00

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
779B: Chelsea-----	Poor		Good		Fair	
	Wind erosion	0.00			Too sandy	0.08
	Organic matter content	0.05				
	Too sandy	0.08				
	Too acid	0.54				
779D: Chelsea-----	Poor		Good		Fair	
	Wind erosion	0.00			Too sandy	0.22
	Too sandy	0.22			Slope	0.96
	Too acid	0.54			Too acid	0.99
	Organic matter content	0.60				
780B: Grellton-----	Fair		Good		Good	
	Organic matter content	0.12				
	Water erosion	0.99				
780C2: Grellton-----	Fair		Poor		Good	
	Organic matter content	0.18	Low strength	0.00		
	Water erosion	0.99	Shrink-swell	0.97		
781A: Friesland-----	Fair		Fair		Good	
	Too acid	0.95	Shrink-swell	0.97		
	Water erosion	0.99				
781B: Friesland-----	Fair		Fair		Good	
	Too acid	0.95				
	Water erosion	0.99				
782A: Juneau-----	Fair		Fair		Good	
	Water erosion	0.37				
783A: Flagler-----	Fair		Good		Good	
	Organic matter content	0.12				
	Too acid	0.84				
783B: Flagler-----	Fair		Good		Good	
	Organic matter content	0.12				
	Too acid	0.84				
	Droughty	0.94				

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
791A:						
Rush-----	Fair		Poor		Fair	
	Water erosion	0.68	Low strength	0.00	Hard to reclaim	0.68
	Too acid	0.68	Shrink-swell	0.98	(rock fragments)	
	Carbonate content	0.80				
	Organic matter content	0.88				
802B:						
Orthents, loamy----	Fair		Poor		Good	
	Organic matter content	0.68	Low strength	0.00		
	Water erosion	0.90	Shrink-swell	0.87		
864:						
Pits, quarry-----	Not rated		Not rated		Not rated	
865:						
Pits, gravel-----	Not rated		Not rated		Not rated	
939C2:						
Rodman-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Droughty	0.00			Hard to reclaim	0.00
	Carbonate content	0.46			(rock fragments)	
	Organic matter content	0.50			Rock fragments	0.00
					Carbonate content	0.97
Warsaw-----	Fair		Good		Poor	
	Organic matter content	0.50			Hard to reclaim	0.00
	Carbonate content	0.68			(rock fragments)	
	Too acid	0.97				
939D2:						
Rodman-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Droughty	0.00			Hard to reclaim	0.00
	Carbonate content	0.46			(rock fragments)	
	Organic matter content	0.50			Rock fragments	0.00
					Carbonate content	0.95
					Slope	0.96
Warsaw-----	Fair		Good		Poor	
	Organic matter content	0.50			Hard to reclaim	0.00
	Carbonate content	0.68			(rock fragments)	
	Too acid	0.97			Slope	0.96
969E2:						
Casco-----	Poor		Fair		Poor	
	Too sandy	0.00	Slope	0.98	Too sandy	0.00
	Organic matter content	0.12			Slope	0.00
	Droughty	0.41			Rock fragments	0.00
					Hard to reclaim	0.00
					(rock fragments)	

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
969E2: Rodman-----	Poor Too sandy Droughty Carbonate content Organic matter content	 0.00 0.00 0.46 0.50	Fair Slope	 0.98	Poor Too sandy Hard to reclaim (rock fragments) Rock fragments Slope Carbonate content	 0.00 0.00 0.00 0.00 0.88
1082A: Millington-----	Fair Carbonate content	 0.92	Poor Wetness Shrink-swell	 0.00 0.96	Poor Wetness	 0.00
1100A: Palms-----	Poor Wind erosion	 0.00	Poor Wetness Low strength	 0.00 0.00	Poor Wetness Organic matter content	 0.00 0.00
1103A: Houghton-----	Poor Wind erosion Too acid	 0.00 0.88	Poor Wetness	 0.00	Poor Wetness Organic matter content	 0.00 0.00
1776A: Comfrey, frequently flooded-----	Good		Poor Wetness Low strength Shrink-swell	 0.00 0.00 0.87	Poor Wetness	 0.00
Comfrey, occasionally flooded-----	Good		Poor Wetness Low strength Shrink-swell	 0.00 0.00 0.87	Poor Wetness	 0.00
1777A: Adrian-----	Poor Wind erosion Organic matter content	 0.00 0.12	Poor Wetness	 0.00	Poor Wetness Organic matter content	 0.00 0.00
3082A: Millington-----	Fair Carbonate content	 0.92	Poor Wetness Low strength Shrink-swell	 0.00 0.00 0.98	Poor Wetness	 0.00
3107A: Sawmill-----	Fair Too clayey Too acid	 0.98 0.99	Poor Wetness Low strength Shrink-swell	 0.00 0.00 0.87	Poor Wetness Too clayey	 0.00 0.98

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3415A: Orion-----	Fair Water erosion	0.37	Poor Low strength Wetness	0.00 0.14	Fair Wetness	0.14
3776A: Comfrey-----	Good		Poor Wetness Low strength Shrink-swell	0.00 0.00 0.87	Poor Wetness	0.00
3800A: Psammets-----	Poor Too sandy Wind erosion Organic matter content Too acid Droughty	0.00 0.00 0.12 0.88 0.98	Good		Poor Too sandy	0.00
8082A: Millington-----	Fair Carbonate content	0.92	Poor Wetness Shrink-swell	0.00 0.98	Poor Wetness	0.00
8776A: Comfrey-----	Good		Poor Wetness Low strength Shrink-swell	0.00 0.00 0.87	Poor Wetness	0.00
8782A: Juneau-----	Fair Organic matter content Water erosion	0.12 0.37	Poor Low strength Shrink-swell	0.00 0.98	Good	
9061A: Atterberry-----	Fair Organic matter content Too acid Water erosion Too clayey	0.18 0.74 0.90 0.92	Poor Low strength Wetness Shrink-swell	0.00 0.04 0.99	Fair Wetness Too clayey	0.04 0.55
9068A: Sable-----	Fair Organic matter content Too clayey Water erosion	0.68 0.98 0.99	Poor Wetness Low strength Shrink-swell	0.00 0.00 0.97	Poor Wetness Too clayey	0.00 0.98
9278A: Stronghurst-----	Fair Water erosion Organic matter content Too acid Too clayey	0.68 0.88 0.97 0.98	Poor Low strength Wetness Shrink-swell	0.00 0.04 0.97	Fair Wetness Too clayey	0.04 0.70

Table 20a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
21C2: Pecatonica-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.01	Very limited Depth to water	1.00
22B: Westville-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.01	Very limited Depth to water	1.00
22C2: Westville-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.01	Very limited Depth to water	1.00
22D2: Westville-----	Somewhat limited Seepage Slope	0.72 0.02	Not limited		Very limited Depth to water	1.00
51A: Muscatune-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.18	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
59A: Lisbon-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.19	Very limited Depth to water	1.00
61A: Atterberry-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.03	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
62A: Herbert-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.60	Very limited Depth to water	1.00
68A: Sable-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A+:						
Sable-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
86A:						
Osc-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.02	Very limited Depth to water	1.00
86B:						
Osc-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
87A:						
Dickinson-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.39	Very limited Depth to water	1.00
100A:						
Palms-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Somewhat limited Cutbanks cave	0.10
102A:						
La Hogue-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 1.00 0.01	Very limited Cutbanks cave	1.00
103A:						
Houghton-----	Very limited Seepage	1.00	Very limited Organic matter content Depth to saturated zone Ponding	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
104A:						
Virgil-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping	1.00 0.02	Very limited Cutbanks cave	1.00
119B:						
Elco-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.68 0.05	Very limited Depth to water	1.00
125A:						
Selma-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Ponding Seepage	1.00 1.00 1.00 0.01	Very limited Cutbanks cave	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134A: Camden-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.96 0.02	Very limited Depth to water	1.00
146A: Elliott-----	Not limited		Very limited Depth to saturated zone Piping	1.00 0.41	Very limited Depth to water	1.00
148A: Proctor-----	Very limited Seepage	1.00	Somewhat limited Piping	0.58	Very limited Depth to water	1.00
148B: Proctor-----	Very limited Seepage	1.00	Somewhat limited Piping	0.46	Very limited Depth to water	1.00
149A: Brenton-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping	1.00 0.60	Very limited Cutbanks cave	1.00
152A: Drummer-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Cutbanks cave	1.00
152A+: Drummer-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.02	Very limited Cutbanks cave Slow refill	1.00 0.28
153A: Pella-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.04	Very limited Cutbanks cave	1.00
172A: Hoopeston-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.15	Very limited Cutbanks cave	1.00
188A: Beardstown-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 1.00 0.33	Very limited Cutbanks cave	1.00
197A: Troxel-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.74	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
198A: Elburn-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 0.51 0.05	Very limited Cutbanks cave	1.00
199A: Plano-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.48 0.01	Very limited Depth to water	1.00
199B: Plano-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.94 0.01	Very limited Depth to water	1.00
199C2: Plano-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.32 0.01	Very limited Depth to water	1.00
206A: Thorp-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding Piping Seepage	1.00 1.00 0.48 0.01	Very limited Cutbanks cave	1.00
219A: Millbrook-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping	1.00 0.93	Very limited Cutbanks cave	1.00
221B: Parr-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.97 0.68	Very limited Depth to water	1.00
221C2: Parr-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.98 0.68	Very limited Depth to water	1.00
223B: Varna-----	Somewhat limited Seepage	0.02	Somewhat limited Depth to saturated zone	0.68	Very limited Depth to water	1.00
227B: Argyle-----	Somewhat limited Seepage	0.72	Somewhat limited Seepage Piping	0.09 0.05	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
242A: Kendall-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.53	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
243A: St. Charles-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.64	Very limited Depth to water	1.00
243B: St. Charles-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.63	Very limited Depth to water	1.00
243C2: St. Charles-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.19	Very limited Depth to water	1.00
278A: Stronghurst-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
279A: Rozetta-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
280B: Fayette-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.21	Very limited Depth to water	1.00
280C2: Fayette-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
290A: Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.28	Very limited Depth to water	1.00
290B: Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.28	Very limited Depth to water	1.00
290C2: Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.28	Very limited Depth to water	1.00
290D2: Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.28	Very limited Depth to water	1.00
293A: Andres-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.75	Very limited Depth to water	1.00
297B: Ringwood-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.99 0.01	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297C2: Ringwood-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.97 0.01	Very limited Depth to water	1.00
297D2: Ringwood-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.01	Very limited Depth to water	1.00
310B: McHenry-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.01	Very limited Depth to water	1.00
310C2: McHenry-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.01	Very limited Depth to water	1.00
310D2: McHenry-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.01	Very limited Depth to water	1.00
325B: Dresden-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.26	Very limited Depth to water	1.00
325C2: Dresden-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.26	Very limited Depth to water	1.00
327B: Fox-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.31	Very limited Depth to water	1.00
327C2: Fox-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.31	Very limited Depth to water	1.00
327D2: Fox-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.31	Very limited Depth to water	1.00
329A: Will-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding Seepage	1.00 1.00 0.43	Very limited Cutbanks cave	1.00
332A: Billett-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.26	Very limited Depth to water	1.00
332B: Billett-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.26	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
343A: Kane-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.31	Very limited Cutbanks cave	1.00
344A: Harvard-----	Very limited Seepage	1.00	Somewhat limited Piping	0.61	Very limited Depth to water	1.00
344B: Harvard-----	Very limited Seepage	1.00	Somewhat limited Piping	0.77	Very limited Depth to water	1.00
354A: Hononegah-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.39	Very limited Depth to water	1.00
354B: Hononegah-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.39	Very limited Depth to water	1.00
361B: Kidder-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
361C2: Kidder-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.04	Very limited Depth to water	1.00
361D2: Kidder-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.04	Very limited Depth to water	1.00
361D3: Kidder-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
361E2: Kidder-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
363C2: Griswold-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.04	Very limited Depth to water	1.00
363D2: Griswold-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.04	Very limited Depth to water	1.00
369A: Waupecan-----	Very limited Seepage	1.00	Very limited Piping Seepage	0.99 0.31	Very limited Depth to water	1.00
379A: Dakota-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.12	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
387A: Ockley-----	Very limited Seepage	1.00	Somewhat limited Seepage Piping	0.67 0.05	Very limited Depth to water	1.00
387B: Ockley-----	Very limited Seepage	1.00	Somewhat limited Seepage Piping	0.67 0.09	Very limited Depth to water	1.00
403E: Elizabeth-----	Very limited Depth to bedrock Slope Seepage	1.00 0.23 0.02	Very limited Thin layer Content of large stones Piping	1.00 0.62 0.57	Very limited Depth to water	1.00
412B: Ogle-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
419A: Flagg-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
419B: Flagg-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
419C2: Flagg-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
440A: Jasper-----	Very limited Seepage	1.00	Very limited Piping	1.00	Very limited Depth to water	1.00
440B: Jasper-----	Very limited Seepage	1.00	Somewhat limited Piping	0.94	Very limited Depth to water	1.00
440C2: Jasper-----	Very limited Seepage	1.00	Very limited Piping	1.00	Very limited Depth to water	1.00
490A: Odell-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.79	Very limited Depth to water	1.00
503B: Rockton-----	Very limited Seepage Depth to bedrock	1.00 0.69	Somewhat limited Thin layer Piping	0.70 0.07	Very limited Depth to water	1.00
505D2: Dunbarton-----	Very limited Depth to bedrock Seepage	1.00 0.47	Very limited Thin layer Hard to pack	1.00 0.06	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
505E2: Dunbarton-----	Very limited Depth to bedrock Seepage Slope	1.00 0.47 0.04	Very limited Thin layer Hard to pack	1.00 0.33	Very limited Depth to water	1.00
506B: Hitt-----	Somewhat limited Seepage Depth to bedrock	0.72 0.26	Somewhat limited Thin layer Piping	0.26 0.01	Very limited Depth to water	1.00
512A: Danabrook-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.68 0.63	Very limited Depth to water	1.00
512B: Danabrook-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.68 0.60	Very limited Depth to water	1.00
512C2: Danabrook-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.75 0.68	Very limited Depth to water	1.00
523A: Dunham-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding Piping Seepage	1.00 1.00 0.63 0.17	Very limited Cutbanks cave	1.00
526A: Grundelein-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 1.00 0.17	Very limited Cutbanks cave	1.00
527B: Kidami-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.78 0.68	Very limited Depth to water	1.00
527C2: Kidami-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.87 0.68	Very limited Depth to water	1.00
527D2: Kidami-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.92 0.68	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
528A: Lahoguess-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 1.00 0.17	Very limited Cutbanks cave	1.00
529A: Selmass-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding Piping Seepage	1.00 1.00 0.99 0.16	Very limited Cutbanks cave	1.00
543B: Piscasaw-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.59	Very limited Depth to water	1.00
544A: Torox-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.78	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
545A: Windere-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.68 0.52	Somewhat limited Slow refill Depth to saturated zone Cutbanks cave	0.28 0.14 0.10
545B: Windere-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.68 0.58	Somewhat limited Slow refill Depth to saturated zone Cutbanks cave	0.28 0.14 0.10
561B: Whalan-----	Very limited Seepage Depth to bedrock	1.00 0.56	Somewhat limited Thin layer Piping	0.56 0.13	Very limited Depth to water	1.00
NewGlarus-----	Somewhat limited Depth to bedrock Seepage	0.61 0.54	Somewhat limited Thin layer Hard to pack	0.61 0.16	Very limited Depth to water	1.00
561C2: Whalan-----	Very limited Seepage Depth to bedrock	1.00 0.66	Somewhat limited Thin layer Piping	0.66 0.11	Very limited Depth to water	1.00
NewGlarus-----	Somewhat limited Depth to bedrock Seepage	0.66 0.54	Somewhat limited Thin layer Hard to pack	0.66 0.14	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
561D2:						
Whalan-----	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Depth to bedrock	0.93	Piping	0.18		
	Slope	0.01				
NewGlarus-----	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.86	Thin layer	0.86	Depth to water	1.00
	Seepage	0.54	Hard to pack	0.07		
	Slope	0.01				
566B:						
Rockton-----	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.96	Depth to water	1.00
	Depth to bedrock	0.96	Piping	0.06		
Dodgeville-----	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.66	Thin layer	0.66	Depth to water	1.00
	Seepage	0.54	Hard to pack	0.18		
566C2:						
Rockton-----	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.98	Depth to water	1.00
	Depth to bedrock	0.98	Piping	0.06		
Dodgeville-----	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.83	Thin layer	0.83	Depth to water	1.00
	Seepage	0.54				
566D2:						
Rockton-----	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	0.99	Depth to water	1.00
	Depth to bedrock	0.99	Piping	0.13		
	Slope	0.01				
Dodgeville-----	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.98	Thin layer	0.98	Depth to water	1.00
	Seepage	0.47	Hard to pack	0.25		
	Slope	0.01				
570A:						
Martinsville-----	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.03		
570B:						
Martinsville-----	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.03		
570C2:						
Martinsville-----	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.03		
570D2:						
Martinsville-----	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.03		

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
618B: Senachwine-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.82	Very limited Depth to water	1.00
623A: Kishwaukee-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.82 0.67	Very limited Depth to water	1.00
623B: Kishwaukee-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.78 0.67	Very limited Depth to water	1.00
624B: Caprell-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.85	Very limited Depth to water	1.00
624C2: Caprell-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Seepage	0.98 0.01	Very limited Depth to water	1.00
624D2: Caprell-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.97	Very limited Depth to water	1.00
624E: Caprell-----	Somewhat limited Seepage Slope	0.72 0.04	Somewhat limited Piping Seepage	0.94 0.01	Very limited Depth to water	1.00
625B: Geryune-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.73 0.68	Somewhat limited Slow refill Depth to saturated zone Cutbanks cave	0.28 0.14 0.10
626A: Kish-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.70	Somewhat limited Cutbanks cave	0.10
635A: Lismod-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.91	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
635B: Lismod-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.79	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
636B: Parmod-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.94	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
636C2: Parmod-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.97	Very limited Depth to water	1.00
667C2: Kaneville-----	Very limited Seepage	1.00	Somewhat limited Depth to saturated zone Piping	0.68 0.35	Very limited Cutbanks cave Depth to saturated zone	1.00 0.14
675A: Greenbush-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.28	Very limited Depth to water	1.00
675B: Greenbush-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.17	Very limited Depth to water Slow refill	1.00 0.28
728B: Winnebago-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.56	Very limited Depth to water	1.00
728C2: Winnebago-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.45	Very limited Depth to water	1.00
766A: Lamartine-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.76	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
768C: Backbone-----	Somewhat limited Depth to bedrock Seepage	0.96 0.47	Somewhat limited Thin layer	0.96	Very limited Depth to water	1.00
771A: Hayfield-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.44	Very limited Cutbanks cave	1.00
772A: Marshan-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding Seepage	1.00 1.00 0.54	Very limited Cutbanks cave	1.00
777A: Adrian-----	Very limited Seepage	1.00	Very limited Organic matter content Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Cutbanks cave	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
779B: Chelsea-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.10	Very limited Depth to water	1.00
779D: Chelsea-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.10	Very limited Depth to water	1.00
780B: Grellton-----	Somewhat limited Seepage	0.72	Very limited Piping Seepage	1.00 0.02	Very limited Depth to water	1.00
780C2: Grellton-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Seepage	0.98 0.02	Very limited Depth to water	1.00
781A: Friesland-----	Somewhat limited Seepage	0.72	Very limited Piping	1.00	Very limited Depth to water	1.00
781B: Friesland-----	Somewhat limited Seepage	0.72	Very limited Piping	1.00	Very limited Depth to water	1.00
782A: Juneau-----	Somewhat limited Seepage	0.72	Very limited Piping	1.00	Somewhat limited Depth to saturated zone Slow refill Cutbanks cave	0.99 0.28 0.10
783A: Flagler-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.98	Very limited Depth to water	1.00
783B: Flagler-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.98	Very limited Depth to water	1.00
791A: Rush-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.28	Very limited Depth to water	1.00
802B: Orthents, loamy----	Somewhat limited Seepage	0.04	Somewhat limited Piping	0.50	Very limited Depth to water	1.00
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
939C2: Rodman-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.63	Very limited Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
939C2: Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.28	Very limited Depth to water	1.00
939D2: Rodman-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.63	Very limited Depth to water	1.00
Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.28	Very limited Depth to water	1.00
969E2: Casco-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage	0.31	Very limited Depth to water	1.00
Rodman-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage	0.63	Very limited Depth to water	1.00
1082A: Millington-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.76	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
1100A: Palms-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Somewhat limited Cutbanks cave	0.10
1103A: Houghton-----	Very limited Seepage	1.00	Not rated Organic matter content Ponding Depth to saturated zone	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
1776A: Comfrey, frequently flooded-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.13	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
Comfrey, occasionally flooded-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.13	Somewhat limited Slow refill Cutbanks cave	0.28 0.10

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1777A: Adrian-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Cutbanks cave	1.00
3082A: Millington-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.67	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
3107A: Sawmill-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.02	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
3415A: Orion-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 1.00	Very limited Cutbanks cave Slow refill	1.00 0.28
3776A: Comfrey-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.13	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
3800A: Psamments-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
8082A: Millington-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.81	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8776A: Comfrey-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.13	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8782A: Juneau-----	Somewhat limited Seepage	0.72	Very limited Piping	1.00	Somewhat limited Depth to saturated zone Slow refill Cutbanks cave	0.99 0.28 0.10

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9061A: Atterberry-----	Somewhat limited Seepage	0.72	Very limited		Somewhat limited Slow refill Cutbanks cave	0.28 0.10
Depth to saturated zone			1.00			
Piping			0.03			
9068A: Sable-----	Somewhat limited Seepage	0.72	Very limited		Somewhat limited Slow refill Cutbanks cave	0.28 0.10
Depth to saturated zone			1.00			
Ponding			1.00			
9278A: Stronghurst-----	Somewhat limited Seepage	0.72	Very limited		Somewhat limited Slow refill Cutbanks cave	0.28 0.10
Depth to saturated zone			1.00			

Table 20b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Not limited	
21C2: Pecatonica-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	Not limited	
22B: Westville-----	Somewhat limited Slope	0.26	Somewhat limited Water erosion Slope	0.88 0.26	Not limited	
22C2: Westville-----	Somewhat limited Slope	0.99	Somewhat limited Slope Water erosion	0.99 0.88	Not limited	
22D2: Westville-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Somewhat limited Slope	0.96
51A: Muscatune-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
59A: Lisbon-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Dense layer	1.00 0.50
61A: Atterberry-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
62A: Herbert-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Dense layer	1.00 0.50

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A: Sable-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	 1.00 1.00
68A+: Sable-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	 1.00 1.00
86A: Osco-----	Not limited		Very limited Water erosion	 1.00	Somewhat limited Depth to saturated zone	 0.13
86B: Osco-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	 1.00 0.26	Somewhat limited Depth to saturated zone	 0.13
87A: Dickinson-----	Somewhat limited Slope	0.01	Very limited Too sandy Water erosion Slope	 1.00 0.12 0.01	Very limited Cutbanks cave	 1.00
100A: Palms-----	Not limited		Very limited Ponding Depth to saturated zone	 1.00 1.00	Very limited Ponding Depth to saturated zone	 1.00 1.00
102A: La Hogue-----	Not limited		Very limited Depth to saturated zone Water erosion	 1.00 0.88	Very limited Depth to saturated zone Cutbanks cave	 1.00 1.00
103A: Houghton-----	Not limited		Very limited Ponding Depth to saturated zone	 1.00 1.00	Very limited Ponding Depth to saturated zone Excess organic matter	 1.00 1.00 1.00
104A: Virgil-----	Not limited		Very limited Water erosion Depth to saturated zone	 1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	 1.00 1.00

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
119B: Elco-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Somewhat limited Depth to saturated zone	0.99
125A: Selma-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.88	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
134A: Camden-----	Somewhat limited Slope	0.01	Very limited Water erosion Slope	1.00 0.01	Very limited Cutbanks cave	1.00
146A: Elliott-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Dense layer	1.00 0.50
148A: Proctor-----	Not limited		Very limited Water erosion	1.00	Very limited Cutbanks cave	1.00
148B: Proctor-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Very limited Cutbanks cave	1.00
149A: Brenton-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00
152A: Drummer-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
152A+: Drummer-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
153A: Pella-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
172A: Hoopeston-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.12	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00
188A: Beardstown-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00
197A: Troxel-----	Not limited		Somewhat limited Water erosion	0.88	Not limited	
198A: Elburn-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00
199A: Plano-----	Not limited		Very limited Water erosion	1.00	Very limited Cutbanks cave	1.00
199B: Plano-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Very limited Cutbanks cave	1.00
199C2: Plano-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	Very limited Cutbanks cave	1.00
206A: Thorp-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
219A: Millbrook-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00
221B: Parr-----	Somewhat limited Slope	0.26	Very limited Depth to saturated zone Water erosion Slope	1.00 0.88 0.26	Somewhat limited Depth to saturated zone Dense layer	0.99 0.50

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
221C2: Parr-----	Somewhat limited Slope	0.99	Very limited Depth to saturated zone Slope Water erosion	1.00 0.99 0.88	Somewhat limited Depth to saturated zone Dense layer	0.99 0.50
223B: Varna-----	Somewhat limited Slope	0.16	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.16	Somewhat limited Depth to saturated zone Dense layer Too clayey	0.99 0.50 0.03
227B: Argyle-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Very limited Cutbanks cave	1.00
242A: Kendall-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
243A: St. Charles-----	Not limited		Very limited Water erosion	1.00	Not limited	
243B: St. Charles-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Not limited	
243C2: St. Charles-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	Not limited	
278A: Stronghurst-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
279A: Rozetta-----	Not limited		Very limited Water erosion	1.00	Somewhat limited Depth to saturated zone	0.13
280B: Fayette-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Not limited	
280C2: Fayette-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	Not limited	

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290A: Warsaw-----	Somewhat limited Slope	0.01	Somewhat limited Water erosion Slope	0.88 0.01	Very limited Cutbanks cave	1.00
290B: Warsaw-----	Somewhat limited Slope	0.16	Somewhat limited Water erosion Slope	0.88 0.16	Very limited Cutbanks cave	1.00
290C2: Warsaw-----	Somewhat limited Slope	0.63	Somewhat limited Water erosion Slope	0.88 0.63	Very limited Cutbanks cave	1.00
290D2: Warsaw-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Very limited Cutbanks cave Slope	1.00 0.04
293A: Andres-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.88	Very limited Depth to saturated zone	1.00
297B: Ringwood-----	Somewhat limited Slope	0.16	Somewhat limited Water erosion Slope	0.88 0.16	Not limited	
297C2: Ringwood-----	Somewhat limited Slope	0.63	Somewhat limited Water erosion Slope	0.88 0.63	Not limited	
297D2: Ringwood-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Somewhat limited Slope	0.04
310B: McHenry-----	Somewhat limited Slope	0.16	Very limited Water erosion Slope	1.00 0.16	Very limited Cutbanks cave	1.00
310C2: McHenry-----	Somewhat limited Slope	0.63	Somewhat limited Water erosion Slope	0.88 0.63	Not limited	
310D2: McHenry-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Very limited Cutbanks cave Slope	1.00 0.04
325B: Dresden-----	Somewhat limited Slope	0.16	Very limited Too sandy Water erosion Slope	1.00 0.88 0.16	Very limited Cutbanks cave	1.00

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
325C2: Dresden-----	Somewhat limited Slope Content of large stones	0.63 0.01	Very limited Too sandy Water erosion Slope Content of large stones	1.00 0.88 0.63 0.01	Very limited Cutbanks cave	1.00
327B: Fox-----	Somewhat limited Slope	0.16	Very limited Too sandy Water erosion Slope	1.00 0.88 0.16	Very limited Cutbanks cave	1.00
327C2: Fox-----	Somewhat limited Slope	0.63	Very limited Too sandy Water erosion Slope	1.00 0.88 0.63	Very limited Cutbanks cave	1.00
327D2: Fox-----	Very limited Slope	1.00	Very limited Too sandy Slope Water erosion	1.00 1.00 0.88	Very limited Cutbanks cave Slope	1.00 0.04
329A: Will-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy Water erosion	1.00 1.00 1.00 0.88	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
332A: Billett-----	Somewhat limited Slope	0.01	Somewhat limited Water erosion Slope	0.12 0.01	Very limited Cutbanks cave	1.00
332B: Billett-----	Somewhat limited Slope	0.26	Somewhat limited Slope Water erosion	0.26 0.12	Very limited Cutbanks cave	1.00
343A: Kane-----	Not limited		Very limited Depth to saturated zone Too sandy Water erosion	1.00 1.00 0.88	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00
344A: Harvard-----	Somewhat limited Slope	0.01	Very limited Water erosion Slope	1.00 0.01	Very limited Cutbanks cave	1.00
344B: Harvard-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Very limited Cutbanks cave	1.00

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
354A: Hononegah-----	Somewhat limited Content of large stones Slope	0.04 0.01	Somewhat limited Content of large stones Slope	0.04 0.01	Very limited Cutbanks cave	1.00
354B: Hononegah-----	Somewhat limited Slope Content of large stones	0.37 0.05	Somewhat limited Slope Content of large stones	0.37 0.05	Very limited Cutbanks cave	1.00
361B: Kidder-----	Somewhat limited Slope	0.16	Somewhat limited Water erosion Slope	0.88 0.16	Not limited	
361C2: Kidder-----	Somewhat limited Slope	0.63	Somewhat limited Water erosion Slope	0.88 0.63	Not limited	
361D2: Kidder-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Somewhat limited Slope	0.04
361D3: Kidder-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Somewhat limited Slope	0.04
361E2: Kidder-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Very limited Slope	1.00
363C2: Griswold-----	Somewhat limited Slope	0.84	Somewhat limited Water erosion Slope	0.88 0.84	Very limited Cutbanks cave	1.00
363D2: Griswold-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Very limited Cutbanks cave Slope	1.00 0.04
369A: Waupecan-----	Somewhat limited Slope	0.01	Very limited Water erosion Slope	1.00 0.01	Very limited Cutbanks cave	1.00
379A: Dakota-----	Somewhat limited Slope	0.01	Very limited Too sandy Water erosion Slope	1.00 0.88 0.01	Very limited Cutbanks cave	1.00
387A: Ockley-----	Not limited		Somewhat limited Water erosion	0.88	Very limited Cutbanks cave	1.00

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
387B: Ockley-----	Somewhat limited Slope	0.26	Somewhat limited Water erosion Slope	0.88 0.26	Very limited Cutbanks cave	1.00
403E: Elizabeth-----	Very limited Depth to hard bedrock Slope Content of large stones	1.00 1.00 1.00	Very limited Slope Depth to hard bedrock Content of large stones Water erosion	1.00 1.00 1.00 0.12	Very limited Depth to hard bedrock Slope Content of large stones	1.00 1.00 0.62
412B: Ogle-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Not limited	
419A: Flagg-----	Somewhat limited Slope	0.01	Very limited Water erosion Slope	1.00 0.01	Not limited	
419B: Flagg-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Not limited	
419C2: Flagg-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	Not limited	
440A: Jasper-----	Somewhat limited Slope	0.01	Somewhat limited Water erosion Slope	0.88 0.01	Very limited Cutbanks cave	1.00
440B: Jasper-----	Somewhat limited Slope	0.26	Somewhat limited Water erosion Slope	0.88 0.26	Very limited Cutbanks cave	1.00
440C2: Jasper-----	Somewhat limited Slope	0.99	Somewhat limited Slope Water erosion	0.99 0.88	Very limited Cutbanks cave	1.00
490A: Odell-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.88	Very limited Depth to saturated zone	1.00
503B: Rockton-----	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Depth to hard bedrock Water erosion Slope	1.00 0.88 0.37	Very limited Depth to hard bedrock	1.00

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
505D2: Dunbarton-----	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Water erosion	1.00 1.00 0.88	Very limited Depth to hard bedrock Slope	1.00 0.04
505E2: Dunbarton-----	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Slope Depth to hard bedrock Water erosion	1.00 1.00 0.88	Very limited Depth to hard bedrock Slope	1.00 1.00
506B: Hitt-----	Somewhat limited Depth to hard bedrock Slope	0.84 0.26	Very limited Water erosion Depth to hard bedrock Slope	1.00 0.84 0.26	Very limited Too clayey Depth to hard bedrock	1.00 0.84
512A: Danabrook-----	Somewhat limited Slope	0.01	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.01	Somewhat limited Depth to saturated zone Dense layer	0.99 0.50
512B: Danabrook-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Somewhat limited Depth to saturated zone Dense layer	0.99 0.50
512C2: Danabrook-----	Somewhat limited Slope	0.99	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.99	Somewhat limited Depth to saturated zone Dense layer	0.99 0.50
523A: Dunham-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
526A: Grundelein-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
527B: Kidami-----	Somewhat limited Slope	0.16	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.16	Somewhat limited Depth to saturated zone Dense layer	0.99 0.50
527C2: Kidami-----	Somewhat limited Slope	0.63	Very limited Depth to saturated zone Water erosion Slope	1.00 0.88 0.63	Somewhat limited Depth to saturated zone Dense layer	0.99 0.50
527D2: Kidami-----	Very limited Slope	1.00	Very limited Depth to saturated zone Slope Water erosion	1.00 1.00 0.88	Somewhat limited Depth to saturated zone Dense layer Slope	0.99 0.50 0.04
528A: Lahoguess-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.88	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00
529A: Selmass-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.88	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
543B: Piscasaw-----	Somewhat limited Slope	0.16	Very limited Water erosion Slope	1.00 0.16	Not limited	
544A: Torox-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
545A: Windere-----	Somewhat limited Slope	0.01	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.01	Somewhat limited Depth to saturated zone	0.99
545B: Windere-----	Somewhat limited Slope	0.16	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.16	Somewhat limited Depth to saturated zone	0.99

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
561B:						
Whalan-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
	Slope	0.26	Water erosion Slope	0.88 0.26	Too clayey	0.28
NewGlarus-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Water erosion Depth to hard bedrock	1.00 1.00	Depth to hard bedrock	1.00
	Slope	0.26	Slope	0.26	Too clayey	1.00
561C2:						
Whalan-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
	Slope	0.99	Slope Water erosion	0.99 0.88	Too clayey	0.28
NewGlarus-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Water erosion Depth to hard bedrock	1.00 1.00	Depth to hard bedrock	1.00
	Slope	0.99	Slope	0.99	Too clayey	1.00
561D2:						
Whalan-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Slope Depth to hard bedrock	1.00 1.00	Depth to hard bedrock	1.00
	Slope	1.00	Water erosion	0.88	Slope Too clayey	0.74 0.28
NewGlarus-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Water erosion Slope	1.00 1.00	Depth to hard bedrock	1.00
	Slope	1.00	Depth to hard bedrock	1.00	Too clayey Slope	1.00 0.74
566B:						
Rockton-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
	Slope	0.26	Water erosion Slope	0.88 0.26	Too clayey	0.12
Dodgeville-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Water erosion Depth to hard bedrock	1.00 1.00	Depth to hard bedrock	1.00
	Slope	0.26	Slope	0.26	Too clayey	1.00
566C2:						
Rockton-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
	Slope	0.99	Slope Water erosion	0.99 0.88	Too clayey	0.12

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
566C2: Dodgeville-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Water erosion Depth to hard bedrock	1.00 1.00	Depth to hard bedrock	1.00
	Slope	0.99	Slope	0.99	Too clayey	1.00
566D2: Rockton-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Slope Depth to hard bedrock	1.00 1.00	Depth to hard bedrock	1.00
	Slope	1.00	Water erosion	0.88	Slope Too clayey	0.74 0.12
Dodgeville-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Water erosion Slope	1.00 1.00	Depth to hard bedrock	1.00
	Slope	1.00	Depth to hard bedrock	1.00	Too clayey Slope	1.00 0.74
570A: Martinsville-----	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.01	Water erosion Slope	0.88 0.01	Cutbanks cave	1.00
570B: Martinsville-----	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Water erosion Slope	1.00 0.16	Cutbanks cave	1.00
570C2: Martinsville-----	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Water erosion Slope	0.88 0.63	Cutbanks cave	1.00
570D2: Martinsville-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope Water erosion	1.00 0.88	Cutbanks cave Slope	1.00 0.04
618B: Senachwine-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.26	Water erosion Slope	0.88 0.26	Dense layer	0.50
623A: Kishwaukee-----	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.01	Water erosion Slope	0.88 0.01	Cutbanks cave	1.00
623B: Kishwaukee-----	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Water erosion Slope	0.88 0.26	Cutbanks cave	1.00
624B: Caprell-----	Somewhat limited		Somewhat limited		Not limited	
	Slope	0.16	Water erosion Slope	0.88 0.16		

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624C2: Caprell-----	Somewhat limited Slope	0.84	Somewhat limited Water erosion Slope	0.88 0.84	Not limited	
624D2: Caprell-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Somewhat limited Slope	0.04
624E: Caprell-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Very limited Slope	1.00
625B: Geryune-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Somewhat limited Depth to saturated zone	0.99
626A: Kish-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.88	Very limited Ponding Depth to saturated zone	1.00 1.00
635A: Lismod-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
635B: Lismod-----	Somewhat limited Slope	0.16	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.16	Very limited Depth to saturated zone	1.00
636B: Parmod-----	Somewhat limited Slope	0.26	Somewhat limited Water erosion Slope	0.88 0.26	Not limited	
636C2: Parmod-----	Somewhat limited Slope	0.99	Somewhat limited Slope Water erosion	0.99 0.88	Not limited	
667C2: Kaneville-----	Somewhat limited Slope	0.99	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.99	Very limited Cutbanks cave Depth to saturated zone	1.00 0.99

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
675A: Greenbush-----	Not limited		Very limited Water erosion	1.00	Somewhat limited Depth to saturated zone	0.13
675B: Greenbush-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Somewhat limited Depth to saturated zone	0.13
728B: Winnebago-----	Somewhat limited Slope	0.26	Somewhat limited Water erosion Slope	0.50 0.26	Not limited	
728C2: Winnebago-----	Somewhat limited Slope	0.99	Somewhat limited Slope Water erosion	0.99 0.50	Not limited	
766A: Lamartine-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
768C: Backbone-----	Very limited Depth to hard bedrock Slope	1.00 0.99	Very limited Depth to hard bedrock Slope Water erosion	1.00 0.99 0.12	Very limited Depth to hard bedrock	1.00
771A: Hayfield-----	Not limited		Very limited Water erosion Depth to saturated zone Too sandy	1.00 1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00
772A: Marshan-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy Water erosion	1.00 1.00 1.00 0.88	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
777A: Adrian-----	Not limited		Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
779B: Chelsea-----	Somewhat limited Slope	0.26	Very limited Too sandy Slope	1.00 0.26	Very limited Cutbanks cave	1.00

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
779D: Chelsea-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Cutbanks cave Slope	1.00 0.04
780B: Grellton-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Not limited	
780C2: Grellton-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	Not limited	
781A: Friesland-----	Somewhat limited Slope	0.01	Somewhat limited Water erosion Slope	0.88 0.01	Not limited	
781B: Friesland-----	Somewhat limited Slope	0.26	Somewhat limited Water erosion Slope	0.88 0.26	Not limited	
782A: Juneau-----	Not limited		Very limited Water erosion	1.00	Somewhat limited Depth to saturated zone	0.22
783A: Flagler-----	Somewhat limited Slope	0.01	Very limited Too sandy Water erosion Slope	1.00 0.12 0.01	Very limited Cutbanks cave	1.00
783B: Flagler-----	Somewhat limited Slope	0.37	Very limited Too sandy Slope Water erosion	1.00 0.37 0.12	Very limited Cutbanks cave	1.00
791A: Rush-----	Somewhat limited Slope	0.01	Very limited Water erosion Slope	1.00 0.01	Very limited Cutbanks cave	1.00
802B: Orthents, loamy----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Somewhat limited Depth to saturated zone	0.45
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
939C2:						
Rodman-----	Somewhat limited Slope	0.63	Somewhat limited Slope Water erosion	0.63 0.12	Very limited Cutbanks cave	1.00
Warsaw-----	Somewhat limited Slope	0.63	Somewhat limited Water erosion Slope	0.88 0.63	Very limited Cutbanks cave	1.00
939D2:						
Rodman-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.12	Very limited Cutbanks cave Slope	1.00 0.04
Warsaw-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	Very limited Cutbanks cave Slope	1.00 0.04
969E2:						
Casco-----	Very limited Slope Content of large stones	1.00 0.10	Very limited Slope Too sandy Water erosion Content of large stones	1.00 1.00 0.88 0.10	Very limited Cutbanks cave Slope	1.00 1.00
Rodman-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.12	Very limited Cutbanks cave Slope	1.00 1.00
1082A:						
Millington-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.88	Very limited Ponding Depth to saturated zone Occasional flooding	1.00 1.00 0.60
1100A:						
Palms-----	Not limited		Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Excess organic matter Frequent flooding	1.00 1.00 1.00 0.80
1103A:						
Houghton-----	Not limited		Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Excess organic matter Frequent flooding	1.00 1.00 1.00 0.80

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1776A: Comfrey, frequently flooded-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	 1.00 1.00  0.88	Very limited Ponding Depth to saturated zone Frequent flooding	 1.00 1.00  0.80
Comfrey, occasionally flooded-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	 1.00 1.00  0.88	Very limited Ponding Depth to saturated zone Occasional flooding	 1.00 1.00  0.60
1777A: Adrian-----	Not limited		Very limited Ponding Depth to saturated zone	 1.00 1.00  	Very limited Ponding Depth to saturated zone Cutbanks cave Excess organic matter Frequent flooding	 1.00 1.00  1.00 1.00 0.80
3082A: Millington-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	 1.00 1.00  0.88	Very limited Ponding Depth to saturated zone Frequent flooding	 1.00 1.00  0.80
3107A: Sawmill-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	 1.00 1.00  0.50	Very limited Ponding Depth to saturated zone Frequent flooding	 1.00 1.00  0.80
3415A: Orion-----	Not limited		Very limited Water erosion Depth to saturated zone	 1.00 1.00  	Very limited Depth to saturated zone Cutbanks cave Frequent flooding	 1.00  1.00 0.80
3776A: Comfrey-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	 1.00 1.00  0.88	Very limited Ponding Depth to saturated zone Frequent flooding	 1.00 1.00  0.80
3800A: Psamments-----	Not limited		Very limited Too sandy	 1.00  	Very limited Cutbanks cave Frequent flooding Depth to saturated zone	 1.00 0.80  0.13

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8082A: Millington-----	Not limited		Very limited		Very limited	
Ponding			1.00	Ponding	1.00	
Depth to saturated zone			1.00	Depth to saturated zone	1.00	
Water erosion			0.88	Occasional flooding	0.60	
8776A: Comfrey-----	Not limited		Very limited		Very limited	
Ponding			1.00	Ponding	1.00	
Depth to saturated zone			1.00	Depth to saturated zone	1.00	
Water erosion			0.88	Occasional flooding	0.60	
8782A: Juneau-----	Not limited		Very limited		Somewhat limited	
Water erosion			1.00	Occasional flooding	0.60	
				Depth to saturated zone	0.22	
9061A: Atterberry-----	Not limited		Very limited		Very limited	
Water erosion			1.00	Depth to	1.00	
Depth to saturated zone			1.00	saturated zone		
9068A: Sable-----	Not limited		Very limited		Very limited	
Water erosion			1.00	Ponding	1.00	
Ponding			1.00	Depth to	1.00	
Depth to saturated zone			1.00	saturated zone		
9278A: Stronghurst-----	Not limited		Very limited		Very limited	
Water erosion			1.00	Depth to	1.00	
Depth to saturated zone			1.00	saturated zone		

Table 20c.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited		Very limited		Not limited	
	Too acid	0.08	Water erosion	1.00		
	Slope	0.02				
21C2: Pecatonica-----	Somewhat limited		Very limited		Not limited	
	Slope	0.98	Water erosion	1.00		
	Too acid	0.04	Slope	0.06		
22B: Westville-----	Somewhat limited		Very limited		Not limited	
	Too acid	0.44	Water erosion	1.00		
	Slope	0.02				
22C2: Westville-----	Somewhat limited		Very limited		Not limited	
	Slope	0.98	Water erosion	1.00		
	Too acid	0.44	Slope	0.06		
22D2: Westville-----	Very limited		Very limited		Not limited	
	Slope	1.00	Water erosion	1.00		
	Too acid	0.44	Slope	0.98		
51A: Muscatune-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too acid	0.04				
59A: Lisbon-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Percs slowly	0.31				
61A: Atterberry-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
62A: Herbert-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Percs slowly	0.31				
68A: Sable-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A+:						
Sable-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
86A:						
Osc-----	Not limited		Not limited		Not limited	
86B:						
Osc-----	Somewhat limited Slope	0.02	Not limited		Not limited	
87A:						
Dickinson-----	Somewhat limited Too acid	0.68	Somewhat limited Droughty	0.60	Not limited	
100A:						
Palms-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
102A:						
La Hogue-----	Very limited Depth to saturated zone Too acid	1.00 0.04	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
103A:						
Houghton-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
104A:						
Virgil-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
119B:						
Elco-----	Somewhat limited Depth to saturated zone Percs slowly Slope	0.68 0.61 0.02	Very limited Water erosion	1.00	Not limited	
125A:						
Selma-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
134A:						
Camden-----	Not limited		Not limited		Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
146A: Elliott-----	Very limited Depth to saturated zone Percs slowly Too acid	1.00 1.00 0.44	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
148A: Proctor-----	Not limited		Not limited		Not limited	
148B: Proctor-----	Somewhat limited Slope	0.02	Not limited		Not limited	
149A: Brenton-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
152A: Drummer-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
152A+: Drummer-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
153A: Pella-----	Very limited Ponding Depth to saturated zone Too acid	1.00 1.00 0.04	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
172A: Hoopeston-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Droughty	1.00 0.03	Very limited Depth to saturated zone	1.00
188A: Beardstown-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
197A: Troxel-----	Somewhat limited Too acid	0.08	Not limited		Not limited	
198A: Elburn-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
199A: Plano-----	Not limited		Not limited		Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
199B: Plano-----	Somewhat limited Slope	0.02	Not limited		Not limited	
199C2: Plano-----	Somewhat limited Slope	0.98	Very limited Water erosion Slope	1.00 0.06	Not limited	
206A: Thorp-----	Very limited Ponding Depth to saturated zone Percs slowly	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
219A: Millbrook-----	Very limited Depth to saturated zone Too acid	1.00 0.68	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
221B: Parr-----	Somewhat limited Depth to saturated zone Percs slowly Slope	0.68 0.31 0.02	Not limited		Not limited	
221C2: Parr-----	Somewhat limited Slope Depth to saturated zone Percs slowly	0.98 0.68 0.31	Somewhat limited Slope	0.06	Not limited	
223B: Varna-----	Very limited Percs slowly Depth to saturated zone	1.00 0.68	Not limited		Not limited	
227B: Argyle-----	Somewhat limited Too acid Slope	0.44 0.02	Very limited Water erosion	1.00	Not limited	
242A: Kendall-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
243A: St. Charles-----	Not limited		Not limited		Not limited	
243B: St. Charles-----	Somewhat limited Slope	0.02	Very limited Water erosion	1.00	Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
243C2: St. Charles-----	Somewhat limited Slope	0.98	Very limited Water erosion Slope	1.00 0.06	Not limited	
278A: Stronghurst-----	Very limited Depth to saturated zone Too acid	1.00 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
279A: Rozetta-----	Somewhat limited Too acid	0.08	Not limited		Not limited	
280B: Fayette-----	Somewhat limited Too acid Slope	0.08 0.02	Very limited Water erosion	1.00	Not limited	
280C2: Fayette-----	Somewhat limited Slope	0.98	Very limited Water erosion Slope	1.00 0.06	Not limited	
290A: Warsaw-----	Not limited		Not limited		Not limited	
290B: Warsaw-----	Somewhat limited Too acid	0.01	Not limited		Not limited	
290C2: Warsaw-----	Somewhat limited Slope Too acid	0.32 0.01	Somewhat limited Droughty	0.01	Not limited	
290D2: Warsaw-----	Very limited Slope Too acid	1.00 0.01	Somewhat limited Slope Droughty	0.22 0.07	Not limited	
293A: Andres-----	Very limited Depth to saturated zone Percs slowly	1.00 1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
297B: Ringwood-----	Not limited		Not limited		Not limited	
297C2: Ringwood-----	Somewhat limited Slope	0.32	Not limited		Not limited	
297D2: Ringwood-----	Very limited Slope	1.00	Somewhat limited Slope	0.22	Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
310B: McHenry-----	Not limited		Very limited Water erosion	1.00	Not limited	
310C2: McHenry-----	Somewhat limited Slope	0.32	Very limited Water erosion	1.00	Not limited	
310D2: McHenry-----	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 0.22	Not limited	
325B: Dresden-----	Somewhat limited Too acid	0.01	Not limited		Not limited	
325C2: Dresden-----	Somewhat limited Slope Too acid	0.32 0.01	Somewhat limited Droughty	0.01	Not limited	
327B: Fox-----	Somewhat limited Too acid	0.01	Very limited Water erosion Droughty	1.00 0.04	Not limited	
327C2: Fox-----	Somewhat limited Slope	0.32	Very limited Water erosion	1.00	Not limited	
327D2: Fox-----	Very limited Slope	1.00	Very limited Water erosion Droughty Slope	1.00 0.35 0.22	Not limited	
329A: Will-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Droughty	1.00 1.00 0.15	Very limited Ponding Depth to saturated zone	1.00 1.00
332A: Billett-----	Somewhat limited Too acid	0.22	Somewhat limited Droughty	0.55	Not limited	
332B: Billett-----	Somewhat limited Too acid Slope	0.22 0.02	Somewhat limited Droughty	0.59	Not limited	
343A: Kane-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Droughty	1.00 0.01	Very limited Depth to saturated zone	1.00
344A: Harvard-----	Not limited		Not limited		Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
344B: Harvard-----	Somewhat limited Slope	0.02	Very limited Water erosion	1.00	Not limited	
354A: Hononegah-----	Very limited Droughty	1.00	Very limited Sandy textures Wind erosion Droughty	1.00 1.00 1.00	Not limited	
354B: Hononegah-----	Very limited Droughty Slope	1.00 0.08	Very limited Sandy textures Wind erosion Droughty	1.00 1.00 1.00	Not limited	
361B: Kidder-----	Not limited		Very limited Water erosion	1.00	Not limited	
361C2: Kidder-----	Somewhat limited Slope	0.32	Very limited Water erosion	1.00	Not limited	
361D2: Kidder-----	Very limited Slope	1.00	Very limited Water erosion Slope Droughty	1.00 0.22 0.01	Not limited	
361D3: Kidder-----	Very limited Slope	1.00	Very limited Water erosion Slope Droughty	1.00 0.22 0.10	Not limited	
361E2: Kidder-----	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 1.00	Not limited	
363C2: Griswold-----	Somewhat limited Slope	0.68	Not limited		Not limited	
363D2: Griswold-----	Very limited Slope	1.00	Somewhat limited Slope	0.22	Not limited	
369A: Waupecan-----	Not limited		Not limited		Not limited	
379A: Dakota-----	Somewhat limited Too acid	0.01	Not limited		Not limited	
387A: Ockley-----	Somewhat limited Too acid	0.14	Not limited		Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
387B: Ockley-----	Somewhat limited Too acid Slope	 0.14 0.02	Very limited Water erosion	 1.00	Not limited	
403E: Elizabeth-----	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 1.00	Very limited Depth to bedrock Droughty Slope Content of large stones	 1.00 1.00 1.00 0.50	Very limited Depth to bedrock	 1.00
412B: Ogle-----	Somewhat limited Too acid Slope	 0.04 0.02	Not limited		Not limited	
419A: Flagg-----	Somewhat limited Too acid	 0.32	Not limited		Not limited	
419B: Flagg-----	Somewhat limited Too acid Slope	 0.32 0.02	Very limited Water erosion	 1.00	Not limited	
419C2: Flagg-----	Somewhat limited Slope Too acid	 0.98 0.32	Very limited Water erosion Slope	 1.00 0.06	Not limited	
440A: Jasper-----	Not limited		Not limited		Not limited	
440B: Jasper-----	Somewhat limited Slope	 0.02	Not limited		Not limited	
440C2: Jasper-----	Somewhat limited Slope	 0.98	Somewhat limited Slope	 0.06	Not limited	
490A: Odell-----	Very limited Depth to saturated zone Percs slowly	 1.00 0.31	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00
503B: Rockton-----	Somewhat limited Percs slowly Depth to bedrock Slope	 0.61 0.10 0.08	Somewhat limited Depth to bedrock	 0.84	Not limited	
505D2: Dunbarton-----	Very limited Depth to bedrock Slope Droughty Percs slowly	 1.00 1.00 0.98 0.32	Very limited Depth to bedrock Droughty Water erosion Slope	 1.00 1.00 1.00 0.22	Very limited Depth to bedrock	 1.00

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
505E2: Dunbarton-----	Very limited Depth to bedrock Droughty Slope Percs slowly	 1.00 1.00 1.00 0.32	Very limited Depth to bedrock Droughty Water erosion Slope	 1.00 1.00 1.00 1.00	Very limited Depth to bedrock	 1.00
506B: Hitt-----	Very limited Percs slowly Too acid Slope	 1.00 0.14 0.02	Somewhat limited Depth to bedrock	 0.10	Not limited	
512A: Danabrook-----	Somewhat limited Depth to saturated zone Percs slowly	 0.68 0.31	Not limited		Not limited	
512B: Danabrook-----	Somewhat limited Depth to saturated zone Percs slowly Slope	 0.68 0.31 0.02	Not limited		Not limited	
512C2: Danabrook-----	Somewhat limited Slope Depth to saturated zone Percs slowly	 0.98 0.68 0.31	Very limited Water erosion Slope	 1.00 0.06	Not limited	
523A: Dunham-----	Very limited Ponding Depth to saturated zone	 1.00 1.00	Very limited Ponding Depth to saturated zone	 1.00 1.00	Very limited Ponding Depth to saturated zone	 1.00 1.00
526A: Grundelein-----	Very limited Depth to saturated zone Too acid	 1.00 0.01	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00
527B: Kidami-----	Somewhat limited Depth to saturated zone Percs slowly	 0.68 0.31	Very limited Water erosion	 1.00	Not limited	
527C2: Kidami-----	Somewhat limited Depth to saturated zone Slope Percs slowly Too acid	 0.68 0.32 0.31 0.08	Very limited Water erosion	 1.00	Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
527D2: Kidami-----	Very limited Slope Depth to saturated zone Percs slowly Too acid	 1.00 0.68  0.31 0.08	Very limited Water erosion Slope	 1.00 0.22	Not limited	
528A: Lahoguess-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
529A: Selmass-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
543B: Piscasaw-----	Not limited		Very limited Water erosion	1.00	Not limited	
544A: Torox-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
545A: Windere-----	Somewhat limited Depth to saturated zone	0.68	Not limited		Not limited	
545B: Windere-----	Somewhat limited Depth to saturated zone	0.68	Very limited Water erosion	1.00	Not limited	
561B: Whalan-----	Somewhat limited Percs slowly Slope Depth to bedrock	0.61 0.02 0.01	Very limited Water erosion Depth to bedrock	1.00 0.61	Not limited	
NewGlarus-----	Very limited Percs slowly Depth to bedrock Slope	1.00 0.03 0.02	Very limited Water erosion Depth to bedrock	1.00 0.71	Not limited	
561C2: Whalan-----	Somewhat limited Slope Percs slowly Depth to bedrock	0.98 0.61 0.06	Very limited Water erosion Depth to bedrock Slope	1.00 0.80 0.06	Not limited	
NewGlarus-----	Very limited Percs slowly Slope Depth to bedrock	1.00 0.98 0.06	Very limited Water erosion Depth to bedrock Slope	1.00 0.80 0.06	Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
561D2:						
Whalan-----	Very limited		Very limited		Not limited	
	Slope	1.00	Depth to bedrock	1.00		
	Depth to bedrock	0.71	Water erosion	1.00		
	Percs slowly	0.61	Slope	0.85		
	Droughty	0.14	Droughty	0.28		
NewGlarus-----	Very limited		Very limited		Not limited	
	Slope	1.00	Water erosion	1.00		
	Percs slowly	1.00	Depth to bedrock	0.99		
	Depth to bedrock	0.46	Slope	0.85		
	Droughty	0.05	Droughty	0.10		
566B:						
Rockton-----	Somewhat limited		Very limited		Not limited	
	Depth to bedrock	0.84	Depth to bedrock	1.00		
	Percs slowly	0.61	Droughty	0.70		
	Droughty	0.38				
	Slope	0.02				
Dodgeville-----	Very limited		Somewhat limited		Not limited	
	Percs slowly	1.00	Depth to bedrock	0.80		
	Depth to bedrock	0.06	Droughty	0.01		
	Slope	0.02				
	Droughty	0.01				
566C2:						
Rockton-----	Somewhat limited		Very limited		Not limited	
	Slope	0.98	Depth to bedrock	1.00		
	Depth to bedrock	0.90	Droughty	0.85		
	Percs slowly	0.61	Slope	0.06		
	Droughty	0.54				
Dodgeville-----	Very limited		Very limited		Not limited	
	Percs slowly	1.00	Water erosion	1.00		
	Slope	0.98	Depth to bedrock	0.99		
	Depth to bedrock	0.35	Droughty	0.10		
	Droughty	0.05	Slope	0.06		
566D2:						
Rockton-----	Very limited		Very limited		Not limited	
	Slope	1.00	Depth to bedrock	1.00		
	Depth to bedrock	0.97	Droughty	0.98		
	Droughty	0.74	Slope	0.85		
	Percs slowly	0.61				
Dodgeville-----	Very limited		Very limited		Not limited	
	Slope	1.00	Depth to bedrock	1.00		
	Percs slowly	1.00	Water erosion	1.00		
	Depth to bedrock	0.90	Droughty	1.00		
	Droughty	0.89	Slope	0.85		
570A:						
Martinsville-----	Not limited		Not limited		Not limited	
570B:						
Martinsville-----	Somewhat limited		Very limited		Not limited	
	Too acid	0.08	Water erosion	1.00		

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
570C2: Martinsville-----	Somewhat limited Slope	0.32	Very limited Water erosion	1.00	Not limited	
570D2: Martinsville-----	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 0.22	Not limited	
618B: Senachwine-----	Somewhat limited Percs slowly Slope	0.31 0.02	Very limited Water erosion	1.00	Not limited	
623A: Kishwaukee-----	Not limited		Not limited		Not limited	
623B: Kishwaukee-----	Somewhat limited Slope	0.02	Not limited		Not limited	
624B: Caprell-----	Somewhat limited Too acid	0.08	Very limited Water erosion	1.00	Not limited	
624C2: Caprell-----	Somewhat limited Slope Too acid	0.68 0.08	Very limited Water erosion	1.00	Not limited	
624D2: Caprell-----	Very limited Slope Too acid	1.00 0.08	Very limited Water erosion Slope	1.00 0.22	Not limited	
624E: Caprell-----	Very limited Slope Too acid	1.00 0.08	Very limited Water erosion Slope	1.00 1.00	Not limited	
625B: Geryune-----	Somewhat limited Depth to saturated zone Too acid Slope	0.68 0.44 0.02	Not limited		Not limited	
626A: Kish-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
635A: Lismod-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
635B: Lismod-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
636B: Parmod-----	Somewhat limited Slope	0.02	Not limited		Not limited	
636C2: Parmod-----	Somewhat limited Slope Too acid	0.98 0.08	Somewhat limited Slope	0.06	Not limited	
667C2: Kaneville-----	Somewhat limited Slope Depth to saturated zone	0.98 0.68	Very limited Water erosion Slope	1.00 0.06	Not limited	
675A: Greenbush-----	Somewhat limited Too acid	0.08	Not limited		Not limited	
675B: Greenbush-----	Somewhat limited Too acid Slope	0.08 0.02	Very limited Water erosion	1.00	Not limited	
728B: Winnebago-----	Somewhat limited Too acid Slope	0.44 0.02	Not limited		Not limited	
728C2: Winnebago-----	Somewhat limited Slope Too acid	0.98 0.44	Somewhat limited Slope	0.06	Not limited	
766A: Lamartine-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
768C: Backbone-----	Somewhat limited Droughty Slope Depth to bedrock Percs slowly	0.99 0.98 0.84 0.31	Very limited Sandy textures Depth to bedrock Wind erosion Droughty Slope	1.00 1.00 1.00 1.00 0.06	Not limited	
771A: Hayfield-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Droughty	1.00 0.01	Very limited Depth to saturated zone	1.00

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
772A: Marshan-----	Very limited Ponding Depth to saturated zone	 1.00 1.00	Very limited Ponding Depth to saturated zone Droughty	 1.00 1.00 0.04	Very limited Ponding Depth to saturated zone	 1.00 1.00
777A: Adrian-----	Very limited Ponding Depth to saturated zone	 1.00 1.00	Very limited Ponding Depth to saturated zone	 1.00 1.00	Very limited Ponding Depth to saturated zone	 1.00 1.00
779B: Chelsea-----	Somewhat limited Too acid Slope	 0.92 0.02	Very limited Wind erosion Droughty	 1.00 0.99	Not limited	
779D: Chelsea-----	Very limited Slope Too acid	 1.00 0.92	Very limited Wind erosion Droughty Slope	 1.00 0.99 0.22	Not limited	
780B: Grellton-----	Somewhat limited Slope	 0.02	Not limited		Not limited	
780C2: Grellton-----	Somewhat limited Slope	 0.98	Somewhat limited Slope	 0.06	Not limited	
781A: Friesland-----	Somewhat limited Too acid	 0.14	Not limited		Not limited	
781B: Friesland-----	Somewhat limited Too acid Slope	 0.14 0.02	Not limited		Not limited	
782A: Juneau-----	Not limited		Not limited		Not limited	
783A: Flagler-----	Not limited		Somewhat limited Droughty	 0.79	Not limited	
783B: Flagler-----	Somewhat limited Slope Droughty	 0.08 0.07	Somewhat limited Droughty	 0.90	Not limited	
791A: Rush-----	Somewhat limited Too acid	 0.08	Not limited		Not limited	
802B: Orthents, loamy----	Somewhat limited Percs slowly Slope	 0.31 0.02	Very limited Water erosion	 1.00	Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
939C2: Rodman-----	Very limited Droughty Slope	1.00 0.32	Very limited Droughty	1.00	Not limited	
Warsaw-----	Somewhat limited Slope Too acid	0.32 0.01	Somewhat limited Droughty	0.01	Not limited	
939D2: Rodman-----	Very limited Droughty Slope	1.00 1.00	Very limited Droughty Slope	1.00 0.22	Not limited	
Warsaw-----	Very limited Slope Too acid	1.00 0.01	Somewhat limited Slope Droughty	0.22 0.07	Not limited	
969E2: Casco-----	Very limited Slope Droughty	1.00 0.66	Very limited Water erosion Slope Droughty	1.00 1.00 1.00	Not limited	
Rodman-----	Very limited Slope Droughty	1.00 1.00	Very limited Droughty Slope	1.00 1.00	Not limited	
1082A: Millington-----	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 0.60	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
1100A: Palms-----	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 0.80	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 1.00
1103A: Houghton-----	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 0.80	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 1.00

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1776A: Comfrey, frequently flooded-----	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  0.80	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00
Comfrey, occasionally flooded-----	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  0.60	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00
1777A: Adrian-----	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  0.80	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00
3082A: Millington-----	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  0.80	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00
3107A: Sawmill-----	Very limited Ponding Depth to saturated zone Flooding Too acid	 1.00 1.00  0.80 0.04	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00
3415A: Orion-----	Very limited Depth to saturated zone Flooding	 1.00  0.80	Very limited Depth to saturated zone Flooding	 1.00  1.00	Very limited Depth to saturated zone Flooding	 1.00  1.00
3776A: Comfrey-----	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  0.80	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00  1.00
3800A: Psamments-----	Somewhat limited Flooding Too acid Droughty	 0.80 0.32 0.03	Very limited Flooding Sandy textures Wind erosion Droughty	 1.00 1.00 1.00 1.00	Very limited Flooding	 1.00

Table 20c.--Water Management--Continued

Map symbol and soil name	Irrigation (all application methods)		Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8082A: Millington-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	0.60				
8776A: Comfrey-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	0.60				
8782A: Juneau-----	Somewhat limited		Not limited		Not limited	
	Flooding	0.60				
9061A: Atterberry-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
9068A: Sable-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
9278A: Stronghurst-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too acid	0.08				

Table 21.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
21B:												
Pecatonica-----	0-3	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	3-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	10-18	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	25-40	5-20
	18-26	Clay loam, sandy clay loam	SC, CL	A-7-6, A-6	0-2	0-5	90-100	80-100	70-95	40-80	37-46	19-25
	26-68	Sandy clay loam, gravelly sandy clay loam, clay loam, loam, sandy loam	SC, CL	A-7-6, A-2-6, A-6	0-2	0-5	85-100	65-100	50-95	30-80	29-46	12-25
	68-80	Loam, sandy loam, gravelly sandy loam	SC, CL	A-6, A-2-4, A-4	0-2	0-5	85-100	65-100	50-95	30-80	24-38	9-19
21C2:												
Pecatonica-----	0-7	Silt loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	95-100	25-40	5-17
	7-19	Silt loam, silty clay loam	CL	A-6	0	0	100	100	90-100	85-100	30-41	13-21
	19-60	Clay loam, sandy clay loam, loam	CL, SC	A-6, A-2-6,	0-1	0-5	90-100	80-100	45-95	30-80	35-46	17-25
22B:												
Westville-----	0-8	Silt loam	CL	A-6, A-4	0	0	100	100	90-100	75-100	24-35	8-15
	8-61	Clay loam, sandy clay loam	CL	A-6, A-7-6	0	0-4	90-100	80-100	67-96	40-80	35-47	17-27
	61-72	Sandy loam, loam, gravelly sandy loam	SC, CL, SC-SM	A-2-4, A-4, A-6	0-2	0-5	90-100	80-100	60-90	30-70	24-33	9-15
22C2:												
Westville-----	0-9	Silt loam	CL	A-6, A-4	0	0	100	100	90-100	75-100	24-35	8-15
	9-54	Clay loam, sandy clay loam	CL	A-6, A-7-6	0	0-4	90-100	80-100	67-96	40-80	35-47	17-27
	54-60	Sandy loam, loam, gravelly sandy loam	CL, SC, SC-SM	A-2-4, A-4, A-6	0-2	0-5	90-100	80-100	60-90	30-70	24-33	9-15

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
22D2:												
Westville-----	0-5	Silt loam	CL	A-6, A-4	0	0	100	100	90-100	75-100	24-35	8-15
	5-54	Clay loam, sandy clay loam	CL	A-6, A-7-6	0	0-4	90-100	80-100	67-96	40-80	35-47	17-27
	54-60	Sandy loam, loam, gravelly sandy loam	CL, SC, SC-SM	A-2-4, A-4, A-6	0-2	0-5	90-100	80-100	60-90	30-70	24-33	9-15
51A:												
Muscatune-----	0-16	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	4-14
	16-22	Silty clay loam, silt loam	ML, CL	A-6	0	0	100	100	97-100	95-100	35-40	14-20
	22-46	Silty clay loam	ML, CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	46-60	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0	100	100	96-100	93-100	24-37	7-18
59A:												
Lisbon-----	0-11	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	11-36	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	95-100	85-100	30-50	15-30
	36-39	Loam, clay loam	CL, ML	A-4, A-6, A-7-6	0	0-2	95-100	85-100	75-90	60-80	20-45	8-25
	39-70	Loam, sandy loam	CL, ML, SC	A-4, A-6	0	0-3	90-100	80-98	65-85	45-75	20-40	8-20
61A:												
Atterberry-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-16
	9-17	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	7-18
	17-48	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	95-100	95-100	37-46	16-25
	48-60	Silt loam	ML, CL	A-6, A-4	0	0	100	100	95-100	95-100	24-37	7-18
62A:												
Herbert-----	0-8	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	8-20
	8-12	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	25-35	8-20
	12-26	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	25-45	12-25
	26-36	Clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	75-90	60-80	25-40	8-20
	36-60	Loam, sandy loam loam	CL, CL-ML, ML, SC	A-4, A-6	0	0-2	95-100	80-98	65-85	45-75	20-40	5-20

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
68A:												
Sable-----	0-19	Silty clay loam	CH, CL	A-6, A-7-6	0	0	100	100	98-100	95-100	30-55	15-30
	19-23	Silty clay loam	CH, CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-60	15-35
	23-47	Silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-55	15-35
	47-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	98-100	95-100	25-40	10-20
68A+:												
Sable-----	0-13	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	30-45	10-20
	13-24	Silty clay loam	CH, CL, MH, ML	A-7-6	0	0	100	100	95-100	95-100	41-65	15-35
	24-50	Silty clay loam, silt loam	CL, CH	A-7-6	0	0	100	100	95-100	95-100	40-55	20-35
	50-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	95-100	30-40	10-20
86A:												
Osc-----	0-13	Silt loam	ML, CL	A-6, A-4	0	0	100	100	100	95-100	35-45	7-20
	13-38	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	40-50	15-25
	38-60	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0	100	100	100	95-100	35-45	7-25
86B:												
Osc-----	0-14	Silt loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	7-20
	14-55	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	40-50	15-25
	55-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	7-25
87A:												
Dickinson-----	0-18	Sandy loam	SC, SC-SM, SM	A-4	0	0	100	100	80-95	35-50	15-30	NP-10
	18-26	Fine sandy loam, sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	80-95	25-50	15-30	NP-10
	26-38	Loamy sand, loamy fine sand, sand	SC-SM, SM, SP-SM	A-2-4, A-3	0	0	100	95-100	70-95	10-25	0-20	NP-5
	38-60	Sand, loamy fine sand, loamy sand, fine sand	SM, SP-SM	A-2-4, A-3	0	0	98-100	92-100	65-90	5-20	0-15	NP

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
100A:												
Palms-----	0-6	Muck	PT	A-8	0	0	---	---	---	---	---	NP
	6-32	Muck	PT	A-8	0	0	---	---	---	---	---	NP
	32-60	Loam, silty clay loam, gravelly sandy loam	CL, CL-ML, ML, SC	A-4, A-6, A- 7-6	0	0	90-100	75-100	65-95	45-90	18-45	3-20
102A:												
La Hogue-----	0-16	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	80-100	50-80	20-35	5-15
	16-32	Sandy clay loam, loam, clay loam	CL, ML, SC, SM	A-4, A-6	0	0	100	95-100	80-100	40-85	25-40	8-20
	32-48	Sandy loam, loam	SC, SC-SM, SM, CL, ML	A-2-4, A-2-6, A-4, A-6	0	0	100	90-100	75-90	20-70	20-30	2-15
	48-60	Stratified loamy sand to silt loam	SC, SC-SM, SM, CL-ML, ML	A-2-4, A-4	0	0	95-100	80-100	60-90	15-70	18-25	NP-10
103A:												
Houghton-----	0-11	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	11-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
104A:												
Virgil-----	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	90-100	20-35	8-20
	7-13	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	90-100	20-35	5-20
	13-49	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	98-100	90-100	30-50	15-30
	49-58	Loam, sandy loam, silty clay loam	CL, CL-ML, SC-SM	A-4, A-6, A- 7-6	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-2-4, A-4, A-6	0	0-5	90-100	85-100	70-95	20-80	20-35	5-15
119B:												
Elco-----	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	6-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	5-15
	10-28	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	25-45	10-30
	28-32	Silty clay loam, clay loam, silt loam	CL	A-6, A-7-6	0	0	100	90-100	85-95	65-95	25-45	10-30
	32-60	Silty clay loam, loam, clay, clay loam	CL	A-6, A-7-6	0	0	100	90-100	80-100	60-90	25-50	10-30

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
125A: Selma-----	0-6	Loam	CL, ML	A-4, A-6	0	0	100	95-100	80-100	55-85	25-35	8-15
	6-13	Clay loam	ML, CL	A-6, A-7-6	0	0	100	95-100	80-100	55-85	30-43	11-21
	13-44	Loam, silty clay loam, sandy loam, clay loam	CL, SC	A-6, A-4	0	0	100	85-100	80-95	38-85	23-41	7-20
	44-80	Stratified sand to silt loam	SM, SC-SM, SC, ML, CL- ML	A-4, A-2-4	0	0	90-100	80-100	60-90	10-70	15-28	1-9
134A: Camden-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	9-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	14-29	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	29-60	Clay loam, loam, sandy loam, silt loam, sandy clay loam	CL, SC, CL- ML, SC-SM	A-2-4, A-4, A-6	0	0-1	90-100	85-100	60-95	30-85	20-40	5-15
	60-71	Stratified silt loam to loamy sand	SC-SM, SM, SC, CL-ML	A-2-4, A-4	0	0-3	85-100	80-98	50-90	15-75	15-25	NP-10
146A: Elliott-----	0-6	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	29-37	7-15
	6-11	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-100	40-46	15-19
	11-16	Silty clay	CL, CH	A-7-6	0	0	100	95-100	90-100	85-100	42-56	18-30
	16-41	Silty clay loam	CL	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-42	12-20
	41-60	Silty clay loam	CL	A-6	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17
148A: Proctor-----	0-11	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	10-20
	11-27	Silty clay loam, silt loam	CL	A-6, A-4, A-	0	0	100	100	95-100	85-100	25-50	10-25
	27-44	Clay loam, sandy loam, silt loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-6, A- 7-6, A-2-6	0	0	95-100	85-100	75-95	30-85	20-45	5-25
	44-73	Stratified loamy sand to loam	SC-SM, SC, CL-ML, CL	A-6, A-4, A- 2-6	0	0	90-100	80-98	65-95	15-85	20-35	5-20

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
<b>148B:</b>												
Proctor-----	0-12	Silt loam	CL	A-4, 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-4, A-	0	0	100	100	95-100	85-100	25-50	10-25
	29-48	Clay loam, sandy loam, silt loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-6, A-7-6, A-2-6	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-6, A-4, A-2-6	0	0	90-100	80-98	65-95	15-85	20-35	5-20
<b>149A:</b>												
Brenton-----	0-13	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	30-40	8-15
	13-35	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	35-50	10-25
	35-43	Clay loam, silt loam, sandy loam, loam	CL, SC, ML, SM	A-6, A-7-6	0	0	100	95-100	90-100	40-85	30-45	10-20
	43-60	Stratified loamy sand to clay loam	CL, SC, SC-SM, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	95-100	80-100	80-100	15-85	20-35	5-20
<b>152A:</b>												
Drummer-----	0-14	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	95-100	85-100	30-50	15-30
	14-41	Silty clay loam, silt loam	CL	A-6, A-7-6	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-7-6	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-2-6, A-4, A-6, A-2-4	0	0-5	95-100	80-98	75-95	15-85	20-35	7-20
<b>152A+:</b>												
Drummer-----	0-16	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	30-45	10-20
	16-30	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	95-100	85-95	30-50	15-30
	30-57	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	95-100	85-95	30-50	15-30
	57-63	Loam, silt loam, clay loam, sandy loam	CL, SC	A-6, A-7-6	0	0-5	95-100	90-100	75-95	40-85	30-50	15-30
	63-80	Stratified loamy sand to silty clay loam	CL, SC	A-2-4, A-4, A-6	0	0-5	95-100	80-95	75-95	15-80	20-35	7-20
<b>153A:</b>												
Pella-----	0-12	Silty clay loam	CL	A-7-6	0	0	100	95-100	90-100	85-100	40-50	15-25
	12-33	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	30-50	15-30
	33-42	Silty clay loam, silt loam, clay loam, sandy loam, loam	CL, SC	A-6, A-7-6	0-1	0-5	95-100	85-100	85-95	40-90	25-45	10-25
	42-60	Stratified loamy sand to silty clay loam	SC, SC-SM, CL	A-2-6, A-4, A-6, A-2-4	0-1	0-5	90-100	80-100	50-100	15-85	20-35	7-20

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
172A:												
Hoopeston-----	0-14	Sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	70-90	25-50	15-25	NP-8
	14-38	Fine sandy loam, sandy loam, loamy sand, loam	SC, SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	60-85	25-50	15-30	NP-10
	38-60	Sand, loamy fine sand, loamy sand	SC-SM, SM, SP-SM	A-2-4, A-3	0	0	95-100	90-100	50-80	5-30	0-20	NP-5
188A:												
Beardstown-----	0-9	Loam	CL-ML, CL	A-4, A-6	0	0	100	100	80-95	50-75	20-30	5-15
	9-14	Loam, silt loam, sandy loam	CL-ML, CL	A-4, A-6	0	0	100	100	80-95	50-65	20-30	5-15
	14-41	Clay loam, loam, sandy loam	CL, ML	A-4, A-6	0	0	100	100	80-90	50-70	25-40	7-20
	41-60	Stratified loamy sand to sandy loam	SC-SM, SM	A-1-b, A-4, A-2-4	0	0	100	100	20-50	15-45	0-15	NP-5
197A:												
Troxel-----	0-8	Silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	33-47	11-18
	8-33	Silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	29-43	12-18
	33-55	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	80-100	35-47	17-25
	55-80	Clay loam, loam, sandy loam, gravelly sandy clay loam, gravelly sandy loam	CL, ML, SC, SM	A-4, A-6, A- 7-6, A-2-6	0-1	0-3	90-100	70-100	60-90	30-85	26-46	10-25
198A:												
Elburn-----	0-16	Silt loam	ML, CL, CL-ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	4-14
	16-49	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	49-58	Stratified sandy loam to silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	55-75	20-30	5-15
	58-62	Stratified sandy loam to loamy sand	SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	50-85	20-45	19-25	1-7
199A:												
Plano-----	0-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	14-49	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	49-60	Loam, clay loam, sandy loam	CL, ML, SC, SM	A-4, A-6	0	0-1	90-100	85-95	60-90	40-65	30-45	10-25
	60-72	Stratified loamy sand to silt loam	SC-SM, SM, CL, CL-ML, ML, SC	A-2-4, A-4	0	0-5	90-100	70-95	40-80	15-55	20-25	NP-10

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
199B:												
Plano-----	0-15	Silt loam	ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	27-35	7-15
	15-45	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	29-40	11-25
	45-55	Clay loam, loam, sandy loam	CL	A-4, A-6	0	0	85-100	80-97	55-95	50-85	25-35	7-25
	55-72	Stratified loamy sand to clay loam	SC-SM, SC, CL-ML, CL	A-2-4, A-4	0	0-3	85-100	80-95	45-90	25-60	22-28	4-10
199C2:												
Plano-----	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	8-41	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	41-53	Clay loam, loam, sandy loam	SC-SM, SC, CL-ML, CL	A-6, A-4, A- 7-6	0	0-1	90-100	85-95	60-90	35-75	20-45	5-25
	53-60	Stratified loamy sand to silt loam	SC-SM, SM, CL-ML, SC	A-2-4, A-4	0	0-5	90-100	70-95	60-90	15-70	0-25	NP-10
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, CL-ML	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-7-6	0	0	100	95-100	90-100	85-100	35-50	15-30
	43-50	Loam, clay loam, sandy clay loam	CL	A-4, A-6	0	0	90-100	85-100	75-95	50-90	20-40	10-20
	50-65	Stratified loamy sand to loam	SC-SM, SM	A-2-4, A-4	0	0	85-100	80-95	35-80	25-50	15-25	2-7
219A:												
Millbrook-----	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	8-12	Silt loam	CL, CL-ML, 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, loam, sandy loam	CL, SC	A-6	0	0-3	95-100	85-100	70-95	40-85	25-40	10-20
	41-65	Stratified loamy sand to clay loam	SC, SC-SM, SM, CL, CL- ML	A-2-4, A-2-6, A-4, A-6	0-1	0-5	90-100	80-100	65-90	15-80	15-30	NP-15

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	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, ML	A-6, A-7-6	0	0	95-100	90-100	75-100	50-90	25-45	10-25
	32-36	Loam	CL, ML	A-4, A-6	0	0	95-100	85-100	75-85	50-70	25-35	8-15
	36-60	Loam	CL, CL-ML, 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, ML	A-6, A-7-6	0	0	95-100	90-100	75-100	50-90	25-45	10-25
	29-33	Loam	CL, ML	A-4, A-6	0	0	95-100	85-100	75-85	50-70	25-35	8-15
	33-60	Loam	CL, CL-ML, 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, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	80-95	25-40	8-20
	12-30	Silty clay, silty clay loam, clay	CL, CH, MH	A-6, A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	35-55	20-35
	30-48	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	30-50	15-30
	48-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	30-45	13-25
227B:												
Argyle-----	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	85-100	35-45	13-18
	7-13	Silt loam	CL	A-4, A-6	0	0	100	95-100	95-100	85-100	26-38	9-18
	13-25	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	80-95	37-47	19-25
	25-70	Gravelly clay loam, clay loam, gravelly sandy clay loam, loam	SC, CL	A-2-6, A-6, A-7-6	0	0-5	85-100	55-100	23-85	20-75	33-44	17-25
	70-84	Sandy loam, clay loam	SM, ML, CL, SC	A-2-4, A-4, A-6, A-1-b	0-2	0-5	90-100	75-100	30-75	15-65	16-40	2-21
242A:												
Kendall-----	0-7	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	95-100	90-100	20-35	5-15
	7-11	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	20-35	5-15
	11-51	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	90-100	35-45	16-25
	51-58	Loam, clay loam	CL, SC	A-6, A-4	0	0	95-100	80-98	65-98	40-80	25-35	8-15
	58-74	Stratified sandy loam to silt loam	CL-ML, CL, SC-SM, SC	A-4	0	0-3	90-100	80-98	60-95	40-80	20-30	4-10

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
243A:												
St. Charles-----	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	9-51	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	51-60	Stratified sandy loam to clay loam	CL, SC	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20
243B:												
St. Charles-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	8-50	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	50-60	Clay loam, silt loam, sandy loam, loam, stratified sandy loam to silt loam	CL, SC	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20
243C2:												
St. Charles-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	8-41	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-25
	41-60	Clay loam, silt loam, sandy loam, loam	SC, CL	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20
278A:												
Stronghurst-----	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	7-11	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	95-100	20-35	5-15
	11-47	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	40-55	20-35
	47-60	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	95-100	25-40	5-20
279A:												
Rozetta-----	0-4	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	4-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	11-50	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	50-60	Silt loam, silty clay loam	CL	A-6, A-4	0	0	100	100	95-100	85-100	25-40	7-20
280B:												
Fayette-----	0-9	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	100	95-100	25-35	5-15
	9-39	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-45	15-25
	39-60	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	10-20

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
280C2: Fayette-----	0-8	Silt loam	CL	A-6, A-7-6, A-4	0	0	100	100	100	95-100	30-45	10-25
	8-64	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-45	15-25
	64-80	Silt loam	CL	A-6, A-4	0	0	100	100	100	95-100	30-40	10-20
290A: Warsaw-----	0-15	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	55-75	20-30	4-15
	15-31	Sandy clay loam, loam, clay loam	CL, ML, SC, SM	A-2-6, A-4, A-6	0	0-3	90-100	85-100	60-90	30-80	25-40	8-20
	31-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-85	15-80	7-20	2-15	0-15	NP
290B: Warsaw-----	0-11	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	55-75	20-30	4-15
	11-29	Sandy clay loam, loam, clay loam	CL, ML, SC, SM	A-2-6, A-4, A-6	0	0-3	90-100	85-100	60-90	30-80	25-40	8-20
	29-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-85	15-80	7-20	2-15	0-15	NP
290C2: Warsaw-----	0-9	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	55-75	20-30	4-15
	9-28	Sandy clay loam, loam, clay loam	CL, ML, SC, SM	A-2-6, A-4, A-6	0	0-3	90-100	85-100	60-90	30-80	25-40	8-20
	28-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-85	15-80	7-20	2-15	0-15	NP
290D2: Warsaw-----	0-7	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	55-75	20-30	4-15
	7-27	Sandy clay loam, loam, clay loam	CL, ML, SC, SM	A-2-6, A-4, A-6	0	0-3	90-100	85-100	60-90	30-80	25-40	8-20
	27-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-85	15-80	7-20	2-15	0-15	NP

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
293A:												
Andres-----	0-11	Silt loam	ML, CL	A-4, A-6	0	0	95-100	90-100	80-95	65-90	29-33	7-13
	11-36	Clay loam, sandy clay loam, loam, silty clay loam	ML, CL	A-6	0	0-1	95-100	85-100	75-95	50-85	31-39	11-18
	36-50	Silty clay loam	ML, CL	A-6	0	0-1	95-100	85-100	80-95	70-95	33-39	12-17
	50-60	Silty clay loam, silt loam	ML, CL	A-6	0	0-3	95-100	85-100	80-95	70-95	30-39	10-17
297B:												
Ringwood-----	0-12	Silt loam	CL, ML	A-4, A-6	0	0	100	100	90-100	75-90	28-35	8-15
	12-20	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	75-95	30-45	12-25
	20-36	Sandy clay loam, clay loam, loam	CL, ML, SC, SM	A-4, A-6	0	0	95-100	85-100	70-95	45-70	25-40	8-20
	36-40	Sandy loam, loam, fine sandy loam, gravelly sandy loam	SC, SC-SM, SM, CL, CL- ML	A-4, A-6	0	0-2	85-98	75-95	60-85	35-55	20-30	2-12
	40-60	Sandy loam, gravelly sandy loam, very gravelly sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-1	0-3	80-95	45-85	40-80	30-50	0-25	NP-10
297C2:												
Ringwood-----	0-8	Silt loam	CL, ML	A-4, A-6	0	0	100	100	90-100	75-90	28-35	8-15
	8-19	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	75-95	30-45	12-25
	19-38	Sandy clay loam, clay loam, loam	CL, ML, SC, SM	A-4, A-6	0	0	95-100	85-100	70-95	45-70	25-40	8-20
	38-60	Sandy loam, gravelly sandy loam, very gravelly sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-1	0-3	80-95	45-85	40-80	30-50	0-25	NP-10
297D2:												
Ringwood-----	0-8	Silt loam	CL, ML	A-4, A-6	0	0	100	100	90-100	75-90	28-35	8-15
	8-16	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	75-95	30-45	12-25
	16-32	Sandy clay loam, clay loam, loam	CL, ML, SC, SM	A-4, A-6	0	0	95-100	85-100	70-95	45-70	25-40	8-20
	32-60	Sandy loam, gravelly sandy loam, very gravelly sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-1	0-3	80-95	45-85	40-80	30-50	0-25	NP-10

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
310B: McHenry-----	0-5	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	70-90	20-32	5-13
	5-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	70-90	20-32	5-13
	10-22	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	90-100	75-95	30-45	12-25
	22-32	Sandy clay loam, clay loam, loam	CL, ML, SC, SM	A-4, A-6	0	0-2	95-100	85-95	70-95	45-70	25-40	8-20
	32-37	Sandy loam, loam, fine sandy loam	SC, SC-SM, SM, CL, CL- ML	A-4, A-6	0-1	0-5	90-98	80-95	60-85	35-55	20-30	2-12
	37-60	Sandy loam, fine sandy loam, gravelly sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-1	0-10	75-95	65-85	55-80	30-45	0-25	NP-10
310C2: McHenry-----	0-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	70-90	20-32	5-13
	10-19	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	90-100	75-95	30-45	12-25
	19-30	Sandy clay loam, clay loam, loam	CL, ML, SC, SM	A-4, A-6	0	0-2	95-100	85-95	70-95	45-70	25-40	8-20
	30-36	Sandy loam, loam, fine sandy loam	SC, SC-SM, SM, CL, CL- ML	A-4, A-6	0-1	0-5	90-98	80-95	60-85	35-55	20-30	2-12
	36-60	Sandy loam, fine sandy loam, gravelly sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-1	0-10	75-95	65-85	55-80	30-45	0-25	NP-10
310D2: McHenry-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	70-90	20-32	5-13
	7-18	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	90-100	75-95	30-45	12-25
	18-28	Sandy clay loam, clay loam, loam	CL, ML, SC, SM	A-4, A-6	0	0-2	95-100	85-95	70-95	45-70	25-40	8-20
	28-33	Sandy loam, loam, fine sandy loam	SC, SC-SM, SM, CL, CL- ML	A-4, A-6	0-1	0-5	90-98	80-95	60-85	35-55	20-30	2-12
	33-60	Sandy loam, fine sandy loam, gravelly sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-1	0-10	75-95	65-85	55-80	30-45	0-25	NP-10

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
325B: Dresden-----	0-7	Silt loam	CL, CL-ML, 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, silt loam	CL, ML	A-6, A-7-6	0	0	100	80-100	70-100	50-95	30-45	10-25
	27-32	Clay loam, gravelly clay loam, sandy clay loam, very gravelly loam	CL, SC	A-2-6, A-6, A-7-6	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-a, A-1-b	0-5	5-35	45-90	15-70	10-50	1-20	0-14	NP
325C2: Dresden-----	0-7	Silt loam	CL, CL-ML, 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, loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	80-100	70-100	50-95	30-45	10-25
	26-30	Clay loam, gravelly clay loam, sandy clay loam, very gravelly loam	CL, SC	A-2-6, A-6, A-7-6	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-a, A-1-b	0-5	5-35	45-90	15-70	10-50	1-20	0-14	NP
327B: Fox-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	7-11	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	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, SC	A-2-6, A-6, A-7-6	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, A-1-b, A-3	0-3	0-10	30-100	15-85	10-70	2-10	0-14	NP

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
327C2:												
Fox-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	9-21	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	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, SC	A-2-6, A-6, A-7-6	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, A-1-b, 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, A-6	0	0	95-100	95-100	85-98	60-80	15-30	3-15
	8-28	Clay loam, sandy clay loam, clay loam, gravelly loam	CL, ML, SC, SM	A-2-6, A-6, A-7-6	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, A-1-b, A-3	0-3	0-10	30-100	15-85	10-70	2-10	0-14	NP
329A:												
Will-----	0-14	Loam	CL, ML	A-6, A-7-5, A-7-6	0	0	95-100	90-100	85-95	55-85	37-49	13-18
	14-25	Loam, clay loam, silty clay loam, sandy clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	80-100	60-95	55-85	34-48	16-23
	25-28	Loam, sandy loam, gravelly sandy loam, gravelly sandy clay loam	SC, SC-SM, SM, CL, ML	A-4, A-6, A-2-4, A-2-6	0-1	0-5	80-100	65-85	40-80	25-65	22-37	7-17
	28-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM, SM	A-1-a, A-1-b	0-2	1-10	40-85	15-70	10-40	1-15	0-23	NP-6
332A:												
Billett-----	0-8	Sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	85-100	25-50	15-25	2-10
	8-13	Sandy loam, fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	95-100	25-50	15-25	2-10
	13-28	Sandy loam, fine sandy loam	SC, SC-SM	A-2-4, A-2-6, A-4	0	0-5	95-100	90-100	85-100	20-45	20-30	5-12
	28-47	Loamy sand, sandy loam, fine sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4	0	0-8	85-100	75-100	75-90	15-40	18-30	4-12
	47-60	Loamy sand, fine sand, gravelly loamy sand	SM, SP-SM	A-1-b, A-2-4, A-3	0	0-10	80-100	70-100	40-95	5-20	0-15	NP-2

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
332B:												
Billett-----	0-8	Sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	85-100	25-50	15-25	2-10
	8-29	Sandy loam, fine sandy loam	SC, SC-SM	A-2-4, A-2-6, A-4	0	0-5	95-100	90-100	85-100	20-45	20-30	5-12
	29-38	Loamy sand, sandy loam, fine sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4	0	0-8	85-100	75-100	75-90	15-40	18-30	4-12
	38-60	Loamy sand, fine sand, gravelly loamy sand	SM, SP-SM	A-1-b, A-2-4, A-3	0	0-10	80-100	70-100	40-95	5-20	0-15	NP-2
343A:												
Kane-----	0-5	Silt loam	CL	A-4, A-6	0	0	95-100	95-100	90-100	75-95	25-35	8-15
	5-12	Silty clay loam	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	80-95	35-44	15-22
	12-22	Silty clay loam, clay loam, loam	CL, ML	A-6, A-7-6	0	0	95-100	95-100	80-100	65-95	32-44	12-22
	22-29	Clay loam, sandy loam, sandy clay loam	CL, CL-ML, SC	A-4, A-6	0-1	0-5	90-100	80-95	60-90	40-70	20-35	6-15
	29-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b	0-1	0-10	30-85	15-75	10-50	2-12	0-15	NP
344A:												
Harvard-----	0-9	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	90-100	85-100	20-35	8-15
	9-36	Silty clay loam, silt loam	CL, ML	A-6, A-4, A- 7-6	0	0	100	95-100	90-100	85-100	30-45	10-25
	36-56	Clay loam, silt loam, sandy loam, sandy clay loam, loam	SM, SC, ML, CL	A-4, A-6, A- 7-6	0	0-3	95-100	85-100	75-90	40-85	25-45	5-25
	56-60	Stratified sand to clay loam	CL-ML, CL, SC, SC-SM	A-4, A-6, A- 2-4, A-2-6	0	0-5	90-100	80-98	40-90	15-70	20-35	5-15
344B:												
Harvard-----	0-9	Silt loam	ML, CL	A-4, A-6	0	0	100	95-100	90-100	85-100	20-35	8-15
	9-30	Silty clay loam, silt loam	ML, CL	A-6, A-4, A- 7-6	0	0	100	95-100	90-100	85-100	30-45	10-25
	30-56	Clay loam, silt loam, sandy loam, sandy clay loam, loam	ML, SM, SC, CL	A-4, A-6, A- 7-6	0	0-3	95-100	85-100	75-90	40-85	25-45	5-25
	56-69	Stratified sand to clay loam	SC-SM, SC, CL, CL-ML	A-4, A-6, A- 2-4, A-2-6	0	0-5	90-100	80-98	40-90	15-70	20-35	5-15

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
354A: Hononegah-----	0-19	Loamy coarse sand	SM, SC-SM	A-2-4	0	0-10	90-100	85-100	60-80	15-25	0-20	NP-5
	19-24	Coarse sand, loamy coarse sand, sandy loam, gravelly loamy coarse sand	SP-SM, SC-SM, SM	A-1-b, A-2-4, A-3	0-1	0-15	80-95	75-95	40-60	5-25	10-20	NP-6
	24-60	Coarse sand, gravelly coarse sand, loamy coarse sand, very gravelly loamy coarse sand	GM, GP-GM, GP, SM, SP	A-1-a, A-1-b	0-1	0-15	30-85	20-80	10-35	0-20	0-15	NP
354B: Hononegah-----	0-15	Loamy coarse sand sand	SC-SM, SM	A-2-4	0	0-10	90-100	85-100	60-80	15-25	0-20	NP-5
	15-22	Coarse sand, loamy coarse sand, sandy loam, gravelly loamy coarse sand	SP-SM, SM, SC-SM	A-1-b, A-2-4, A-3	0-1	0-15	80-95	75-95	40-60	5-25	10-20	NP-6
	22-60	Coarse sand, gravelly coarse sand, loamy coarse sand, very gravelly loamy coarse sand	GM, GP-GM, GP, SM, SP	A-1-a, A-1-b	0-1	0-15	30-85	20-80	10-35	0-20	0-15	NP
361B: Kidder-----	0-9	Loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	85-100	70-100	50-75	20-30	3-12
	9-31	Clay loam, sandy clay loam, loam	CL, ML, SC	A-4, A-6	0	0-3	90-100	80-100	60-90	35-75	25-40	8-20
	31-34	Sandy loam, loam, fine sandy loam	SC, SC-SM, SM, CL, CL- ML	A-2-4, A-4	0	0-5	90-98	80-95	55-85	30-55	20-30	2-10
	34-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-10	60-95	55-90	30-80	20-50	0-20	NP-5
361C2: Kidder-----	0-8	Loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	85-100	70-100	50-75	20-30	3-12
	8-30	Clay loam, sandy clay loam, loam	CL, ML, SC	A-4, A-6	0	0-3	90-100	80-100	60-90	35-75	25-40	8-20
	30-41	Sandy loam, loam, fine sandy loam	SC, SC-SM, SM, CL, CL- ML	A-2-4, A-4	0	0-5	90-98	80-95	55-85	30-55	20-30	2-10
	41-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-10	60-95	55-90	30-80	20-50	0-20	NP-5

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
361D2: Kidder-----	0-7	Loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	85-100	70-100	50-75	20-30	3-12
	7-23	Clay loam, sandy clay loam, loam	CL, ML, SC	A-4, A-6	0	0-3	90-100	80-100	60-90	35-75	25-40	8-20
	23-27	Sandy loam, loam, fine sandy loam	SC, SC-SM, SM, CL, CL- ML	A-2-4, A-4	0	0-5	90-98	80-95	55-85	30-55	20-30	2-10
	27-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-10	60-95	55-90	30-80	20-50	0-20	NP-5
361D3: Kidder-----	0-7	Clay loam	CL	A-6	0	0-3	90-100	85-100	70-95	55-80	30-40	10-20
	7-23	Clay loam, sandy clay loam, loam	CL, ML, SC	A-4, A-6	0	0-3	90-100	80-100	60-90	35-75	25-40	8-20
	23-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-10	60-95	55-90	30-80	20-50	0-20	NP-5
361E2: Kidder-----	0-8	Loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	85-100	70-100	50-75	20-30	3-12
	8-29	Clay loam, sandy clay loam, loam	CL, ML, SC	A-4, A-6	0	0-3	90-100	80-100	60-90	35-75	25-40	8-20
	29-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-10	60-95	55-90	30-80	20-50	0-20	NP-5
363C2: Griswold-----	0-10	Loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	90-100	55-80	20-35	5-15
	10-24	Loam, sandy clay loam, clay loam	CL, ML, SC, SM	A-4, A-6	0	0-5	95-100	90-100	80-90	45-80	25-40	8-20
	24-27	Sandy loam, loam, fine sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-4, A-6	0-1	0-10	85-95	80-95	60-85	30-55	20-30	4-12
	27-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-1	0-10	85-95	60-90	50-75	20-45	0-25	NP-8
363D2: Griswold-----	0-8	Loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	90-100	55-80	20-35	5-15
	8-23	Loam, sandy clay loam, clay loam	CL, ML, SC, SM	A-4, A-6	0	0-5	95-100	90-100	80-90	45-80	25-40	8-20
	23-27	Sandy loam, loam, fine sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-4, A-6	0-1	0-10	85-95	80-95	60-85	30-55	20-30	4-12
	27-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-1	0-10	85-95	60-90	50-75	20-45	0-25	NP-8

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
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-7-6	0	0	100	100	95-100	85-95	35-45	15-25
	38-55	Stratified gravelly loamy sand to sandy clay loam	CL-ML, ML, SC, SC-SM, SM	A-2-4, A-4	0	0-3	90-100	50-100	50-70	25-65	0-20	NP-10
	55-70	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM, SM	A-1-a, A-1-b	0-5	5-35	40-95	15-80	10-50	1-15	0-14	NP
379A:												
Dakota-----	0-11	Loam	CL	A-4, A-6	0	0	95-100	90-100	75-95	50-75	25-35	7-15
	11-30	Loam, sandy clay loam, clay loam	CL, SC	A-4, A-6	0	0	95-100	90-100	70-100	35-80	25-40	9-20
	30-34	Sandy loam, loamy sand	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-3	90-100	80-100	40-75	15-45	0-21	NP-4
	34-60	Sand, gravelly coarse sand, loamy sand	SM, SP-SM, SP	A-1-b, A-2-4, A-3	0-1	0-5	75-100	60-100	20-75	2-25	0-14	NP
387A:												
Ockley-----	0-9	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	95-100	80-100	70-100	50-90	22-39	6-15
	9-31	Clay loam, silty clay loam, silt loam	CL	A-6, A-7-6	0	0	90-100	80-100	75-95	60-90	31-46	13-25
	31-57	Gravelly clay loam, clay loam, gravelly sandy clay loam	CL, SC	A-2-6, A-6, A-7-6	0	0-2	80-85	50-85	40-75	20-60	31-44	13-23
	57-60	Stratified very gravelly coarse sand to gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1-a, A-2-4	0-2	2-5	60-75	20-75	10-55	1-15	0-20	NP-2
387B:												
Ockley-----	0-9	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	95-100	80-100	70-100	50-90	22-39	6-15
	9-31	Clay loam, silty clay loam, silt loam	CL	A-6, A-7-6	0	0	90-100	80-100	75-95	60-90	31-46	13-25
	31-55	Gravelly clay loam, clay loam, gravelly sandy clay loam	SC, CL	A-2-6, A-6, A-7-6	0	0-2	80-85	50-85	40-75	20-60	31-44	13-23
	55-60	Stratified very gravelly coarse sand to gravelly loamy sand	SP-SM, SP, GP-GM, GP	A-1-a, A-2-4	0-2	2-5	60-75	20-75	10-55	1-15	0-20	NP-2

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
403E: Elizabeth-----	0-6	Silt loam	CL, ML	A-4, A-6	0-1	0-7	87-100	80-100	70-100	55-95	25-36	8-16
	6-10	Cobbly silt loam, silt loam, loam, clay loam	CL, ML, SC	A-6, A-7-6	0-6	0-37	80-100	65-100	57-95	35-95	30-45	10-23
	10-19	Extremely cobbly loam, very cobbly silt loam, very cobbly loam, extremely cobbly clay loam	SC, GC, CL	A-2-6, A-6, A-7-6	0-25	35-55	50-100	35-100	30-95	17-83	30-44	10-22
	19-60	Bedrock	---	---	---	---	---	---	---	---	---	---
412B: Ogle-----	0-11	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	10-18
	11-33	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	95-100	95-100	93-100	35-47	17-25
	33-80	Clay loam, silty clay loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	85-100	75-100	58-95	37-46	19-25
419A: Flagg-----	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	33-43	13-18
	8-11	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	24-37	9-18
	11-38	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	94-100	92-100	83-100	35-46	17-25
	38-60	Clay loam, sandy clay loam, silty clay loam	CL	A-6, A-7-6	0	0	95-100	85-100	75-100	45-90	30-44	15-25
419B: Flagg-----	0-4	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	33-43	13-18
	4-11	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	24-37	9-18
	11-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	94-100	92-100	83-100	35-46	17-25
	48-72	Clay loam, sandy clay loam, silty clay loam	CL	A-6, A-7-6	0	0	95-100	85-100	75-100	45-90	30-44	15-25
419C2: Flagg-----	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	33-43	13-18
	7-33	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	94-100	92-100	83-100	35-46	17-25
	33-60	Clay loam, sandy clay loam, silty clay loam	CL	A-7-6, A-6	0	0	95-100	85-100	75-100	45-90	30-44	15-25

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
440A:												
Jasper-----	0-18	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	18-37	Clay loam, silty clay loam, loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	85-95	50-85	30-45	10-20
	37-44	Fine sandy loam, loam, sandy clay loam, sandy loam	SC, SC-SM, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	100	92-100	70-85	30-60	20-35	5-15
	44-60	Stratified loamy sand to silt loam	SC, SC-SM, SM, CL, CL- ML	A-2-4, A-4	0	0	95-100	85-100	60-85	20-75	0-30	NP-10
440B:												
Jasper-----	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	14-43	Clay loam, silty clay loam, loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	85-95	50-85	30-45	10-20
	43-52	Fine sandy loam, loam, sandy clay loam, sandy loam	SC, SC-SM, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	100	92-100	70-85	30-60	20-35	5-15
	52-60	Stratified loamy sand to silt loam	SC, SC-SM, SM, CL, CL- ML	A-2-4, A-4	0	0	95-100	85-100	60-85	20-75	0-30	NP-10
440C2:												
Jasper-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	9-29	Clay loam, silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	85-95	50-85	30-45	10-20
	29-37	Fine sandy loam, loam, sandy clay loam, sandy loam loam	SC, SC-SM, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	100	92-100	70-85	30-60	20-35	5-15
	37-60	Stratified loamy sand to silt loam	SC, SC-SM, SM, CL, CL- ML	A-2-4, A-4	0	0	95-100	85-100	60-85	20-75	0-30	NP-10
490A:												
Odell-----	0-15	Silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	85-100	80-95	33-45	11-18
	15-20	Silty clay loam, clay loam	CL	A-6, A-7-6	0	0	100	95-100	80-100	70-95	38-48	19-25
	20-29	Clay loam, loam	CL	A-6, A-7-6	0	0	95-100	90-100	75-100	55-80	35-47	17-25
	29-40	Loam	CL, CL-ML	A-4, A-6	0	0-3	95-100	85-100	70-95	50-75	22-37	7-17
	40-60	Loam, fine sandy loam	CL-ML, CL	A-4, A-6	0	0-3	95-100	80-100	70-95	50-75	20-31	6-13

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
503B:												
Rockton-----	0-11	Silt loam	CL	A-4, A-6	0	0	100	95-100	85-95	65-90	25-35	8-15
	11-31	Clay loam, loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	90-100	75-97	50-80	35-45	15-23
	31-35	Clay loam, clay, silty clay	CL, CH	A-7-6	0	0-3	90-100	85-100	80-95	65-90	45-69	25-44
	35-60	Bedrock	---	---	---	---	---	---	---	---	---	---
505D2:												
Dunbarton-----	0-7	Silt loam	CL	A-4, A-6	0	0-7	85-100	75-100	75-100	60-95	25-35	7-15
	7-14	Silty clay loam, silt loam, clay loam	CL, CH	A-6, A-7-6	0	0-8	70-100	70-100	70-100	70-95	35-60	15-35
	14-18	Clay, silty clay	CL, CH	A-7-6	0	0-8	70-100	70-100	70-100	70-95	45-90	25-60
	18-60	Bedrock	---	---	---	---	---	---	---	---	---	---
505E2:												
Dunbarton-----	0-5	Silt loam	CL	A-4, A-6	0	0-7	85-100	75-100	75-100	60-95	25-35	7-15
	5-10	Silty clay loam, silt loam, clay loam	CL, CH	A-6, A-7-6	0	0-8	70-100	70-100	70-100	70-95	35-60	15-35
	10-17	Clay, silty clay	CL, CH	A-7-6	0	0-8	70-100	70-100	70-100	70-95	45-90	25-60
	17-60	Bedrock	---	---	---	---	---	---	---	---	---	---
506B:												
Hitt-----	0-14	Silt loam	CL	A-6	0	0	100	100	100	90-100	30-37	11-16
	14-18	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	98-100	85-100	35-44	15-22
	18-41	Clay loam, sandy clay loam	CL	A-6, A-7-6	0	0-5	94-100	85-100	75-100	55-85	35-46	15-23
	41-45	Silty clay, clay	CH	A-7-6	0-2	0-10	90-100	85-100	80-95	70-95	60-75	40-51
	45-60	Bedrock	---	---	---	---	---	---	---	---	---	---
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-7-6	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-7-6	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 21.--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	3-10	4	10	40	200		
					inches	inches						
	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-7-6	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-7-6	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-7-6	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-7-6	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-7-6	0	0	100	100	95-100	85-95	30-50	15-30
	12-35	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	90-100	85-95	35-45	15-25
	35-44	Clay loam, silt loam, sandy loam, gravelly loam	CL, SC	A-2-6, A-4, A-6	0	0-5	90-100	70-100	55-90	30-80	25-40	8-20
	44-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	GM, GP-GM, SM, SP-SM	A-1-a, A-1-b	0-3	0-10	35-90	15-80	10-40	2-25	0-14	NP
526A:												
Grundelein-----	0-11	Silt loam	CL, ML	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-7-6	0	0	100	98-100	90-100	80-100	35-50	10-25
	33-39	Clay loam, sandy loam, silt loam, gravelly loam	CL, SC	A-2-4, A-4, A-6, A-2-6	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-a, A-1-b	0-3	0-10	40-90	15-80	10-50	2-25	0-14	NP

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
527B:												
Kidami-----	0-3	Silt loam	CL-ML, CL	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-4, A-6	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, ML, SC, 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, ML, SC, 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, ML, SC, SC- SM	A-4, A-6	0	0-3	90-100	80-95	65-90	40-65	15-30	3-15
528A:												
Lahoguess-----	0-14	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	98-100	80-100	55-80	20-35	5-15
	14-38	Clay loam, loam	CL, ML	A-4, A-6	0	0	100	95-100	80-95	50-85	25-40	7-20
	38-46	Loam, sandy loam, loamy sand	CL, CL-ML, ML, SC, SC- SM	A-2-4, A-4, A-6	0	0	95-100	85-100	60-90	25-65	15-30	1-15
	46-60	Loamy sand, sand	SM, SP-SM, SP	A-1-b, A-2-4, A-3	0	0-3	90-100	80-100	15-60	3-20	0-15	NP
529A:												
Selmass-----	0-15	Loam	CL	A-4, A-6	0	0	100	98-100	80-100	55-80	25-35	7-17
	15-42	Clay loam, loam	CL, ML	A-6, A-7-6	0	0	100	95-100	80-95	50-85	30-45	10-20
	42-47	Loam, sandy loam, loamy sand	CL, CL-ML, SC, SC-SM	A-2-4, A-4, A-6	0	0	95-100	85-100	60-90	20-70	15-30	3-15
	47-60	Loamy sand, sand	SM, SP-SM, SP	A-1-b, A-3	0	0-3	90-100	80-100	15-60	3-20	0-15	NP

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
543B:												
Piscasaw-----	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-36	7-16
	9-12	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-35	7-15
	12-26	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	90-100	85-100	34-44	14-22
	26-51	Clay loam, sandy clay loam, loam	CL, SC	A-6, A-7-6	0	0-2	95-100	85-98	75-95	50-80	30-43	11-21
	51-60	Loam, sandy loam, fine sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-95	65-90	45-70	25-30	7-11
544A:												
Torox-----	0-10	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-36	7-16
	10-25	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-98	34-44	14-22
	25-42	Clay loam, sandy clay loam, loam	CL	A-6, A-7-6	0	0-2	95-100	85-98	75-95	50-80	30-43	11-21
	42-65	Loam, sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-95	65-90	45-70	25-30	7-11
545A:												
Windere-----	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	97-100	90-98	28-36	9-16
	9-12	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-98	25-35	7-15
	12-36	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	92-98	90-97	34-44	14-22
	36-50	Clay loam, loam	CL	A-6, A-7-6	0	0-2	95-100	85-98	75-95	50-80	30-43	11-21
	50-60	Loam, sandy loam, fine sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-97	65-90	40-70	25-30	7-11
545B:												
Windere-----	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	97-100	90-98	28-36	9-16
	9-31	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	92-98	90-97	34-44	14-22
	31-50	Clay loam, loam	CL	A-6, A-7-6	0	0-2	95-100	85-98	75-95	50-80	30-43	11-21
	50-65	Loam, sandy loam, fine sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-97	65-90	40-70	25-30	7-11
561B:												
Whalan-----	0-10	Silt loam	CL	A-4, A-6	0	0	100	95-100	85-95	70-90	28-35	9-15
	10-33	Clay loam, loam, silty clay loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	95-100	80-95	55-85	32-44	13-22
	33-38	Clay loam, clay, silty clay	CL, CH	A-7-6	0	0-5	80-100	70-95	65-90	60-85	40-60	20-35
	38-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
561B:												
NewGlarus-----	0-12	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	95-100	90-100	20-37	5-18
	12-23	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	92-100	82-100	80-100	77-100	30-44	11-22
	23-37	Clay, silty clay, silty clay loam, channery silty clay	CH, CL, MH	A-7-6	0	0-10	80-100	55-95	53-95	48-95	45-74	25-48
	37-60	Bedrock	---	---	---	---	---	---	---	---	---	---
561C2:												
Whalan-----	0-4	Silt loam	CL	A-4, A-6	0	0	100	95-100	85-95	70-90	28-35	9-15
	4-33	Clay loam, loam, silty clay loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	95-100	80-95	55-85	32-44	13-22
	33-36	Clay loam, clay, silty clay	CL, CH	A-7-6	0	0-5	80-100	70-95	65-90	60-85	40-60	20-35
	36-60	Bedrock	---	---	---	---	---	---	---	---	---	---
NewGlarus-----	0-9	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	95-100	90-100	20-37	5-18
	9-23	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	92-100	82-100	80-100	77-100	30-44	11-22
	23-36	Clay, silty clay, silty clay loam, channery silty clay	MH, CL, CH	A-7-6	0	0-10	80-100	55-95	53-95	48-95	45-74	25-48
	36-60	Bedrock	---	---	---	---	---	---	---	---	---	---
561D2:												
Whalan-----	0-6	Silt loam	CL	A-4, A-6	0	0	100	95-100	85-95	70-90	28-35	9-15
	6-25	Clay loam, loam, silty clay loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	95-100	80-95	55-85	32-44	13-22
	25-27	Clay loam, clay, silty clay	CL, CH	A-7-6	0	0-5	80-100	70-95	65-90	60-85	40-60	20-35
	27-60	Bedrock	---	---	---	---	---	---	---	---	---	---
NewGlarus-----	0-7	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	95-100	90-100	20-37	5-18
	7-21	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	92-100	82-100	80-100	77-100	30-44	11-22
	21-30	Clay, silty clay, silty clay loam, channery silty clay	CL, CH, MH	A-7-6	0	0-10	80-100	55-95	53-95	48-95	45-74	25-48
	30-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 21.--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	3-10	4	10	40	200		
					inches	inches					Pct	Pct
	In											
566B:												
Rockton-----	0-10	Loam	CL	A-4, A-6	0	0	100	95-100	85-95	60-80	25-35	8-15
	10-21	Clay loam, loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	90-100	75-97	50-80	35-45	15-23
	21-25	Clay loam, clay, silty clay	CL, CH	A-7-6	0	0-3	90-100	85-100	80-95	65-90	45-69	25-44
	25-60	Bedrock	---	---	---	---	---	---	---	---	---	---
Dodgeville-----	0-12	Silt loam	CL	A-4, A-6	0	0-3	95-100	90-100	87-100	85-100	25-35	7-15
	12-21	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0-3	95-100	90-100	87-100	85-100	35-45	15-22
	21-36	Clay, silty clay	CH, MH	A-7-6	0	0-10	90-100	85-100	75-95	70-95	50-80	30-55
	36-60	Bedrock	---	---	---	---	---	---	---	---	---	---
566C2:												
Rockton-----	0-9	Loam	CL	A-4, A-6	0	0	100	95-100	85-95	60-80	25-35	8-15
	9-20	Clay loam, loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	90-100	75-97	50-80	35-45	15-23
	20-24	Clay loam, clay, silty clay	CH, CL	A-7-6	0	0-3	90-100	85-100	80-95	65-90	45-69	25-44
	24-60	Bedrock	---	---	---	---	---	---	---	---	---	---
Dodgeville-----	0-10	Silt loam	CL	A-4, A-6	0	0-3	95-100	90-100	87-100	85-100	25-35	7-15
	10-23	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0-3	95-100	90-100	87-100	85-100	35-45	15-22
	23-31	Clay, silty clay	MH, CH	A-7-6	0	0-10	90-100	85-100	75-95	70-95	50-80	30-55
	31-60	Bedrock	---	---	---	---	---	---	---	---	---	---
566D2:												
Rockton-----	0-8	Loam	CL	A-4, A-6	0	0	100	95-100	85-95	60-80	25-35	8-15
	8-20	Clay loam, loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	90-100	75-97	50-80	35-45	15-23
	20-22	Clay loam, clay, silty clay	CL, CH	A-7-6	0	0-3	90-100	85-100	80-95	65-90	45-69	25-44
	22-60	Bedrock	---	---	---	---	---	---	---	---	---	---
Dodgeville-----	0-8	Silt loam	CL	A-4, A-6	0	0-3	95-100	90-100	87-100	85-100	25-35	7-15
	8-13	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0-3	95-100	90-100	87-100	85-100	35-45	15-22
	13-24	Clay, silty clay	MH, CH	A-7-6	0	0-10	90-100	85-100	75-95	70-95	50-80	30-55
	24-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
570A: Martinsville----	0-9	Silt loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-100	65-90	15-25	3-8
	9-37	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	50-90	25-40	7-15
	37-58	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
	58-64	Stratified sand to silt loam	SM, SC-SM, ML, CL-ML	A-1-b, A-2-4, A-4	0	0	95-100	85-100	45-95	10-80	15-25	NP-8
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	Sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	90-100	75-95	45-70	15-25	3-8
	12-38	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	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, ML, CL-ML	A-1-b, A-2-4, A-4	0	0	95-100	85-100	45-95	10-80	15-25	NP-8
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, loam loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	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, ML, CL-ML	A-1-b, A-2-4, A-4	0	0	95-100	85-100	45-95	10-80	15-25	NP-8
570D2: Martinsville----	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-100	65-90	15-25	3-8
	7-39	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	50-90	25-40	7-15
	39-48	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
	48-60	Stratified sand to silt loam	SM, SC-SM, ML, CL-ML	A-1-b, A-2-4, A-4	0	0	95-100	85-100	45-95	10-80	15-25	NP-8

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
618B: Senachwine-----	0-11	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	20-30	5-15
	11-32	Clay loam, silty clay loam	CL	A-6, A-7-6	0	0	90-98	85-98	85-95	55-85	35-45	15-20
	32-40	Loam, fine sandy loam	CL	A-6, A-4	0-1	0-3	90-98	85-98	75-95	50-75	30-35	10-15
	40-60	Loam, fine sandy loam	CL, CL-ML	A-4, A-6	0-1	0-3	90-98	85-98	75-95	50-75	25-35	5-15
623A: Kishwaukee-----	0-15	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	80-100	70-95	20-32	5-13
	15-43	Clay loam, silty clay loam, loam, sandy clay loam	CL	A-6	0	0	90-100	85-100	75-100	55-90	30-40	11-20
	43-58	Gravelly loam, gravelly sandy loam, gravelly sandy clay loam	SC, SM, CL, ML	A-2-4, A-2-6, A-4, A-6	0	0-5	75-85	50-80	35-75	15-60	25-40	8-20
	58-60	Stratified extremely gravelly coarse sand to gravelly loamy sand	SM, GP-GM, SP-SM, SP, GP	A-1-a, A-1-b, A-3	0-2	2-5	60-75	20-75	10-55	1-15	0-15	NP
623B: Kishwaukee-----	0-11	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	80-100	70-95	20-32	5-13
	11-45	Clay loam, silty clay loam, loam, sandy clay loam	CL	A-6	0	0	90-100	85-100	75-100	55-90	30-40	11-20
	45-57	Gravelly loam, gravelly sandy loam, gravelly sandy clay loam	SC, SM, CL, ML	A-2-4, A-2-6, A-4, A-6	0	0-5	75-85	50-80	35-75	15-60	25-40	8-20
	57-60	Stratified extremely gravelly coarse sand to gravelly loamy sand	SM, SP-SM, SP, GP-GM, GP	A-1-a, A-1-b, A-3	0-2	2-5	60-75	20-75	10-55	1-15	0-15	NP
624B: Caprell-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	80-100	65-95	20-35	5-15
	7-33	Loam, clay loam, silty clay loam	CL, ML	A-6, A-7-6	0	0-2	95-100	90-100	75-95	60-90	25-45	10-25
	33-47	Loam, fine sandy loam, sandy loam, sandy clay loam	CL, CL-ML, ML, SC, SC- SM	A-4, A-6	0	0-2	90-100	85-98	70-90	40-70	20-35	5-15
	47-60	Loam, sandy loam, fine sandy loam	CL, CL-ML, SC, SC-SM, SM	A-4, A-6	0	0-3	90-100	80-98	65-85	35-65	15-30	3-12

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
624C2: Caprell-----	0-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	80-100	65-95	20-35	5-15
	10-22	Loam, clay loam, silty clay loam	CL, ML	A-6, A-7-6	0	0-2	95-100	90-100	75-95	60-90	25-45	10-25
	22-47	Loam, fine sandy loam, sandy loam, sandy clay loam	CL, CL-ML, ML, SC, SC- SM	A-4, A-6	0	0-2	90-100	85-98	70-90	40-70	20-35	5-15
	47-60	Loam, sandy loam, fine sandy loam	CL, CL-ML, SC, SC-SM, SM	A-4, A-6	0	0-3	90-100	80-98	65-85	35-65	15-30	3-12
624D2: Caprell-----	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	80-100	65-95	20-35	5-15
	8-25	Loam, clay loam, silty clay loam	CL, ML	A-6, A-7-6	0	0-2	95-100	90-100	75-95	60-90	25-45	10-25
	25-38	Loam, fine sandy loam, sandy loam, sandy clay loam	CL, CL-ML, ML, SC, SC- SM	A-4, A-6	0	0-2	90-100	85-98	70-90	40-70	20-35	5-15
	38-60	Loam, sandy loam, fine sandy loam	CL, CL-ML, SC, SC-SM, SM	A-4, A-6	0	0-3	90-100	80-98	65-85	35-65	15-30	3-12
624E: Caprell-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	80-100	65-95	20-35	5-15
	9-28	Loam, clay loam, silty clay loam	CL, ML	A-6, A-7-6	0	0-2	95-100	90-100	75-95	60-90	25-45	10-25
	28-43	Loam, fine sandy loam, sandy loam, sandy clay loam	CL, CL-ML, ML, SC, SC- SM	A-4, A-6	0	0-2	90-100	85-98	70-90	40-70	20-35	5-15
	43-60	Loam, sandy loam, fine sandy loam	CL, CL-ML, SC, SC-SM, SM	A-4, A-6	0	0-3	90-100	80-98	65-85	35-65	15-30	3-12
625B: Geryune-----	0-14	Silt loam	CL	A-4, A-6	0	0	100	100	97-100	90-98	28-36	9-16
	14-28	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	92-98	86-95	34-44	14-22
	28-43	Clay loam, loam, sandy clay loam	CL, SC	A-6, A-7-6	0	0-2	95-100	85-98	75-95	45-80	30-43	11-21
	43-60	Loam, sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-97	67-88	40-68	25-30	7-11

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
626A:												
Kish-----	0-11	Loam	CL	A-4, A-6	0	0	100	95-100	80-100	55-80	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-2-6, A-4, A-6	0	0-2	90-100	80-98	60-90	30-70	15-35	5-20
635A:												
Lismod-----	0-15	Silt loam	CL	A-4, A-6	0	0	100	100	97-99	90-98	28-36	9-15
	15-35	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	94-97	85-95	34-44	14-22
	35-39	Loam, clay loam	CL, ML	A-6, A-7-6	0	0-2	95-100	85-98	80-95	60-80	30-43	11-21
	39-80	Loam, sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-98	70-90	45-75	25-30	7-11
635B:												
Lismod-----	0-12	Silt loam	CL	A-4, A-6	0	0	100	100	97-99	90-98	28-36	9-15
	12-32	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	94-97	85-95	34-44	14-22
	32-37	Loam, clay loam	CL, ML	A-6, A-7-6	0	0-2	95-100	85-98	80-95	60-80	30-43	11-21
	37-60	Loam, sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-98	70-90	45-75	25-30	7-11
636B:												
Parmod-----	0-12	Silt loam	CL, ML	A-4, A-6	0	0	95-100	90-100	80-100	65-95	25-35	7-15
	12-34	Clay loam, loam, silty clay loam	CL	A-6, A-7-6	0	0-2	95-100	90-100	75-95	50-85	30-43	11-21
	34-38	Loam	CL	A-4, A-6	0	0-2	90-100	85-98	75-85	50-70	25-35	8-15
	38-60	Loam, sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-3	85-97	80-95	70-85	45-65	20-30	5-11
636C2:												
Parmod-----	0-8	Silt loam	CL, ML	A-4, A-6	0	0	95-100	90-100	80-100	65-95	25-35	7-15
	8-27	Clay loam, loam, silty clay loam	CL	A-6, A-7-6	0	0-2	95-100	90-100	75-95	50-85	30-43	11-21
	27-33	Loam	CL	A-4, A-6	0	0-2	90-100	85-98	75-85	50-70	25-35	8-15
	33-60	Loam, sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-3	85-97	80-95	70-85	45-65	20-30	5-11
667C2:												
Kaneville-----	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	8-41	Silty clay loam, silt loam	CL	A-6, A-7-6,	0	0	100	100	95-100	90-100	25-45	10-30
	41-50	Clay loam, loam, silt loam, sandy loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-3	90-100	85-100	60-90	35-85	20-35	5-20
	50-60	Stratified clay loam to loamy sand	SC-SM, SC, CL-ML, CL	A-2-4, A-4, A-6	0	0-5	90-100	80-98	55-90	20-80	10-25	4-15

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
<b>675A:</b>												
Greenbush-----	0-9	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	100	100	100	95-100	29-41	9-17
	9-16	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	26-39	9-19
	16-46	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	37-47	18-25
	46-60	Silt loam	CL	A-6	0	0	100	100	100	95-100	29-39	12-19
<b>675B:</b>												
Greenbush-----	0-6	Silt loam	CL, ML	A-6, A-7-6	0	0	100	100	100	95-100	31-41	11-17
	6-17	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	26-39	9-19
	17-75	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	37-47	18-25
	75-80	Silt loam	CL	A-6	0	0	100	100	100	95-100	29-39	12-19
<b>728B:</b>												
Winnebago-----	0-15	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	90-100	75-100	25-35	7-15
	15-66	Clay loam, sandy clay loam, loam	CL, ML, SC, SM	A-6, A-7-6	0-1	0-5	85-100	80-95	45-85	35-80	30-44	11-22
	66-74	Sandy loam, loam, gravelly sandy clay loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4, A-6	0-2	0-5	80-100	70-95	35-75	30-70	20-35	5-15
<b>728C2:</b>												
Winnebago-----	0-8	Silt loam	ML, CL	A-4, A-6	0	0	100	95-100	90-100	75-100	25-35	7-15
	8-55	Clay loam, sandy clay loam, loam	CL, ML, SC, SM	A-6, A-7-6	0-1	0-5	85-100	80-95	45-85	35-80	30-44	11-22
	55-60	Sandy loam, loam, gravelly sandy clay loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4, A-6	0-2	0-5	80-100	70-95	35-75	30-70	20-35	5-15
<b>766A:</b>												
Lamartine-----	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-36	8-16
	9-25	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	90-100	85-98	34-44	14-22
	25-39	Clay loam, loam	CL	A-6, A-7-6	0	0-2	95-100	85-100	75-95	50-80	30-43	11-21
	39-60	Loam, sandy loam	CL, SC	A-4, A-6	0	0-3	90-100	80-95	65-90	40-65	25-30	7-11
<b>768C:</b>												
Backbone-----	0-8	Loamy sand	SC-SM, SM	A-2-4, A-1-b	0	0	95-100	90-100	50-90	15-30	15-25	NP-5
	8-11	Loamy sand	SC-SM, SM	A-2-4, A-1-b	0	0	95-100	90-100	50-90	15-30	15-25	NP-5
	11-17	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0-2	95-100	90-95	65-80	20-40	20-28	5-9
	17-25	Clay loam, clay, sandy clay loam, loam	CH, CL, ML, MH	A-6, A-7-6	0	2-5	90-95	85-95	70-80	50-75	35-55	15-30
	25-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
771A:												
Hayfield-----	0-8	Loam	CL	A-4, A-6	0	0	100	100	90-98	60-80	25-35	7-15
	8-14	Loam, silt loam	CL	A-4, A-6	0	0	100	100	90-98	60-80	25-35	7-15
	14-24	Loam, silt loam, clay loam	ML, CL	A-4, A-6	0	0	95-100	90-100	70-90	55-80	26-40	8-19
	24-60	Loamy sand, gravelly coarse sand, sand	SM, SP-SM, SP	A-1-b, A-1-a	0	0-3	85-100	50-98	25-50	0-20	0-15	NP
772A:												
Marshan-----	0-17	Loam	CL	A-4, A-6	0	0	95-100	95-100	85-100	60-80	28-35	9-15
	17-20	Silty clay loam, clay loam, silt loam, loam	CL	A-6, A-7-6	0	0	95-100	95-100	85-100	65-90	35-45	15-23
	20-24	Loam, sandy loam	SC, SM, ML, CL	A-4, A-6	0	0	95-100	80-100	60-90	45-75	27-40	9-19
	24-60	Coarse sand, gravelly coarse sand, sand, loamy sand	SM, SP-SM, SP	A-1-b	0	0-3	80-98	55-95	20-45	2-15	0-15	NP
777A:												
Adrian-----	0-7	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	7-40	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	40-60	Loamy sand, fine sand, sand	SP-SM, SP	A-2-4, A-3	0	0	100	90-100	50-70	0-20	0-14	NP
779B:												
Chelsea-----	0-5	Loamy fine sand	SC-SM, SM, SP-SM	A-2-4, A-3	0	0	100	95-100	80-100	10-30	10-25	NP-5
	5-11	Fine sand, sand, loamy fine sand, loamy sand	SM, SP, SC-SM	A-2-4, A-3	0	0	98-100	95-100	60-80	3-25	7-20	NP-4
	11-33	Fine sand, sand, loamy fine sand, loamy sand	SC-SM, SM, SP	A-2-4, A-3	0	0	98-100	95-100	60-80	3-25	5-20	NP-4
	33-80	Stratified sand to fine sandy loam	SM, SP, SC-SM	A-1-b, A-2-4	0	0	98-100	95-100	45-80	4-35	10-20	NP-4
779D:												
Chelsea-----	0-4	Loamy fine sand	SC-SM, SM, SP-SM	A-2-4, A-3	0	0	100	95-100	80-100	10-30	10-25	NP-5
	4-35	Fine sand, sand, loamy fine sand, loamy sand	SM, SP, SC-SM	A-2-4, A-3	0	0	98-100	95-100	60-80	3-25	7-20	NP-4
	35-60	Stratified sand to fine sandy loam	SM, SP, SC-SM	A-1-b, A-2-4	0	0	98-100	95-100	45-80	4-35	10-20	NP-4

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
780B: Grellton-----	0-7	Sandy loam	SM, SC-SM, ML, CL-ML	A-2-4, A-4	0	0	100	100	60-85	30-55	15-25	1-7
	7-11	Fine sandy loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	100	60-85	30-55	15-25	1-7
	11-22	Loam, sandy loam, sandy clay loam, fine sandy loam	SC, CL	A-4, A-6	0	0	100	100	70-95	40-75	25-40	9-18
	22-36	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	90-100	75-100	25-40	9-18
	36-45	Loam, silt loam, fine sandy loam	ML, SM, CL- ML, SC-SM, SC, CL	A-2-4, A-4, A-6	0	0-5	90-100	80-100	50-100	25-90	15-30	1-11
	45-60	Sandy loam, gravelly sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-1-b, A-2-4, A-4	0	0-10	75-100	55-100	25-100	15-85	15-25	1-7
780C2: Grellton-----	0-5	Sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	100	60-85	30-55	15-25	1-7
	5-23	Loam, sandy loam, sandy clay loam, fine sandy loam	CL, SC	A-4, A-6	0	0	100	100	70-95	40-75	25-40	9-18
	23-47	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	90-100	75-100	25-40	9-18
	47-55	Loam, silt loam, fine sandy loam	CL, ML, SC, SM, CL-ML, SC-SM	A-2-4, A-4, A-6	0	0-5	90-100	80-100	50-100	25-90	15-30	1-11
	55-60	Sandy loam, gravelly sandy loam, silt loam, loam	CL-ML, ML, SC-SM, SM	A-1-b, A-2-4, A-4	0	0-10	75-100	55-100	25-100	15-85	15-25	1-7
781A: Friesland-----	0-14	Fine sandy loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	100	60-85	30-55	15-25	1-7
	14-34	Loam, fine sandy loam, sandy clay loam	CL, SC	A-4, A-6	0	0	100	100	70-95	40-75	25-40	9-18
	34-50	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	90-100	75-100	25-40	9-18
	50-60	Loam, silt loam, sandy loam	CL, ML, SC, SM, CL-ML, SC-SM	A-2-4, A-4, A-6	0	0-5	90-100	80-100	50-100	25-90	15-30	1-11

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
781B: Friesland-----	0-19	Fine sandy loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	100	60-85	30-55	15-25	1-7
	19-35	Loam, fine sandy loam, clay loam	CL, SC	A-4, A-6	0	0	100	100	70-95	40-75	25-40	9-18
	35-45	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	90-100	75-100	25-40	9-18
	45-60	Loam, silt loam, sandy loam	CL, ML, SC, SM, CL-ML, SC-SM	A-2-4, A-4, A-6	0	0-5	90-100	80-100	50-100	25-90	15-30	1-11
782A: Juneau-----	0-9	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	80-95	21-28	4-9
	9-33	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-95	21-28	4-9
	33-51	Silt loam, silty clay loam	CL, ML	A-4, A-6	0	0	100	100	90-100	85-95	23-40	7-19
	51-60	Clay loam, loam	CL, ML	A-4, A-6	0	0	100	100	90-100	70-95	23-40	7-19
783A: Flagler-----	0-23	Sandy loam	SC-SM, SC	A-2-4, A-4	0	0	95-100	90-100	60-70	25-45	20-28	5-10
	23-33	Sandy loam	SC-SM, SC	A-2-4, A-4	0	0	95-100	90-100	50-70	25-40	18-28	4-10
	33-41	Loamy sand, sand, gravelly sand, gravelly loamy sand	SP, SP-SM, SM	A-1-b	0	0-5	75-98	50-95	20-40	3-18	0-20	NP-3
	41-70	Loamy sand, gravelly sand, sand	SP, SP-SM	A-1-b	0	0-5	70-95	50-92	20-40	3-12	0-15	NP
783B: Flagler-----	0-19	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	95-100	90-100	60-70	25-45	20-28	5-10
	19-31	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	95-100	90-100	50-70	25-40	18-28	4-10
	31-35	Loamy sand, sand, gravelly sand, gravelly loamy sand	SP, SP-SM, SM	A-1-b	0	0-5	75-98	50-95	20-40	3-18	0-20	NP-3
	35-60	Loamy sand, gravelly sand, sand	SP, SP-SM	A-1-b	0	0-5	70-95	50-92	20-40	3-12	0-15	NP

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	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, CL-ML	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-a, A-1-b	0-1	1-5	30-85	15-75	10-40	2-15	0-14	NP
802B: Orthents, loamy	0-8	Loam	CL	A-6	0-1	0-5	95-100	85-100	80-95	50-80	20-40	10-20
	8-60	Loam, silt loam, clay loam	CL	A-6	0-1	0-5	95-100	80-100	75-95	50-80	20-40	10-20
864. Pits, quarry												
865. Pits, gravel												
939C2: Rodman-----	0-7	Gravelly loam	CL-ML, ML, SC-SM, SC	A-4	0	0-2	75-95	65-80	60-75	35-65	0-30	3-9
	7-14	Gravelly loam, sandy loam, loam	CL-ML, SM, ML, SC, SC- SM	A-1-b, A-2-4, 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-a	0-1	1-5	30-70	15-50	7-20	2-15	0-14	NP
Warsaw-----	0-9	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	55-75	20-30	4-15
	9-28	Sandy clay loam, loam, clay loam	CL, ML, SC, SM	A-2-6, A-4, A-6	0	0-3	90-100	85-100	60-90	30-80	25-40	8-20
	28-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-85	15-80	7-20	2-15	0-15	NP

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
939D2: Rodman-----	0-7	Gravelly loam	CL-ML, ML, SC-SM, SC	A-4	0	0-2	75-95	65-80	60-75	35-65	0-30	3-9
	7-13	Gravelly loam, sandy loam, loam	CL-ML, SM, ML, SC, SC- SM	A-1-b, A-2-4, A-4	0	0-2	70-95	50-80	40-75	20-55	0-30	NP-10
	13-60	Stratified very gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-1	1-5	30-70	15-50	7-20	2-15	0-14	NP
Warsaw-----	0-7	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	55-75	20-30	4-15
	7-27	Sandy clay loam, loam, clay loam	CL, ML, SC, SM	A-2-6, A-4, A-6	0	0-3	90-100	85-100	60-90	30-80	25-40	8-20
	27-60	Stratified loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-85	15-80	7-20	2-15	0-15	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	Clay loam, sandy clay loam, gravelly loam	CL, ML, GC, SC	A-2-6, A-6, A-7-6	0-1	0-5	65-100	50-100	40-90	30-80	25-46	11-26
	19-60	Stratified sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b, A-3	0-3	0-30	25-100	15-85	10-75	2-10	0-14	NP
Rodman-----	0-6	Gravelly loam	CL-ML, ML, SC-SM, SC	A-4	0	0-2	75-95	65-80	60-75	35-65	0-30	3-9
	6-10	Gravelly loam, sandy loam, loam	CL-ML, SM, ML, SC, SC- SM	A-1-b, A-2-4, 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-a	0-1	1-5	30-70	15-50	7-20	2-15	0-14	NP
1082A: Millington-----	0-21	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	95-100	90-100	80-100	70-95	25-35	5-20
	21-37	Loam, silt loam, clay loam	CL, ML	A-6, A-7-6	0	0	95-100	80-100	75-100	65-90	28-50	10-22
	37-60	Stratified sandy loam to silty clay loam	CL, ML	A-4, A-7-6, A-6	0	0	90-100	80-100	60-95	40-85	20-45	5-20

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
1100A:												
Palms-----	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	NP
	14-35	Muck	PT	A-8	0	0	---	---	---	---	---	NP
	35-60	Loam, silty clay loam, gravelly sandy loam	CL, CL-ML, ML, SC	A-4, A-6, A- 7-6	0	0	90-100	75-100	65-95	45-90	18-45	3-20
1103A:												
Houghton-----	0-12	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	12-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
1776A:												
Comfrey, frequently flooded-----	0-7	Loam	CL, ML, MH	A-6, A-7-5, A-7-6	0	0	100	100	85-100	55-85	38-51	11-18
	7-26	Clay loam, loam	CL, ML, MH	A-6, A-7-5, A-7-6	0	0	100	100	85-100	55-85	33-55	12-25
	26-37	Clay loam, loam, silty clay loam	CL, ML	A-6, A-7-6	0	0	95-100	90-100	80-100	55-85	31-50	12-25
	37-63	Clay loam, loam, sandy loam	CL, ML, SC, SM	A-4, A-6, A- 7-6	0	0	90-100	80-100	70-95	45-85	27-46	10-23
Comfrey, occasionally flooded-----	0-8	Loam	CL, ML, MH	A-6, A-7-5, A-7-6	0	0	100	100	85-100	55-85	38-51	11-18
	8-29	Clay loam, loam	CL, ML, MH	A-6, A-7-5, A-7-6	0	0	100	100	85-100	55-85	33-55	12-25
	29-49	Clay loam, loam, silty clay loam	CL, ML	A-6, A-7-6	0	0	95-100	90-100	80-100	55-85	31-50	12-25
	49-65	Clay loam, loam, sandy loam	CL, ML, SC, SM	A-4, A-6, A- 7-6	0	0	90-100	80-100	70-95	45-85	27-46	10-23
1777A:												
Adrian-----	0-16	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	16-34	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	34-60	Loamy sand, fine sand, sand	SP, SP-SM	A-2-4, A-3	0	0	100	90-100	50-70	0-20	0-14	NP

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
<b>3082A:</b>												
Millington-----	0-26	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	80-100	70-95	25-35	5-20
	26-53	Loam, silt loam, clay loam	ML, CL	A-6, A-7-6	0	0	95-100	80-100	75-100	65-90	28-50	10-22
	53-60	Stratified sandy loam to silty clay loam	ML, CL	A-4, A-7-6, A-6	0	0	90-100	80-100	60-95	40-85	20-45	5-20
<b>3107A:</b>												
Sawmill-----	0-10	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	10-32	Silty clay loam	CL	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	32-58	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	58-65	Silty clay loam, clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
<b>3415A:</b>												
Orion-----	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	80-100	25-35	4-12
	7-22	Stratified very fine sand to silt loam	CL-ML, CL	A-4	0	0	100	100	90-100	70-80	20-30	4-10
	22-60	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	85-100	85-100	20-40	4-18
<b>3776A:</b>												
Comfrey-----	0-7	Loam	CL, ML, MH	A-6, A-7-5, A-7-6	0	0	100	100	85-100	55-85	38-51	11-18
	7-26	Clay loam, loam	CL, ML, MH	A-6, A-7-5, A-7-6	0	0	100	100	85-100	55-85	33-55	12-25
	26-37	Clay loam, loam, silty clay loam	CL, ML	A-6, A-7-6	0	0	95-100	90-100	80-100	55-85	31-50	12-25
	37-63	Clay loam, loam, sandy loam	CL, ML, SC, SM	A-4, A-6, A- 7-6	0	0	90-100	80-100	70-95	45-85	27-46	10-23
<b>3800A:</b>												
Psammets-----	0-60	Sand, loamy sand	SP-SM, SP, SM	A-3, A-2-4, A-1-b	0	0	85-100	85-100	50-75	2-30	0-14	NP
	60-80	Sand, fine sand	SP-SM, SP, SM	A-3, A-2-4, A-1-b	0	0	85-100	85-100	50-75	2-30	0-9	NP
<b>8082A:</b>												
Millington-----	0-26	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	95-100	90-100	80-100	70-95	25-35	5-20
	26-36	Loam, silt loam, clay loam	ML, CL	A-6, A-7-6	0	0	95-100	80-100	75-100	65-90	28-50	10-22
	36-62	Stratified sandy loam to silty clay loam	ML, CL	A-4, A-7-6, A-6	0	0	90-100	80-100	60-95	40-85	20-45	5-20

Table 21.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
8776A: Comfrey-----	0-8	Loam	CL, ML, MH	A-6, A-7-5, A-7-6	0	0	100	100	85-100	55-85	38-51	11-18
	8-29	Clay loam, loam	CL, ML, MH	A-6, A-7-5, A-7-6	0	0	100	100	85-100	55-85	33-55	12-25
	29-49	Clay loam, loam, silty clay loam	CL, ML	A-6, A-7-6	0	0	95-100	90-100	80-100	55-85	31-50	12-25
	49-65	Clay loam, loam, sandy loam	CL, ML, SC, SM	A-4, A-6, A- 7-6	0	0	90-100	80-100	70-95	45-85	27-46	10-23
8782A: Juneau-----	0-8	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	80-95	21-28	4-9
	8-24	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-95	21-28	4-9
	24-35	Silt loam, silty clay loam	CL, ML	A-4, A-6	0	0	100	100	90-100	85-95	23-40	7-19
	35-60	Clay loam, loam	CL, ML	A-4, A-6	0	0	100	100	90-100	70-95	23-40	7-19
9061A: Atterberry-----	0-9	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-16
	9-17	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	7-18
	17-48	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	95-100	95-100	37-46	16-25
	48-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	95-100	24-37	7-18
9068A: Sable-----	0-19	Silty clay loam	CH, CL	A-6, A-7-6	0	0	100	100	98-100	95-100	30-55	15-30
	19-23	Silty clay loam	CH, CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-60	15-35
	23-47	Silty clay loam silt loam	CH, CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-55	15-35
	47-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	98-100	95-100	25-40	10-20
9278A: Stronghurst-----	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	7-11	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	11-47	Silty clay loam, silt loam	CH, CL	A-7, A-7-6	0	0	100	100	100	98-100	40-55	20-35
	47-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-40	5-20

Table 22.--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			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
<b>21B:</b>														
Pecatonica-----	0-3	0-7	66-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	3-10	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.49	.49			
	10-18	1-7	66-81	18-31	1.20-1.60	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.43	.43			
	18-26	25-58	15-40	27-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.28	.28			
	26-68	25-65	17-40	18-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.28			
	68-80	23-65	20-50	15-27	1.45-1.65	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.28			
<b>21C2:</b>														
Pecatonica-----	0-7	0-7	68-82	18-25	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-19	0-7	63-80	20-30	1.30-1.50	0.6-2	0.18-0.22	0.0-2.9	0.5-1.0	.43	.43			
	19-60	20-65	10-60	25-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.28	.28			
<b>22B:</b>														
Westville-----	0-8	2-30	50-83	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	8-61	20-55	20-45	25-35	1.35-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	61-72	30-70	15-45	15-22	1.40-1.70	0.6-2	0.07-0.15	0.0-2.9	0.0-0.5	.24	.24			
<b>22C2:</b>														
Westville-----	0-9	2-30	50-83	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	9-54	20-55	20-45	25-35	1.35-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	54-60	30-70	15-45	15-22	1.40-1.70	0.6-2	0.07-0.15	0.0-2.9	0.0-0.5	.24	.24			
<b>22D2:</b>														
Westville-----	0-5	2-30	50-83	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-54	20-55	20-45	25-35	1.35-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	54-60	30-70	15-45	15-22	1.40-1.70	0.6-2	0.07-0.15	0.0-2.9	0.0-0.5	.24	.24			
<b>51A:</b>														
Muscataune-----	0-16	2-7	66-74	24-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	16-22	2-7	58-73	25-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	22-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	46-60	2-7	66-83	15-30	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.2	.49	.49			
<b>59A:</b>														
Lisbon-----	0-11	0-15	58-80	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	0-15	50-75	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	20-45	21-53	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	0.0-0.5	.37	.37			

Table 22.--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					
<b>61A:</b>														
Atterberry-----	0-9	2-7	68-78	15-27	1.25-1.45	0.6-2	0.19-0.26	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-17	2-7	69-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.1-1.0	.43	.43			
	17-48	2-7	60-73	25-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	48-60	2-7	66-80	15-27	1.30-1.50	0.6-2	0.17-0.22	0.0-2.9	0.1-0.5	.49	.49			
<b>62A:</b>														
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	20-45	20-50	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			
<b>68A:</b>														
Sable-----	0-19	0-7	58-73	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	5.0-6.0	.24	.24	5	6	48
	19-23	0-7	58-73	27-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	2.0-4.0	.28	.28			
	23-47	0-7	58-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	47-60	0-7	65-80	20-28	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
<b>68A+:</b>														
Sable-----	0-13	0-7	66-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	13-24	0-7	58-73	27-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	4.0-6.0	.24	.24			
	24-50	0-7	58-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	50-60	0-7	66-80	20-28	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
<b>86A:</b>														
Oscosco-----	0-13	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	13-38	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	38-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
<b>86B:</b>														
Oscosco-----	0-14	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	14-55	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	55-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
<b>87A:</b>														
Dickinson-----	0-18	52-65	17-35	10-18	1.50-1.55	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.15	.15	4	3	86
	18-26	55-80	5-35	10-18	1.45-1.55	2-6	0.12-0.17	0.0-2.9	0.5-1.0	.24	.24			
	26-38	78-92	0-18	4-10	1.55-1.65	6-20	0.08-0.11	0.0-2.9	0.0-0.5	.10	.10			
	38-60	80-96	0-15	2-8	1.60-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
<b>100A:</b>														
Palms-----	0-6	---	---	---	0.30-0.40	0.2-6	0.35-0.45	---	75-99	---	---	2	2	134
	6-32	---	---	---	0.15-0.30	0.2-6	0.35-0.45	---	75-99	---	---			
	32-60	10-55	20-80	7-35	1.45-1.75	0.2-2	0.14-0.22	0.0-2.9	0.5-6.0	.32	.32			

Table 22.--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					
102A:														
La Hogue-----	0-16	25-45	28-55	15-27	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	5	6	48
	16-32	20-60	5-55	20-35	1.50-1.70	0.6-2	0.12-0.20	3.0-5.9	0.5-2.0	.32	.32			
	32-48	30-80	0-55	10-22	1.55-1.75	0.6-2	0.08-0.20	0.0-2.9	0.2-1.0	.28	.28			
	48-60	30-85	0-65	5-20	1.60-1.80	0.6-6	0.05-0.20	0.0-2.9	0.0-0.5	.24	.24			
103A:														
Houghton-----	0-11	---	---	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	3	2	134
	11-60	---	---	---	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			
119B:														
Elco-----	0-6	0-7	66-80	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	6-10	0-7	68-85	15-25	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	0.2-1.0	.49	.49			
	10-28	0-7	58-77	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-32	10-35	30-67	23-35	1.40-1.60	0.2-0.6	0.16-0.20	3.0-5.9	0.0-0.2	.32	.32			
	32-60	15-35	20-60	25-45	1.45-1.70	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.2	.28	.28			
125A:														
Selma-----	0-6	20-45	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	6	48
	6-13	20-45	20-53	27-35	1.40-1.60	0.6-2	0.17-0.19	3.0-5.9	3.0-5.0	.17	.17			
	13-44	15-62	6-67	18-32	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-2.0	.32	.32			
	44-80	30-90	0-63	7-18	1.60-1.90	2-6	0.07-0.19	0.0-2.9	0.0-1.0	.24	.24			
134A:														
Camden-----	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
	9-14	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			
	14-29	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			
	29-60	15-70	5-67	18-30	1.45-1.65	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	60-71	30-85	0-65	5-20	1.55-1.70	0.6-6	0.07-0.17	0.0-2.9	0.0-0.5	.28	.28			
146A:														
Elliott-----	0-6	2-15	58-78	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.24	.24	4	6	48
	6-11	2-15	50-71	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	2.5-4.0	.20	.20			
	11-16	1-20	30-61	40-50	1.40-1.60	0.06-0.6	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	16-41	5-20	40-65	27-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	41-60	5-20	45-65	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			

Table 22.--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					
<b>148A:</b>														
Proctor-----	0-11	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
	11-27	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			
	27-44	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			
	44-73	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			
<b>148B:</b>														
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			
<b>149A:</b>														
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	0.5-1.5	.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			
<b>152A:</b>														
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	6	48
	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			
<b>152A+:</b>														
Drummer-----	0-16	0-7	66-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	16-30	0-15	50-73	27-35	1.10-1.30	0.6-2	0.21-0.23	0.0-2.9	5.0-7.0	.24	.24			
	30-57	0-15	50-80	20-35	1.20-1.45	0.6-2	0.21-0.24	3.0-5.9	0.0-1.0	.37	.37			
	57-63	15-55	12-70	15-33	1.30-1.55	0.6-2	0.17-0.20	3.0-5.9	0.0-0.5	.32	.32			
	63-80	15-80	0-75	10-32	1.40-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.28			
<b>153A:</b>														
Pella-----	0-12	0-15	50-73	27-35	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-6.0	.24	.24	5	6	48
	12-33	0-15	50-73	27-35	1.20-1.45	0.6-2	0.21-0.24	3.0-5.9	0.5-2.0	.37	.37			
	33-42	10-55	15-75	15-30	1.35-1.60	0.6-2	0.15-0.20	3.0-5.9	0.2-0.5	.32	.32			
	42-60	15-80	0-75	10-30	1.40-1.70	0.6-6	0.10-0.22	0.0-2.9	0.0-0.2	.28	.28			
<b>172A:</b>														
Hoopeston-----	0-14	52-75	7-40	8-18	1.35-1.70	2-6	0.12-0.15	0.0-2.9	2.0-3.0	.15	.15	4	3	86
	14-38	50-75	7-40	10-18	1.45-1.70	2-6	0.12-0.17	0.0-2.9	0.2-1.0	.24	.24			
	38-60	72-98	0-28	1-10	1.50-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			

Table 22.--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					
<b>188A:</b>														
Beardstown-----	0-9	30-50	20-50	15-27	1.35-1.55	0.6-2	0.16-0.25	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	9-14	30-50	20-50	15-27	1.25-1.40	0.6-2	0.17-0.22	0.0-2.9	0.0-1.0	.37	.37			
	14-41	30-50	25-55	18-30	1.40-1.60	0.2-2	0.15-0.19	0.0-2.9	0.0-1.0	.32	.32			
	41-60	70-95	1-15	5-15	1.40-1.65	2-6	0.08-0.17	0.0-2.9	0.0-0.5	.15	.15			
<b>197A:</b>														
Troxel-----	0-8	2-15	58-80	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	8-33	2-15	58-80	18-27	1.30-1.50	0.6-2	0.21-0.23	0.0-2.9	1.0-3.0	.32	.32			
	33-55	2-20	50-73	25-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	55-80	15-60	5-70	15-35	1.40-1.65	0.6-2	0.11-0.20	3.0-5.9	0.1-0.5	.28	.32			
<b>198A:</b>														
Elburn-----	0-16	2-7	66-76	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	16-49	2-7	58-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	49-58	30-55	30-55	15-20	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	0.1-0.5	.37	.37			
	58-62	60-80	10-25	5-15	1.50-1.70	2-6	0.06-0.10	0.0-2.9	0.1-0.5	.24	.24			
<b>199A:</b>														
Plano-----	0-14	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	14-49	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	49-60	15-70	0-70	15-32	1.30-1.55	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.32	.32			
	60-72	15-80	0-80	5-20	1.50-1.70	2-6	0.11-0.22	0.0-2.9	0.1-0.5	.28	.28			
<b>199B:</b>														
Plano-----	0-15	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	15-45	0-10	55-80	20-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.37	.37			
	45-55	20-55	30-50	15-30	1.50-1.70	0.6-6	0.11-0.16	0.0-2.9	0.1-0.5	.32	.32			
	55-72	45-70	18-43	10-25	1.50-1.70	2-6	0.11-0.15	0.0-2.9	0.1-0.5	.28	.28			
<b>199C2:</b>														
Plano-----	0-8	0-10	63-82	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
	8-41	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	41-53	15-70	0-70	15-32	1.30-1.55	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.32	.32			
	53-60	45-65	18-43	10-20	1.50-1.70	2-6	0.11-0.22	0.0-2.9	0.1-0.5	.28	.28			
<b>206A:</b>														
Thorp-----	0-14	0-10	63-80	20-27	1.15-1.35	0.6-2	0.16-0.22	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	0.16-0.22	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	0.13-0.19	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	0.10-0.20	0.0-5.9	0.2-0.5	.32	.32			
	50-65	50-75	10-40	5-20	1.50-1.70	0.6-6	0.05-0.13	0.0-2.9	0.0-0.1	.24	.24			

Table 22.--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					
<b>219A:</b>														
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			
<b>221B:</b>														
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	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
<b>221C2:</b>														
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	.28	.28	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	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
<b>223B:</b>														
Varna-----	0-12	5-20	53-75	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.5-4.0	.24	.24	4	6	48
	12-30	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	30-48	5-20	30-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	48-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
<b>227B:</b>														
Argyle-----	0-7	1-15	65-72	20-27	1.25-1.45	0.6-2	0.23-0.25	0.0-2.9	3.0-4.0	.37	.37	5	6	48
	7-13	5-20	65-74	15-26	1.30-1.50	0.6-2	0.21-0.24	0.0-2.9	0.5-1.0	.43	.43			
	13-25	0-15	58-65	27-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	25-70	25-65	10-40	25-35	1.40-1.60	0.6-2	0.05-0.18	0.0-2.9	0.0-0.5	.24	.28			
	70-84	35-85	1-35	5-30	1.45-1.70	0.6-2	0.15-0.18	0.0-2.9	0.0-0.5	.24	.24			
<b>242A:</b>														
Kendall-----	0-7	0-10	65-86	14-25	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-11	0-10	65-86	14-25	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	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	51-58	30-50	33-50	15-27	1.45-1.55	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.32			
	58-74	30-55	25-50	10-20	1.55-1.75	0.6-2	0.11-0.15	0.0-2.9	0.1-0.3	.32	.32			
<b>243A:</b>														
St. Charles-----	0-9	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	5	56
	9-51	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	51-60	30-65	33-50	15-30	1.30-1.50	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			

Table 22.--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					
243B:														
St. Charles-----	0-8	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-50	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	50-60	30-50	33-50	15-30	1.30-1.50	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			
243C2:														
St. Charles-----	0-8	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	8-41	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	41-60	30-50	33-50	15-30	1.30-1.50	0.6-2	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			
278A:														
Stronghurst-----	0-7	1-5	66-85	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-11	1-5	65-82	18-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.49	.49			
	11-47	1-4	58-78	22-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	47-60	1-4	66-80	20-27	1.35-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
279A:														
Rozetta-----	0-4	0-7	66-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	4-11	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.49	.49			
	11-50	0-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	50-60	0-7	63-80	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
280B:														
Fayette-----	0-9	0-7	66-85	15-27	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-39	0-7	58-75	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	39-60	0-7	67-78	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
280C2:														
Fayette-----	0-8	0-7	66-75	25-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	8-64	0-7	58-75	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	64-80	0-7	67-78	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
290A:														
Warsaw-----	0-15	27-45	30-50	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	27-45	30-50	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			
290C2:														
Warsaw-----	0-9	27-45	30-50	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	4	5	56
	9-28	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			
	28-60	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			

Table 22.--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					
<b>290D2:</b>														
Warsaw-----	0-7	27-45	30-50	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	4	5	56
	7-27	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			
	27-60	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			
<b>293A:</b>														
Andres-----	0-11	10-30	50-70	20-27	1.35-1.55	0.6-2	0.17-0.21	0.0-2.9	3.5-5.0	.24	.24	5	6	48
	11-36	15-50	15-58	24-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.32			
	36-50	5-20	45-68	27-35	1.55-1.75	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	50-60	5-20	45-73	22-35	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
<b>297B:</b>														
Ringwood-----	0-12	10-25	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	6	48
	12-20	5-25	45-73	22-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.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			
	36-40	45-65	17-47	8-18	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.2-0.5	.24	.24			
	40-60	50-70	15-45	5-15	1.50-1.75	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
<b>297C2:</b>														
Ringwood-----	0-8	10-25	50-72	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	8-19	5-25	45-73	22-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.32	.32			
	19-38	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			
	38-60	50-70	15-45	5-15	1.50-1.75	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
<b>297D2:</b>														
Ringwood-----	0-8	10-25	50-72	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	8-16	5-25	45-73	22-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.32	.32			
	16-32	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			
	32-60	50-70	15-45	5-15	1.50-1.75	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
<b>310B:</b>														
McHenry-----	0-5	10-30	50-80	10-22	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-10	10-30	50-80	10-22	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	0.5-1.5	.37	.37			
	10-22	5-25	45-73	22-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.32	.32			
	22-32	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			
	32-37	45-65	17-47	8-18	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.2-0.5	.24	.24			
	37-60	55-70	15-45	5-15	1.50-1.75	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
<b>310C2:</b>														
McHenry-----	0-10	10-30	50-80	10-22	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	10-19	5-25	45-73	22-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.32	.32			
	19-30	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			
	30-36	45-65	17-47	8-18	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.2-0.5	.24	.24			
	36-60	55-70	15-45	5-15	1.50-1.75	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			

Table 22.--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					
310D2:														
McHenry-----	0-7	10-30	50-80	10-22	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	7-18	5-25	45-73	22-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.32	.32			
	18-28	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			
	28-33	45-65	17-47	8-18	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.2-0.5	.24	.24			
	33-60	55-70	15-45	5-15	1.50-1.75	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
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	20-70	25-35	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			
327B:														
Fox-----	0-7	5-30	50-80	15-25	1.30-1.50	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	1.50-1.65	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	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
327C2:														
Fox-----	0-9	5-30	50-80	15-25	1.30-1.50	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	1.50-1.65	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	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
327D2:														
Fox-----	0-8	25-45	30-50	15-25	1.35-1.55	0.6-2	0.15-0.22	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	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
329A:														
Will-----	0-14	20-50	28-50	20-27	1.25-1.40	0.6-2	0.15-0.20	0.0-2.9	4.0-6.0	.24	.24	4	6	48
	14-25	15-50	20-58	23-33	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.5-2.0	.32	.32			
	25-28	30-70	5-50	12-25	1.40-1.60	0.6-6	0.10-0.18	0.0-2.9	0.2-1.0	.28	.28			
	28-60	90-99	0-10	0-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			

Table 22.--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		
332A:														
Billett-----	0-8	52-75	10-41	7-15	1.45-1.65	2-6	0.14-0.16	0.0-2.9	1.0-2.0	.17	.17	4	3	86
	8-13	52-75	10-41	7-15	1.50-1.70	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.24	.24			
	13-28	55-80	5-35	10-18	1.40-1.70	2-6	0.10-0.15	0.0-2.9	0.0-1.0	.24	.24			
	28-47	60-85	0-30	8-18	1.50-1.70	2-6	0.05-0.12	0.0-2.9	0.0-0.5	.17	.17			
	47-60	80-95	0-25	2-7	1.60-1.70	6-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.05			
332B:														
Billett-----	0-8	52-75	10-41	7-15	1.45-1.65	2-6	0.14-0.16	0.0-2.9	1.0-2.0	.17	.17	4	3	86
	8-29	55-80	5-35	10-18	1.40-1.70	2-6	0.10-0.15	0.0-2.9	0.0-1.0	.24	.24			
	29-38	60-85	0-30	8-18	1.50-1.70	2-6	0.05-0.12	0.0-2.9	0.0-0.5	.17	.17			
	38-60	80-95	0-25	2-7	1.60-1.70	6-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.05			
343A:														
Kane-----	0-5	5-25	50-77	18-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	6	48
	5-12	5-20	45-68	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	2.5-4.0	.20	.20			
	12-22	5-35	30-70	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.5-1.5	.32	.32			
	22-29	30-60	10-50	15-30	1.40-1.60	0.6-2	0.12-0.18	3.0-5.9	0.2-1.0	.32	.32			
	29-60	85-99	0-14	1-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
344A:														
Harvard-----	0-9	0-15	58-80	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-36	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			
	36-56	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			
	56-60	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			
344B:														
Harvard-----	0-9	0-15	58-80	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-30	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			
	30-56	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			
	56-69	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			
354A:														
Hononegah-----	0-19	78-89	0-19	3-12	1.60-1.70	20-100	0.06-0.10	0.0-2.9	1.0-2.0	.02	.02	4	2	134
	19-24	77-95	0-17	6-15	1.60-1.70	20-100	0.03-0.09	0.0-2.9	0.2-0.5	.10	.10			
	24-60	80-99	0-18	2-7	1.60-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
354B:														
Hononegah-----	0-15	78-89	0-19	3-12	1.60-1.70	20-100	0.06-0.10	0.0-2.9	1.0-2.0	.02	.02	4	2	134
	15-22	77-95	0-17	6-15	1.60-1.70	20-100	0.03-0.09	0.0-2.9	0.2-0.5	.10	.10			
	22-60	80-99	0-18	2-7	1.60-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			

Table 22.--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					
361B: Kidder-----	0-9	25-50	28-50	10-25	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	9-31	25-65	5-50	20-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	31-34	45-70	17-47	8-18	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.2-0.5	.24	.24			
	34-60	55-75	0-44	6-15	1.45-1.65	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
361C2: Kidder-----	0-8	25-50	28-50	10-25	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	8-30	25-65	5-50	20-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	30-41	45-70	17-47	8-18	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.2-0.5	.24	.24			
	41-60	55-75	0-44	6-15	1.45-1.65	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
361D2: Kidder-----	0-7	25-50	28-50	10-25	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	7-23	25-65	5-50	20-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	23-27	45-70	17-47	8-18	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.2-0.5	.24	.24			
	27-60	55-75	0-44	6-15	1.45-1.65	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
361D3: Kidder-----	0-7	20-45	23-52	27-32	1.40-1.60	0.6-2	0.13-0.19	3.0-5.9	0.5-1.0	.32	.32	4	6	48
	7-23	25-65	5-50	20-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	23-60	55-75	0-44	6-15	1.45-1.65	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
361E2: Kidder-----	0-8	25-50	28-50	10-25	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	8-29	25-65	5-50	20-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	29-60	55-75	0-44	6-15	1.45-1.65	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
363C2: Griswold-----	0-10	25-50	28-50	15-25	1.10-1.30	0.6-2	0.16-0.22	0.0-2.9	2.0-4.0	.28	.28	5	5	56
	10-24	20-60	10-52	20-32	1.20-1.40	0.6-2	0.14-0.19	0.0-2.9	0.2-1.0	.32	.32			
	24-27	40-70	10-50	10-20	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.1-0.5	.24	.24			
	27-60	50-75	10-45	5-15	1.45-1.65	0.6-6	0.11-0.13	0.0-2.9	0.0-0.5	.20	.24			
363D2: Griswold-----	0-8	25-50	28-50	15-25	1.10-1.30	0.6-2	0.16-0.22	0.0-2.9	2.0-4.0	.28	.28	5	5	56
	8-23	20-60	10-52	20-32	1.20-1.40	0.6-2	0.14-0.19	0.0-2.9	0.2-1.0	.32	.32			
	23-27	40-70	10-50	10-20	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.1-0.5	.24	.24			
	27-60	50-75	10-45	5-15	1.45-1.65	0.6-6	0.11-0.13	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	10-30	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			

Table 22.--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					
379A:														
Dakota-----	0-11	25-50	28-50	14-27	1.40-1.50	0.6-2	0.20-0.22	0.0-2.9	3.0-5.0	.24	.24	4	6	48
	11-30	20-65	10-52	18-32	1.30-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
	30-34	55-85	5-40	4-11	1.55-1.65	2-6	0.06-0.14	0.0-2.9	0.0-0.5	.20	.20			
	34-60	75-99	0-24	1-4	1.55-1.65	6-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.05			
387A:														
Ockley-----	0-9	10-37	50-68	11-22	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	0.5-3.0	.32	.32	4	5	56
	9-31	8-30	35-57	20-35	1.45-1.60	0.6-2	0.15-0.22	3.0-5.9	0.0-0.5	.32	.32			
	31-57	40-70	10-30	20-32	1.40-1.55	0.6-2	0.06-0.11	3.0-5.9	0.0-0.5	.28	.32			
	57-60	85-98	1-15	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
387B:														
Ockley-----	0-9	10-37	50-68	11-22	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	0.5-3.0	.32	.32	4	5	56
	9-31	8-30	35-57	20-35	1.45-1.60	0.6-2	0.15-0.22	3.0-5.9	0.0-0.5	.32	.32			
	31-55	40-70	10-30	20-32	1.40-1.55	0.6-2	0.06-0.11	3.0-5.9	0.0-0.5	.28	.32			
	55-60	85-98	1-15	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
403E:														
Elizabeth-----	0-6	5-30	52-68	18-27	1.15-1.25	0.6-2	0.18-0.24	0.0-2.9	3.0-5.0	.24	.24	1	4L	86
	6-10	5-40	30-68	18-35	1.25-1.45	0.6-2	0.16-0.23	3.0-5.9	1.0-3.0	.20	.24			
	10-19	5-40	30-77	18-35	1.30-1.50	0.6-2	0.02-0.10	0.0-2.9	1.0-2.0	.17	.24			
	19-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
412B:														
Ogle-----	0-11	0-7	60-85	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	11-33	0-7	50-75	25-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	33-80	15-50	20-55	27-35	1.45-1.65	0.6-2	0.07-0.10	3.0-5.9	0.0-0.5	.28	.28			
419A:														
Flagg-----	0-8	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-11	0-10	55-80	15-26	1.25-1.40	0.6-2	0.21-0.23	0.0-2.9	0.0-0.5	.49	.49			
	11-38	0-15	50-70	25-35	1.30-1.50	0.6-2	0.14-0.20	3.0-5.9	0.0-0.5	.37	.37			
	38-60	15-58	20-50	22-35	1.45-1.60	0.6-2	0.07-0.10	0.0-2.9	0.0-0.2	.28	.28			
419B:														
Flagg-----	0-4	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	4-11	0-10	55-80	15-26	1.25-1.40	0.6-2	0.21-0.23	0.0-2.9	0.0-0.5	.49	.49			
	11-48	0-15	50-70	25-35	1.30-1.50	0.6-2	0.14-0.20	3.0-5.9	0.0-0.5	.37	.37			
	48-72	15-58	20-50	22-35	1.45-1.60	0.6-2	0.07-0.10	0.0-2.9	0.0-0.2	.28	.28			
419C2:														
Flagg-----	0-7	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.8-2.5	.43	.43	5	6	48
	7-33	0-15	50-70	25-35	1.30-1.50	0.6-2	0.14-0.20	3.0-5.9	0.0-0.5	.37	.37			
	33-60	15-58	20-50	22-35	1.45-1.60	0.6-2	0.07-0.10	0.0-2.9	0.0-0.2	.28	.28			

Table 22.--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					
<b>440A:</b>														
Jasper-----	0-18	10-30	50-75	12-25	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	5	5	56
	18-37	15-55	20-65	20-32	1.35-1.50	0.6-2	0.17-0.19	3.0-5.9	0.5-1.5	.32	.32			
	37-44	45-65	10-43	12-25	1.40-1.60	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.28	.28			
	44-60	25-80	10-65	5-20	1.50-1.70	0.6-6	0.10-0.21	0.0-2.9	0.0-0.5	.24	.24			
<b>440B:</b>														
Jasper-----	0-14	10-30	50-75	12-25	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	5	5	56
	14-43	15-55	20-65	20-32	1.35-1.50	0.6-2	0.17-0.19	3.0-5.9	0.5-1.5	.32	.32			
	43-52	45-65	10-43	12-25	1.40-1.60	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.28	.28			
	52-60	25-80	10-65	5-20	1.50-1.70	0.6-6	0.10-0.21	0.0-2.9	0.0-0.5	.24	.24			
<b>440C2:</b>														
Jasper-----	0-9	10-30	50-75	12-25	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	5	5	56
	9-29	15-55	20-65	20-32	1.35-1.50	0.6-2	0.17-0.19	3.0-5.9	0.5-1.5	.32	.32			
	29-37	45-65	10-43	12-25	1.40-1.60	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.28	.28			
	37-60	25-80	10-65	5-20	1.50-1.70	0.6-6	0.10-0.21	0.0-2.9	0.0-0.5	.24	.24			
<b>490A:</b>														
Odell-----	0-15	5-20	53-75	18-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	3.0-4.0	.24	.24	4	6	48
	15-20	5-30	35-68	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.5-1.5	.32	.32			
	20-29	20-45	25-50	25-35	1.50-1.70	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	29-40	30-50	28-50	12-25	1.55-1.70	0.2-0.6	0.08-0.15	0.0-2.9	0.0-1.0	.32	.32			
	40-60	30-50	30-50	10-20	1.60-1.80	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
<b>503B:</b>														
Rockton-----	0-11	15-35	40-65	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.24	.24	2	6	48
	11-31	20-50	20-55	25-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-1.5	.32	.32			
	31-35	10-35	10-55	35-60	1.35-1.45	0.06-0.6	0.09-0.15	6.0-8.9	0.0-0.5	.20	.20			
	35-60	---	---	---	---	2-20	---	---	---	---	---			
<b>505D2:</b>														
Dunbarton-----	0-7	0-30	50-70	15-27	1.10-1.60	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	1	6	48
	7-14	0-25	45-65	24-40	1.05-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.32	.32			
	14-18	0-20	20-50	40-80	1.25-1.55	0.2-0.6	0.09-0.13	6.0-8.9	0.0-0.3	.20	.20			
	18-60	---	---	---	---	0.06-2	---	---	---	---	---			
<b>505E2:</b>														
Dunbarton-----	0-5	0-30	50-70	15-27	1.10-1.60	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	1	6	48
	5-10	0-25	45-65	24-40	1.05-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.32	.32			
	10-17	0-20	20-50	40-80	1.25-1.55	0.2-0.6	0.09-0.13	6.0-8.9	0.0-0.3	.20	.20			
	17-60	---	---	---	---	0.06-2	---	---	---	---	---			

Table 22.--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					
506B:														
Hitt-----	0-14	0-10	65-75	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	3	6	48
	14-18	0-20	53-65	27-35	1.20-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	18-41	20-50	23-55	27-37	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.4	.32	.32			
	41-45	0-20	20-45	55-70	1.30-1.55	0.06-0.2	0.08-0.12	3.0-5.9	0.0-0.2	.20	.20			
	45-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
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	.37	.37	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	6	48
	12-35	5-20	45-72	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	0.6-6	0.15-0.20	3.0-5.9	0.1-0.5	.32	.32			
	44-60	75-98	0-20	1-10	1.60-1.80	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	45-78	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	0.6-6	0.15-0.20	3.0-5.9	0.1-0.5	.32	.32			
	39-60	75-98	0-20	1-10	1.60-1.80	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			

Table 22.--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					
527C2:														
Kidami-----	0-9	20-45	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			
527D2:														
Kidami-----	0-10	20-45	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			
528A:														
Lahoguess-----	0-14	25-45	28-50	15-27	1.35-1.50	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	6	48
	14-38	20-50	25-52	20-32	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
	38-46	40-80	5-45	5-20	1.50-1.70	0.6-6	0.08-0.19	0.0-2.9	0.0-0.5	.28	.28			
	46-60	80-98	0-19	1-10	1.55-1.75	6-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.05			
529A:														
Selmass-----	0-15	25-50	28-50	18-27	1.35-1.45	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.24	.24	4	6	48
	15-42	20-50	20-50	20-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
	42-47	30-85	2-50	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	75-98	0-24	1-10	1.55-1.70	6-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.05			
543B:														
Piscasaw-----	0-9	0-12	61-80	15-27	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-12	0-12	61-80	15-27	1.35-1.55	0.6-2	0.21-0.23	0.0-2.9	0.5-1.5	.49	.49			
	12-26	0-15	50-75	24-35	1.40-1.60	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	26-51	20-50	20-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	51-60	35-55	30-45	15-20	1.45-1.70	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			
544A:														
Torox-----	0-10	0-12	61-80	15-27	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	10-25	3-15	50-75	25-35	1.40-1.60	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	25-42	20-50	20-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	42-65	35-55	30-45	15-20	1.45-1.70	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			
545A:														
Windere-----	0-9	2-12	61-80	18-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-12	2-12	61-80	15-27	1.35-1.55	0.6-2	0.21-0.23	0.0-2.9	0.5-2.0	.49	.49			
	12-36	3-10	50-73	24-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.0	.37	.37			
	36-50	22-45	30-50	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	35-55	30-45	15-20	1.45-1.70	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			

Table 22.--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					
<b>545B:</b>														
Windere-----	0-9	2-12	61-80	18-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-31	3-10	50-73	24-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-2.0	.37	.37			
	31-50	22-45	30-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	50-65	35-55	30-45	15-20	1.45-1.70	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			
<b>561B:</b>														
Whalan-----	0-10	10-30	50-70	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	2	6	48
	10-33	15-50	20-55	22-35	1.40-1.55	0.6-2	0.17-0.19	3.0-5.9	0.2-1.0	.32	.32			
	33-38	10-35	15-55	35-60	1.35-1.45	0.06-0.6	0.15-0.19	6.0-8.9	0.0-0.5	.20	.20			
	38-60	---	---	---	---	2-20	---	---	---	---	---			
<b>NewGlarus-----</b>	0-12	0-10	63-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	2	5	56
	12-23	0-10	55-80	20-35	1.25-1.45	0.2-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	23-37	0-20	15-65	35-65	1.25-1.55	0.06-0.2	0.09-0.15	6.0-8.9	0.0-0.5	.20	.20			
	37-60	---	---	---	---	0.06-2	---	---	---	---	---			
<b>561C2:</b>														
Whalan-----	0-4	10-30	50-70	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	2	6	48
	4-33	15-50	20-55	22-35	1.40-1.55	0.6-2	0.17-0.19	3.0-5.9	0.2-1.0	.32	.32			
	33-36	10-35	15-55	35-60	1.35-1.45	0.06-0.6	0.15-0.19	6.0-8.9	0.0-0.5	.20	.20			
	36-60	---	---	---	---	2-20	---	---	---	---	---			
<b>NewGlarus-----</b>	0-9	0-10	63-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	2	5	56
	9-23	0-10	55-80	20-35	1.25-1.45	0.2-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	23-36	0-20	15-65	35-65	1.25-1.55	0.06-0.2	0.09-0.15	6.0-8.9	0.0-0.5	.20	.20			
	36-60	---	---	---	---	0.06-2	---	---	---	---	---			
<b>561D2:</b>														
Whalan-----	0-6	10-30	50-70	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	2	6	48
	6-25	15-50	20-55	22-35	1.40-1.55	0.6-2	0.17-0.19	3.0-5.9	0.2-1.0	.32	.32			
	25-27	10-35	15-55	35-60	1.35-1.45	0.06-0.6	0.15-0.19	6.0-8.9	0.0-0.5	.20	.20			
	27-60	---	---	---	---	2-20	---	---	---	---	---			
<b>NewGlarus-----</b>	0-7	0-10	63-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	2	5	56
	7-21	0-10	55-80	20-35	1.25-1.45	0.2-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	21-30	0-20	15-65	35-65	1.25-1.55	0.06-0.2	0.09-0.15	6.0-8.9	0.0-0.5	.20	.20			
	30-60	---	---	---	---	0.06-2	---	---	---	---	---			
<b>566B:</b>														
Rockton-----	0-10	23-40	35-50	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.24	.24	2	6	48
	10-21	20-50	20-55	25-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-1.5	.32	.32			
	21-25	10-35	10-55	35-60	1.35-1.45	0.06-0.6	0.09-0.15	6.0-8.9	0.0-0.5	.20	.20			
	25-60	---	---	---	---	2-20	---	---	---	---	---			

Table 22.--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					
566B:														
Dodgeville-----	0-12	0-15	58-88	15-27	1.10-1.35	0.6-2	0.21-0.24	0.0-2.9	3.0-5.0	.28	.28	2	6	48
	12-21	0-15	50-75	25-35	1.25-1.55	0.2-2	0.17-0.22	3.0-5.9	0.5-1.5	.37	.37			
	21-36	2-30	5-53	45-75	1.25-1.55	0.06-0.2	0.06-0.13	6.0-8.9	0.0-0.5	.20	.20			
	36-60	---	---	---	---	0.06-2	---	---	---	---	---			
566C2:														
Rockton-----	0-9	23-40	35-50	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	2	6	48
	9-20	20-50	20-55	25-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-1.5	.32	.32			
	20-24	10-35	10-55	35-60	1.35-1.45	0.06-0.6	0.09-0.15	6.0-8.9	0.0-0.5	.20	.20			
	24-60	---	---	---	---	2-20	---	---	---	---	---			
Dodgeville-----	0-10	0-15	58-88	15-27	1.10-1.35	0.6-2	0.21-0.24	0.0-2.9	2.0-4.0	.32	.32	2	6	48
	10-23	0-15	50-75	25-35	1.25-1.55	0.2-2	0.17-0.22	3.0-5.9	0.5-1.5	.37	.37			
	23-31	2-30	5-53	45-75	1.25-1.55	0.06-0.2	0.06-0.13	6.0-8.9	0.0-0.5	.20	.20			
	31-60	---	---	---	---	0.06-2	---	---	---	---	---			
566D2:														
Rockton-----	0-8	23-40	35-50	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	2	6	48
	8-20	20-50	20-55	25-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-1.5	.32	.32			
	20-22	10-35	10-55	35-60	1.35-1.45	0.06-0.6	0.09-0.15	6.0-8.9	0.0-0.5	.20	.20			
	22-60	---	---	---	---	2-20	---	---	---	---	---			
Dodgeville-----	0-8	0-15	58-88	15-27	1.10-1.35	0.6-2	0.21-0.24	0.0-2.9	2.0-4.0	.32	.32	2	6	48
	8-13	0-15	50-75	25-35	1.25-1.55	0.2-2	0.17-0.22	3.0-5.9	0.5-1.5	.37	.37			
	13-24	2-30	5-53	45-75	1.25-1.55	0.06-0.2	0.06-0.13	6.0-8.9	0.0-0.5	.20	.20			
	24-60	---	---	---	---	0.06-2	---	---	---	---	---			
570A:														
Martinsville-----	0-9	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
	9-37	12-50	17-68	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.5	.32	.32			
	37-58	20-60	15-65	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	58-64	20-90	0-75	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
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	30-60	20-50	8-20	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.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	0.2-1.0	.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	0.1-0.5	.28	.28			
	53-60	20-90	0-75	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
570C2:														
Martinsville-----	0-9	12-35	50-78	10-20	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	9-42	12-50	17-68	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.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	0.1-0.5	.28	.28			
	59-70	20-90	0-75	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			

Table 22.--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	Wind
										Kw	Kf	T	erodi- bility group	erodi- bility index
570D2:														
Martinsville-----	0-7	12-35	50-78	10-20	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	7-39	12-50	17-68	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	39-48	20-60	15-65	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	48-60	20-90	0-75	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
618B:														
Senachwine-----	0-11	15-40	30-66	19-25	1.20-1.65	0.6-2	0.17-0.26	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	11-32	15-40	20-58	27-35	1.40-1.70	0.6-2	0.07-0.21	3.0-5.9	0.0-0.5	.32	.32			
	32-40	20-45	18-65	18-27	1.60-1.80	0.2-0.6	0.07-0.17	0.0-2.9	0.0-0.5	.32	.37			
	40-60	20-45	18-65	15-25	1.75-1.95	0.2-0.6	0.01-0.03	0.0-2.9	0.0-0.5	.32	.37			
623A:														
Kishwaukee-----	0-15	5-30	50-80	12-22	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	5	56
	15-43	15-50	18-55	20-32	1.40-1.60	0.6-2	0.15-0.20	3.0-5.9	0.5-2.0	.32	.32			
	43-58	35-75	5-47	18-30	1.50-1.70	0.6-2	0.06-0.12	3.0-5.9	0.0-1.0	.28	.32			
	58-60	85-98	1-15	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
623B:														
Kishwaukee-----	0-11	5-30	50-80	12-22	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	5	56
	11-45	15-50	18-55	20-32	1.40-1.60	0.6-2	0.15-0.20	3.0-5.9	0.5-2.0	.32	.32			
	45-57	35-75	5-47	18-30	1.50-1.70	0.6-2	0.06-0.12	3.0-5.9	0.0-1.0	.28	.32			
	57-60	85-98	1-15	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
624B:														
Caprell-----	0-7	5-35	50-80	12-24	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	7-33	10-40	25-60	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	33-47	35-65	15-45	15-27	1.45-1.65	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			
	47-60	40-65	15-45	10-20	1.45-1.70	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			
624C2:														
Caprell-----	0-10	5-35	50-80	12-24	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	10-22	10-40	25-60	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	22-47	35-65	15-45	15-27	1.45-1.65	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			
	47-60	40-65	15-45	10-20	1.45-1.70	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			
624D2:														
Caprell-----	0-8	5-35	50-80	12-24	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	8-25	10-40	25-60	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	25-38	35-65	15-45	15-27	1.45-1.65	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			
	38-60	40-65	15-45	10-20	1.45-1.70	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			

Table 22.--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					
624E: Caprell-----	0-9	5-35	50-80	12-24	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	9-28	10-40	25-60	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	28-43	35-65	15-45	15-27	1.45-1.65	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			
	43-60	40-65	15-45	10-20	1.45-1.70	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			
625B: Geryune-----	0-14	2-12	61-80	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	14-28	5-15	50-73	24-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-2.0	.37	.37			
	28-43	25-55	20-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	43-60	35-55	25-45	15-20	1.45-1.70	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			
626A: Kish-----	0-11	25-45	28-50	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	.28	.28			
635A: Lismod-----	0-15	2-12	61-80	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	15-35	5-15	50-70	24-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-2.0	.37	.37			
	35-39	20-45	21-52	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	39-80	30-60	20-50	15-20	1.45-1.70	0.6-2	0.13-0.18	0.0-2.9	0.0-0.5	.32	.32			
635B: Lismod-----	0-12	2-12	61-80	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	12-32	5-15	50-70	24-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-2.0	.37	.37			
	32-37	20-45	21-52	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	37-60	30-60	20-50	15-20	1.45-1.70	0.6-2	0.13-0.18	0.0-2.9	0.0-0.5	.32	.32			
636B: Parmod-----	0-12	5-35	50-80	18-27	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-4.0	.24	.24	5	6	48
	12-34	15-50	25-60	22-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	34-38	30-50	28-50	20-25	1.45-1.65	0.6-2	0.14-0.18	0.0-2.9	0.0-0.5	.32	.32			
	38-60	35-55	30-45	15-20	1.50-1.70	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
636C2: Parmod-----	0-8	5-35	50-80	18-27	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.28	.28	5	6	48
	8-27	15-50	25-60	22-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	27-33	30-50	28-50	20-25	1.45-1.65	0.6-2	0.14-0.18	0.0-2.9	0.0-0.5	.32	.32			
	33-60	35-55	30-45	15-20	1.50-1.70	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
667C2: Kaneville-----	0-8	0-10	63-85	15-27	1.25-1.45	0.6-2	0.22-0.25	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-41	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			
	41-50	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			
	50-60	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			

Table 22.--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					
<b>675A:</b>														
Greenbush-----	0-9	0-7	68-85	15-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	9-16	0-7	66-85	15-27	1.30-1.35	0.6-2	0.18-0.20	0.0-2.9	0.5-1.0	.43	.43			
	16-46	0-7	58-74	26-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	46-60	0-7	66-82	18-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
<b>675B:</b>														
Greenbush-----	0-6	0-7	68-82	18-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	6-17	0-7	66-85	15-27	1.30-1.35	0.6-2	0.18-0.20	0.0-2.9	0.5-1.0	.43	.43			
	17-75	0-7	58-74	26-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	75-80	0-7	66-82	18-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
<b>728B:</b>														
Winnebago-----	0-15	2-30	50-80	15-27	1.20-1.40	0.6-2	0.15-0.22	0.0-2.9	3.0-4.0	.24	.24	5	6	48
	15-66	20-60	10-50	25-35	1.35-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.28	.28			
	66-74	25-70	8-50	15-25	1.40-1.70	0.6-2	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
<b>728C2:</b>														
Winnebago-----	0-8	2-30	50-80	15-27	1.20-1.40	0.6-2	0.15-0.22	0.0-2.9	2.0-3.0	.28	.28	5	6	48
	8-55	20-60	10-50	25-35	1.35-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.28	.28			
	55-60	25-70	8-50	15-25	1.40-1.70	0.6-2	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
<b>766A:</b>														
Lamartine-----	0-9	0-12	61-80	18-27	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-25	3-15	50-75	25-35	1.40-1.60	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	25-39	20-50	20-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	39-60	35-60	20-45	15-20	1.45-1.70	0.6-2	0.13-0.19	0.0-2.9	0.0-0.5	.32	.32			
<b>768C:</b>														
Backbone-----	0-8	78-88	2-17	5-12	1.50-1.55	6-20	0.10-0.12	0.0-2.9	1.0-2.0	.02	.02	2	2	134
	8-11	78-88	2-17	5-12	1.50-1.60	6-20	0.09-0.11	0.0-2.9	0.5-1.0	.05	.05			
	11-17	55-80	5-33	12-18	1.55-1.65	2-6	0.12-0.16	0.0-2.9	0.3-0.5	.24	.24			
	17-25	20-55	10-50	25-42	1.60-1.70	0.2-0.6	0.12-0.18	3.0-5.9	0.0-0.5	.24	.24			
	25-60	---	---	---	---	0.06-2	---	---	---	---	---			
<b>771A:</b>														
Hayfield-----	0-8	25-45	30-50	15-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	8-14	25-45	30-50	15-27	1.35-1.55	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.37	.37			
	14-24	20-50	20-60	18-30	1.40-1.55	0.6-2	0.14-0.22	3.0-5.9	0.3-1.0	.32	.32			
	24-60	75-95	0-25	0-8	1.55-1.65	6-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.05			
<b>772A:</b>														
Marshan-----	0-17	25-45	30-50	18-27	1.35-1.45	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.24	.24	4	6	48
	17-20	15-40	25-60	25-35	1.40-1.55	0.6-2	0.17-0.22	3.0-5.9	0.5-2.0	.32	.32			
	20-24	25-60	15-50	18-30	1.45-1.55	0.6-2	0.15-0.19	0.0-2.9	0.0-0.5	.28	.28			
	24-60	80-98	0-20	0-5	1.55-1.65	6-20	0.02-0.05	0.0-2.9	0.0-0.5	.05	.05			

Table 22.--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					
777A:														
Adrian-----	0-7	---	---	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	2	2	134
	7-40	---	---	---	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
	40-60	75-98	0-20	0-10	1.50-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
779B:														
Chelsea-----	0-5	72-90	0-26	2-13	1.35-1.55	6-20	0.10-0.12	0.0-2.9	0.5-1.5	.02	.02	5	2	134
	5-11	70-90	0-28	1-10	1.40-1.60	6-20	0.08-0.11	0.0-2.9	0.1-1.0	.10	.10			
	11-33	70-95	0-28	1-10	1.45-1.65	6-20	0.06-0.11	0.0-2.9	0.0-0.5	.10	.10			
	33-80	65-95	0-32	1-10	1.45-1.65	2-6	0.10-0.15	0.0-2.9	0.0-0.3	.20	.20			
779D:														
Chelsea-----	0-4	72-90	0-26	2-13	1.35-1.55	6-20	0.10-0.12	0.0-2.9	0.5-1.5	.02	.02	5	2	134
	4-35	70-90	0-28	1-10	1.40-1.60	6-20	0.08-0.11	0.0-2.9	0.1-1.0	.10	.10			
	35-60	65-95	0-32	1-10	1.45-1.65	2-6	0.10-0.15	0.0-2.9	0.0-0.3	.20	.20			
780B:														
Grellton-----	0-7	55-75	10-40	5-15	1.40-1.70	0.6-2	0.13-0.18	0.0-2.9	2.0-3.0	.20	.20	5	3	86
	7-11	55-75	10-40	5-15	1.40-1.70	0.6-2	0.12-0.17	0.0-2.9	0.5-1.5	.24	.24			
	11-22	35-75	5-47	18-30	1.55-1.65	0.6-2	0.12-0.19	3.0-5.9	0.5-1.0	.32	.32			
	22-36	5-25	50-75	18-30	1.55-1.65	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	36-45	15-75	10-75	5-20	1.35-1.65	0.6-2	0.15-0.22	0.0-2.9	0.0-0.5	.28	.28			
	45-60	20-75	10-75	5-15	1.35-1.75	0.6-2	0.08-0.22	0.0-2.9	0.0-0.5	.24	.24			
780C2:														
Grellton-----	0-5	55-75	10-40	5-15	1.40-1.70	0.6-2	0.13-0.18	0.0-2.9	2.0-3.0	.20	.20	5	3	86
	5-23	35-75	5-47	18-30	1.55-1.65	0.6-2	0.12-0.19	3.0-5.9	0.5-1.5	.32	.32			
	23-47	5-25	50-75	18-30	1.55-1.65	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	47-55	15-75	10-75	5-20	1.35-1.65	0.6-2	0.15-0.22	0.0-2.9	0.0-0.5	.28	.28			
	55-60	20-75	10-75	5-15	1.35-1.75	0.6-2	0.08-0.22	0.0-2.9	0.0-0.5	.24	.24			
781A:														
Friesland-----	0-14	55-75	10-40	5-15	1.40-1.65	0.6-2	0.13-0.18	0.0-2.9	3.0-5.0	.15	.15	5	3	86
	14-34	35-75	5-47	18-30	1.35-1.55	0.6-2	0.12-0.19	3.0-5.9	0.5-1.5	.32	.32			
	34-50	5-25	50-75	18-30	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.0-0.5	.37	.37			
	50-60	15-75	10-75	5-20	1.35-1.75	0.6-2	0.10-0.22	0.0-2.9	0.0-0.5	.32	.32			
781B:														
Friesland-----	0-19	55-75	10-40	5-15	1.40-1.65	0.6-2	0.13-0.18	0.0-2.9	3.0-5.0	.15	.15	5	3	86
	19-35	35-75	5-47	18-30	1.35-1.55	0.6-2	0.12-0.19	3.0-5.9	0.5-1.5	.32	.32			
	35-45	5-25	50-75	18-30	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.0-0.5	.37	.37			
	45-60	15-75	10-75	5-20	1.35-1.75	0.6-2	0.10-0.22	0.0-2.9	0.0-0.5	.32	.32			

Table 22.--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					
782A:														
Juneau-----	0-9	5-20	62-85	10-18	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-33	5-20	62-85	10-18	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	0.5-2.0	.55	.55			
	33-51	5-20	50-80	10-30	1.25-1.45	0.6-2	0.18-0.22	3.0-5.9	0.5-3.0	.32	.32			
	51-60	5-35	35-80	10-30	1.30-1.50	0.6-2	0.14-0.16	3.0-5.9	0.0-0.5	.32	.32			
783A:														
Flagler-----	0-23	52-70	12-36	12-18	1.50-1.55	2-6	0.12-0.14	0.0-2.9	1.0-3.0	.15	.15	4	3	86
	23-33	55-75	10-35	10-18	1.55-1.60	2-6	0.11-0.13	0.0-2.9	0.2-1.0	.24	.24			
	33-41	78-92	0-18	4-10	1.60-1.70	6-20	0.03-0.09	0.0-2.9	0.0-0.5	.05	.10			
	41-70	80-97	0-18	2-8	1.60-1.75	6-20	0.02-0.08	0.0-2.9	0.0-0.5	.02	.05			
783B:														
Flagler-----	0-19	52-70	12-36	12-18	1.50-1.55	2-6	0.12-0.14	0.0-2.9	1.0-3.0	.15	.15	4	3	86
	19-31	55-75	10-35	10-18	1.55-1.60	2-6	0.11-0.13	0.0-2.9	0.2-1.0	.24	.24			
	31-35	78-92	0-18	4-10	1.60-1.70	6-20	0.03-0.09	0.0-2.9	0.0-0.5	.05	.10			
	35-60	80-97	0-18	2-8	1.60-1.75	6-20	0.02-0.08	0.0-2.9	0.0-0.5	.02	.05			
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			
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			
864.														
Pits, quarry														
865.														
Pits, gravel														
939C2:														
Rodman-----	0-7	30-52	23-55	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
	7-14	40-80	0-55	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	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			
Warsaw-----	0-9	27-45	30-50	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	4	5	56
	9-28	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			
	28-60	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			

Table 22.--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					
939D2:														
Rodman-----	0-7	30-52	23-55	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
	7-13	40-80	0-55	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	13-60	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			
Warsaw-----	0-7	27-45	30-50	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	4	5	56
	7-27	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			
	27-60	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			
969E2:														
Casco-----	0-5	25-50	28-50	12-25	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	20-60	10-50	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.2-1.0	.28	.32			
	19-60	87-98	0-13	0-5	1.45-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
Rodman-----	0-6	30-52	23-55	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	40-80	0-55	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	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			
1082A:														
Millington-----	0-21	5-30	50-75	20-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.32	.32	5	4L	86
	21-37	10-40	30-70	20-35	1.40-1.60	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.32	.32			
	37-60	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			
1100A:														
Palms-----	0-14	---	---	---	0.30-0.40	0.2-6	0.35-0.45	---	75-99	---	---	2	2	134
	14-35	---	---	---	0.15-0.30	0.2-6	0.35-0.45	---	75-99	---	---			
	35-60	10-55	20-80	7-35	1.45-1.75	0.2-2	0.14-0.22	0.0-2.9	0.5-6.0	.32	.32			
1103A:														
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	---	---			
1776A:														
Comfrey, frequently flooded-----	0-7	20-45	28-50	18-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	5.0-7.0	.32	.32	5	6	48
	7-26	20-45	20-52	18-35	1.20-1.40	0.6-2	0.16-0.22	3.0-5.9	2.0-5.0	.32	.32			
	26-37	15-45	20-55	18-35	1.25-1.45	0.6-2	0.15-0.20	3.0-5.9	1.0-2.5	.32	.32			
	37-63	15-55	13-55	15-32	1.30-1.50	0.6-2	0.12-0.19	3.0-5.9	0.5-1.5	.32	.32			
Comfrey, occasionally flooded-----	0-8	20-45	28-50	18-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	5.0-7.0	.32	.32	5	6	48
	8-29	20-45	20-52	18-35	1.20-1.40	0.6-2	0.16-0.22	3.0-5.9	2.0-5.0	.32	.32			
	29-49	15-45	20-55	18-35	1.25-1.45	0.6-2	0.15-0.20	3.0-5.9	1.0-2.5	.32	.32			
	49-65	15-55	13-55	15-32	1.30-1.50	0.6-2	0.12-0.19	3.0-5.9	0.5-1.5	.32	.32			

Table 22.--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					
<b>1777A:</b>														
Adrian-----	0-16	---	---	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	2	2	134
	16-34	---	---	---	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
	34-60	75-98	0-20	0-10	1.50-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
<b>3082A:</b>														
Millington-----	0-26	5-30	50-75	20-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.32	.32	5	4L	86
	26-53	10-40	30-70	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			
<b>3107A:</b>														
Sawmill-----	0-10	3-15	58-70	27-35	1.25-1.45	0.6-2	0.12-0.18	3.0-5.9	4.5-7.0	.28	.28	5	6	48
	10-32	3-15	58-70	27-35	1.25-1.45	0.6-2	0.12-0.18	3.0-5.9	4.5-7.0	.28	.28			
	32-58	5-20	45-68	27-35	1.30-1.50	0.6-2	0.12-0.18	3.0-5.9	1.5-3.5	.32	.32			
	58-65	5-25	40-70	25-35	1.30-1.50	0.6-2	0.12-0.18	3.0-5.9	0.8-3.5	.32	.32			
<b>3415A:</b>														
Orion-----	0-7	1-15	67-89	10-18	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-22	2-90	10-88	9-18	1.20-1.30	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.55	.55			
	22-60	2-15	55-88	10-30	1.25-1.45	0.6-2	0.18-0.22	0.0-2.9	3.0-8.0	.37	.37			
<b>3776A:</b>														
Comfrey-----	0-7	20-45	28-50	18-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	5.0-7.0	.32	.32	5	6	48
	7-26	20-45	20-52	18-35	1.20-1.40	0.6-2	0.16-0.22	3.0-5.9	2.0-5.0	.32	.32			
	26-37	15-45	20-55	18-35	1.25-1.45	0.6-2	0.15-0.20	3.0-5.9	1.0-2.5	.32	.32			
	37-63	15-55	13-55	15-32	1.30-1.50	0.6-2	0.12-0.19	3.0-5.9	0.5-1.5	.32	.32			
<b>3800A:</b>														
Psamments-----	0-60	85-100	0-25	0-10	1.50-1.70	6-20	0.04-0.09	0.0-2.9	0.0-0.5	.02	.02	5	1	220
	60-80	85-100	0-10	0-10	1.50-1.70	6-20	0.04-0.09	0.0-2.9	0.0-0.3	.02	.02			
<b>8082A:</b>														
Millington-----	0-26	5-30	50-75	20-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.32	.32	5	4L	86
	26-36	10-40	30-70	20-35	1.40-1.60	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.32	.32			
	36-62	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			
<b>8776A:</b>														
Comfrey-----	0-8	20-45	28-50	18-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	5.0-7.0	.32	.32	5	6	48
	8-29	20-45	20-52	18-35	1.20-1.40	0.6-2	0.16-0.22	3.0-5.9	2.0-5.0	.32	.32			
	29-49	15-45	20-55	18-35	1.25-1.45	0.6-2	0.15-0.20	3.0-5.9	1.0-2.5	.32	.32			
	49-65	15-55	13-55	15-32	1.30-1.50	0.6-2	0.12-0.19	3.0-5.9	0.5-1.5	.32	.32			

Table 22.--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	Wind
										Kw	Kf	T	erodi- bility group	erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
<b>8782A:</b>														
Juneau-----	0-8	5-20	62-85	10-18	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-24	5-20	62-85	10-18	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	0.5-2.0	.55	.55			
	24-35	5-20	50-80	10-30	1.25-1.45	0.6-2	0.18-0.22	3.0-5.9	0.5-3.0	.32	.32			
	35-60	5-35	35-80	10-30	1.30-1.50	0.6-2	0.14-0.16	3.0-5.9	0.0-0.5	.32	.32			
<b>9061A:</b>														
Atterberry-----	0-9	2-7	68-78	15-27	1.25-1.45	0.6-2	0.19-0.26	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-17	2-7	69-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.1-1.0	.43	.43			
	17-48	2-7	60-73	25-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	48-60	2-7	66-80	15-27	1.30-1.50	0.6-2	0.17-0.22	0.0-2.9	0.1-0.5	.49	.49			
<b>9068A:</b>														
Sable-----	0-19	0-7	58-73	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	5.0-6.0	.24	.24	5	6	48
	19-23	0-7	58-73	27-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	2.0-4.0	.28	.28			
	23-47	0-7	58-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	47-60	0-7	65-80	20-28	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
<b>9278A:</b>														
Stronghurst-----	0-7	0-7	66-80	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-11	0-7	66-80	20-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.49	.49			
	11-47	0-7	58-78	22-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	47-60	0-7	66-80	20-27	1.35-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			

Table 23.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
		In meq/100 g	meq/100 g	pH	Pct
21B: Pecatonica-----	0-3	10-22	---	5.1-7.3	0
	3-10	7.0-17	---	4.5-7.3	0
	10-18	11-16	---	4.5-7.3	0
	18-26	15-22	---	4.5-6.5	0
	26-68	15-22	---	4.5-6.5	0
	68-80	9.0-15	---	5.6-8.4	0-30
21C2: Pecatonica-----	0-7	10-22	---	5.1-7.3	0
	7-19	13-24	---	4.5-6.5	0
	19-60	15-22	---	4.5-6.5	0
22B: Westville-----	0-8	13-22	---	5.1-6.5	0
	8-61	15-23	---	5.1-7.3	0
	61-72	9.0-14	---	6.6-8.4	0-30
22C2: Westville-----	0-9	13-22	---	5.1-6.5	0
	9-54	15-23	---	5.1-7.3	0
	54-60	9.0-14	---	6.6-8.4	0-30
22D2: Westville-----	0-5	13-22	---	5.1-6.5	0
	5-54	15-23	---	5.1-7.3	0
	54-60	9.0-14	---	6.6-8.4	0-30
51A: Muscatune-----	0-16	16-32	---	6.1-7.3	0
	16-22	16-27	---	5.6-7.3	0
	22-46	17-31	---	5.6-7.3	0
	46-60	9.0-22	---	6.6-7.8	0-15
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
61A: Atterberry-----	0-9	11-28	---	6.1-7.3	0
	9-17	9.0-24	---	5.6-6.5	0
	17-48	16-29	---	5.1-6.0	0
	48-60	9.0-23	---	5.6-7.8	0-8
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
68A: Sable-----	0-19	26-33	---	5.6-7.3	0
	19-23	20-29	---	5.6-7.3	0
	23-47	15-23	---	5.6-7.8	0
	47-60	12-18	---	6.6-8.4	0-30

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
68A+:					
Sable-----	0-13	16-24	---	5.6-7.3	0
	13-24	20-30	---	5.6-7.3	0
	24-50	15-23	---	5.6-7.8	0
	50-60	12-18	---	6.6-8.4	0-15
86A:					
Oscosco-----	0-13	18-25	---	5.1-7.3	0
	13-38	15-23	---	5.1-6.5	0
	38-60	12-18	---	5.6-7.3	0-15
86B:					
Oscosco-----	0-14	18-25	---	5.1-7.3	0
	14-55	15-23	---	5.1-6.5	0
	55-60	12-18	---	5.6-7.8	0-15
87A:					
Dickinson-----	0-18	8.0-18	---	5.6-7.3	0
	18-26	7.0-14	---	5.1-6.5	0
	26-38	2.0-7.0	---	5.6-7.3	0
	38-60	1.0-6.0	---	5.6-7.3	0
100A:					
Palms-----	0-6	150-200	---	5.1-7.8	0
	6-32	150-200	---	5.1-7.8	0
	32-60	5.0-33	---	6.1-8.4	0-20
102A:					
La Hogue-----	0-16	15-26	---	5.6-7.3	0
	16-32	13-25	---	5.1-7.3	0
	32-48	6.0-15	---	5.6-7.8	0
	48-60	3.0-13	---	6.1-7.8	0-10
103A:					
Houghton-----	0-11	140-200	---	5.1-7.3	0
	11-60	100-200	---	5.1-7.3	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
119B:					
Elco-----	0-6	14-22	---	5.6-7.3	0
	6-10	9.0-17	---	5.6-7.3	0
	10-28	14-22	---	5.1-7.8	0
	28-32	14-21	---	5.1-7.8	0
	32-60	15-27	---	5.1-7.8	0
125A:					
Selma-----	0-6	20-28	---	6.1-7.8	0
	6-13	22-31	---	6.1-7.8	0
	13-44	11-23	---	6.1-8.4	0-20
	44-80	7.0-20	---	6.6-8.4	0-20

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
134A:					
Camden-----	0-9	10-22	---	5.1-7.3	0
	9-14	9.0-18	---	5.1-7.3	0
	14-29	13-23	---	5.1-7.3	0
	29-60	10-19	---	5.1-7.3	0
	60-71	3.0-13	---	5.6-8.4	0-20
146A:					
Elliott-----	0-6	16-32	---	5.6-7.3	0
	6-11	27-40	---	5.6-7.3	0
	11-16	17-38	---	6.1-7.3	0
	16-41	13-24	---	6.6-7.8	0-15
	41-60	11-22	---	7.4-8.4	10-35
148A:					
Proctor-----	0-11	16-24	---	5.1-7.8	0
	11-27	16-25	---	5.6-7.3	0
	27-44	11-23	---	5.6-7.3	0
	44-73	3.0-16	---	6.1-7.8	0-10
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	---	5.6-7.3	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	---	6.6-8.4	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
152A+:					
Drummer-----	0-16	16-24	---	5.6-7.3	0
	16-30	26-53	---	5.6-7.3	0
	30-57	12-23	---	5.6-7.8	0
	57-63	13-21	---	6.1-8.4	0-20
	63-80	9.0-19	---	6.6-8.4	0-40
153A:					
Pella-----	0-12	24-33	---	6.1-7.8	0
	12-33	17-23	---	6.6-7.8	0-10
	33-42	9.0-19	---	7.4-8.4	5-30
	42-60	6.0-18	---	7.8-8.4	5-40
172A:					
Hoopeston-----	0-14	9.0-17	---	5.1-7.3	0
	14-38	7.0-13	---	5.1-7.8	0
	38-60	1.0-7.0	---	5.1-8.4	0-20
188A:					
Beardstown-----	0-9	13-24	---	5.6-7.3	0
	9-14	9.0-18	---	5.1-6.0	0
	14-41	11-20	11-20	4.5-6.0	0
	41-60	3.0-10	---	5.1-7.3	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
197A:					
Troxel-----	0-8	16-27	---	5.6-7.3	0
	8-33	12-23	---	5.6-7.3	0
	33-55	15-23	---	5.6-7.3	0
	55-80	9.0-22	---	5.6-7.8	0-15
198A:					
Elburn-----	0-16	16-32	---	6.1-7.3	0
	16-49	17-31	---	5.6-7.8	0
	49-58	6.0-13	---	6.6-7.8	0-5
	58-62	2.0-10	---	6.6-7.8	0-15
199A:					
Plano-----	0-14	17-26	---	6.1-7.3	0
	14-49	15-30	---	5.1-7.3	0
	49-60	9.0-20	---	5.6-7.8	0
	60-72	6.0-13	---	5.6-8.4	0-20
199B:					
Plano-----	0-15	17-26	---	6.1-7.3	0
	15-45	13-26	---	5.1-7.3	0
	45-55	6.0-19	---	5.6-7.8	0
	55-72	6.0-13	---	5.6-8.4	0-20
199C2:					
Plano-----	0-8	17-26	---	6.1-7.3	0
	8-41	15-23	---	5.1-7.3	0
	41-53	9.0-20	---	5.6-7.8	0
	53-60	6.0-13	---	5.6-8.4	0-20
206A:					
Thorp-----	0-14	20-28	---	5.1-7.8	0
	14-19	11-17	---	5.1-7.3	0
	19-43	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
219A:					
Millbrook-----	0-8	15-24	---	5.1-7.3	0
	8-12	10-18	---	5.1-7.3	0
	12-26	15-23	---	5.1-7.3	0
	26-41	11-20	---	5.1-7.8	0-5
	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	6.0-11	---	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	6.0-11	---	7.4-8.4	5-35
223B:					
Varna-----	0-12	15-22	---	5.6-7.3	0
	12-30	18-28	---	5.6-7.3	0
	30-48	15-25	---	7.4-8.4	0-15
	48-60	13-21	---	7.9-8.4	5-30

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
227B:					
Argyle-----	0-7	18-24	---	5.1-6.5	0
	7-13	10-18	---	5.1-6.5	0
	13-25	16-23	---	5.1-6.0	0
	25-70	12-22	---	5.1-6.5	0
	70-84	9.0-19	---	5.1-6.5	0
242A:					
Kendall-----	0-7	10-26	---	5.1-7.3	0
	7-11	8.0-20	---	5.1-7.3	0
	11-51	13-18	13-17	4.5-7.3	0
	51-58	9.0-19	---	5.1-7.8	0-15
	58-74	3.0-10	---	7.4-8.4	0-20
243A:					
St. Charles-----	0-9	14-22	---	5.1-7.8	0
	9-51	15-22	---	4.5-7.3	0
	51-60	9.0-19	---	5.1-7.3	0
243B:					
St. Charles-----	0-8	14-22	---	5.1-7.8	0
	8-50	15-22	---	4.5-7.3	0
	50-60	9.0-19	---	5.1-7.3	0
243C2:					
St. Charles-----	0-8	14-22	---	5.1-7.8	0
	8-41	15-22	---	4.5-7.3	0
	41-60	9.0-19	---	5.1-7.3	0
278A:					
Stronghurst-----	0-7	14-22	---	5.1-7.3	0
	7-11	11-17	---	5.1-7.3	0
	11-47	17-23	---	5.1-7.3	0
	47-60	12-17	---	5.6-7.8	0-15
279A:					
Rozetta-----	0-4	10-22	---	5.1-7.3	0
	4-11	7.0-17	---	4.5-7.3	0
	11-50	16-22	16-22	4.5-6.0	0
	50-60	12-17	---	5.6-7.8	0-15
280B:					
Fayette-----	0-9	15-20	---	5.1-7.3	0
	9-39	15-23	---	4.5-6.0	0
	39-60	15-20	---	5.1-7.8	0-15
280C2:					
Fayette-----	0-8	18-25	---	5.1-7.3	0
	8-64	15-22	---	4.5-6.0	0
	64-80	15-20	---	5.1-7.8	0-15
290A:					
Warsaw-----	0-15	15-25	---	5.6-7.3	0
	15-31	11-22	---	5.1-7.3	0
	31-60	1.0-7.0	---	7.4-8.4	15-35
290B:					
Warsaw-----	0-11	15-25	---	5.6-7.3	0
	11-29	11-22	---	5.1-7.3	0
	29-60	1.0-7.0	---	7.4-8.4	15-35

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
290C2:					
Warsaw-----	0-9	13-23	---	5.6-7.3	0
	9-28	11-22	---	5.1-7.3	0
	28-60	1.0-7.0	---	7.4-8.4	15-35
290D2:					
Warsaw-----	0-7	13-23	---	5.6-7.3	0
	7-27	11-22	---	5.1-7.3	0
	27-60	1.0-7.0	---	7.4-8.4	15-35
293A:					
Andres-----	0-11	10-22	---	5.6-7.3	0
	11-36	11-22	---	6.1-7.8	0-5
	36-50	13-24	---	6.6-8.4	0-15
	50-60	11-22	---	7.4-8.4	15-30
297B:					
Ringwood-----	0-12	17-26	---	5.6-7.3	0
	12-20	14-24	---	5.6-7.3	0
	20-36	12-20	---	5.6-7.8	0-10
	36-40	5.0-12	---	6.6-8.4	0-20
	40-60	3.0-10	---	7.4-8.4	15-30
297C2:					
Ringwood-----	0-8	15-24	---	5.6-7.3	0
	8-19	14-24	---	5.6-7.3	0
	19-38	12-20	---	5.6-7.8	0-20
	38-60	3.0-10	---	7.4-8.4	15-30
297D2:					
Ringwood-----	0-8	15-24	---	5.6-7.3	0
	8-16	14-24	---	5.6-7.3	0
	16-32	12-20	---	5.6-7.8	0-20
	32-60	3.0-10	---	7.4-8.4	15-30
310B:					
McHenry-----	0-5	8.0-19	---	5.6-7.3	0
	5-10	7.0-16	---	5.6-7.3	0
	10-22	14-23	---	5.6-7.3	0
	22-32	12-20	---	5.6-7.8	0-10
	32-37	5.0-12	---	6.6-8.4	0-20
	37-60	3.0-10	---	7.4-8.4	10-30
310C2:					
McHenry-----	0-10	8.0-17	---	5.6-7.3	0
	10-19	14-23	---	5.6-7.3	0
	19-30	12-20	---	5.6-7.8	0-10
	30-36	5.0-12	---	6.6-8.4	0-20
	36-60	3.0-10	---	7.4-8.4	10-30
310D2:					
McHenry-----	0-7	8.0-17	---	5.6-7.3	0
	7-18	14-23	---	5.6-7.3	0
	18-28	12-20	---	5.6-7.8	0-10
	28-33	5.0-12	---	6.6-8.4	0-20
	33-60	3.0-10	---	7.4-8.4	10-30
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

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
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
327B:					
Fox-----	0-7	11-21	---	5.1-7.3	0
	7-11	11-22	---	5.1-7.3	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	11-19	---	5.1-7.3	0
	9-21	11-22	---	5.1-7.3	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	11-19	---	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	20-28	---	5.6-7.3	0
	14-25	14-24	---	6.1-7.8	0
	25-28	7.0-17	---	6.6-8.4	0-20
	28-60	0.0-7.0	---	7.4-8.4	15-35
332A:					
Billett-----	0-8	6.0-13	---	5.6-7.3	0
	8-13	5.0-11	---	5.1-7.3	0
	13-28	6.0-13	---	5.1-6.5	0
	28-47	5.0-12	---	5.6-7.3	0
	47-60	1.0-5.0	---	5.6-7.8	0-15
332B:					
Billett-----	0-8	6.0-13	---	5.6-7.3	0
	8-29	6.0-13	---	5.1-6.5	0
	29-38	5.0-12	---	5.6-7.3	0
	38-60	1.0-5.0	---	5.6-7.8	0-15
343A:					
Kane-----	0-5	17-26	---	5.6-7.3	0
	5-12	21-29	---	5.6-7.3	0
	12-22	16-24	---	5.6-7.3	0
	22-29	12-20	---	6.1-7.8	0-15
	29-60	0.0-7.0	---	7.4-8.4	15-40
344A:					
Harvard-----	0-9	16-24	---	5.1-7.8	0
	9-36	15-23	---	5.1-7.3	0
	36-56	9.0-22	---	5.6-7.8	0-5
	56-60	3.0-19	---	5.1-8.4	0-20
344B:					
Harvard-----	0-9	16-24	---	5.1-7.8	0
	9-30	15-23	---	5.1-7.3	0
	30-56	9.0-22	---	5.6-7.8	0-5
	56-69	3.0-19	---	5.1-8.4	0-20

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
354A:					
Hononegah-----	0-19	4.0-12	---	5.6-7.8	0
	19-24	4.0-10	---	5.6-7.8	0
	24-60	1.0-5.0	---	7.4-8.4	10-40
354B:					
Hononegah-----	0-15	4.0-12	---	5.6-7.8	0
	15-22	4.0-10	---	5.6-7.8	0
	22-60	1.0-5.0	---	7.4-8.4	10-40
361B:					
Kidder-----	0-9	7.0-19	---	6.1-7.8	0
	9-31	10-17	---	5.6-7.8	0
	31-34	5.0-12	---	6.6-8.4	0-10
	34-60	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
	30-41	5.0-12	---	6.6-8.4	0-10
	41-60	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
	23-27	5.0-12	---	6.6-8.4	0-10
	27-60	3.0-9.0	---	7.4-8.4	10-30
361D3:					
Kidder-----	0-7	14-18	---	6.1-7.8	0
	7-23	10-16	---	5.6-7.8	0
	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
	29-60	3.0-9.0	---	7.4-8.4	10-30
363C2:					
Griswold-----	0-10	13-23	---	5.6-7.8	0
	10-24	12-21	---	5.6-7.8	0
	24-27	6.0-13	---	6.6-7.8	0-10
	27-60	3.0-10	---	7.4-8.4	10-40
363D2:					
Griswold-----	0-8	13-23	---	5.6-7.8	0
	8-23	12-21	---	5.6-7.8	0
	23-27	6.0-13	---	6.6-7.8	0-10
	27-60	3.0-10	---	7.4-8.4	10-40
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	0-30
379A:					
Dakota-----	0-11	14-26	---	5.1-7.3	0
	11-30	11-24	---	5.1-7.3	0
	30-34	2.0-8.0	---	5.1-7.3	0
	34-60	0.0-4.0	---	5.1-7.8	0-15

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
387A:					
Ockley-----	0-9	3.0-15	---	5.6-6.5	0
	9-31	4.0-15	---	4.5-6.0	0
	31-57	4.0-15	---	5.6-6.5	0
	57-60	1.0-3.0	---	7.4-8.4	10-40
387B:					
Ockley-----	0-9	3.0-15	---	5.6-6.5	0
	9-31	4.0-15	---	4.5-6.0	0
	31-55	4.0-15	---	5.6-6.5	0
	55-60	1.0-3.0	---	7.4-8.4	10-40
403E:					
Elizabeth-----	0-6	16-26	---	6.1-8.4	0-5
	6-10	12-27	---	6.1-8.4	0-20
	10-19	12-25	---	6.1-8.4	0-40
	19-60	---	---	---	---
412B:					
Ogle-----	0-11	18-26	---	5.1-6.5	0
	11-33	16-23	---	5.1-6.0	0
	33-80	12-18	---	5.6-6.0	0
419A:					
Flagg-----	0-8	14-22	---	4.5-7.3	0
	8-11	14-22	---	4.5-7.3	0
	11-38	---	16-22	4.5-6.0	0
	38-60	13-18	---	5.1-7.3	0
419B:					
Flagg-----	0-4	14-22	---	4.5-7.3	0
	4-11	14-22	---	4.5-7.3	0
	11-48	16-20	---	4.5-6.0	0
	48-72	13-18	---	5.1-7.3	0
419C2:					
Flagg-----	0-7	14-22	---	4.5-7.3	0
	7-33	16-22	---	4.5-6.0	0
	33-60	13-18	---	5.1-7.3	0
440A:					
Jasper-----	0-18	13-25	---	5.1-7.3	0
	18-37	13-22	---	5.1-7.3	0
	37-44	7.0-16	---	5.6-7.8	0-5
	44-60	3.0-13	---	6.1-8.4	0-25
440B:					
Jasper-----	0-14	13-25	---	5.1-7.3	0
	14-43	13-22	---	5.1-7.3	0
	43-52	7.0-16	---	5.6-7.8	0-5
	52-60	3.0-13	---	6.1-8.4	0-25
440C2:					
Jasper-----	0-9	11-23	---	5.1-7.3	0
	9-29	13-22	---	5.1-7.3	0
	29-37	7.0-16	---	5.6-7.8	0-5
	37-60	3.0-13	---	6.1-8.4	0-25

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
490A:					
Odell-----	0-15	13-25	---	5.6-7.3	0
	15-20	17-31	---	5.6-7.3	0
	20-29	10-23	---	5.6-7.3	0
	29-40	4.0-17	---	6.6-8.4	0-10
	40-60	4.0-13	---	7.4-8.4	5-35
503B:					
Rockton-----	0-11	16-25	---	5.6-7.3	0
	11-31	17-24	---	5.6-7.8	0
	31-35	20-38	---	5.6-7.8	0-5
	35-60	---	---	---	---
505D2:					
Dunbarton-----	0-7	10-22	---	5.6-7.3	0
	7-14	7.0-17	---	5.6-7.8	0
	14-18	28-36	---	6.6-7.8	0
	18-60	---	---	---	---
505E2:					
Dunbarton-----	0-5	10-22	---	5.6-7.3	0
	5-10	7.0-17	---	5.6-7.8	0
	10-17	28-36	---	6.6-7.8	0
	17-60	---	---	---	---
506B:					
Hitt-----	0-14	19-26	---	5.1-6.5	0
	14-18	16-23	---	5.1-6.0	0
	18-41	16-21	---	5.1-6.0	0
	41-45	30-35	---	5.6-7.3	0
	45-60	---	---	---	---
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
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

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
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
528A:					
Lahoguess-----	0-14	15-27	---	5.6-7.3	0
	14-38	13-25	---	5.6-7.3	0
	38-46	3.0-18	---	6.1-7.8	0-10
	46-60	1.0-7.0	---	6.6-8.4	0-20
529A:					
Selmass-----	0-15	18-29	---	5.6-7.3	0
	15-42	13-25	---	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
543B:					
Piscasaw-----	0-9	12-22	---	5.1-7.3	0
	9-12	10-20	---	5.1-7.3	0
	12-26	15-23	---	5.1-6.5	0
	26-51	12-21	---	5.6-7.8	0-15
	51-60	9.0-13	---	7.4-8.4	10-40
544A:					
Torox-----	0-10	11-22	---	5.1-7.3	0
	10-25	16-23	---	5.1-6.5	0
	25-42	12-21	---	5.6-7.8	0-20
	42-65	9.0-13	---	7.4-8.4	10-40
545A:					
Windere-----	0-9	14-24	---	5.1-7.3	0
	9-12	10-20	---	5.1-7.3	0
	12-36	15-23	---	5.1-6.5	0
	36-50	12-21	---	5.6-7.8	0-20
	50-60	9.0-13	---	7.4-8.4	15-40
545B:					
Windere-----	0-9	14-24	---	5.1-7.3	0
	9-31	15-25	---	5.1-6.5	0
	31-50	12-21	---	5.6-7.8	0-20
	50-65	9.0-13	---	7.4-8.4	15-40

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
561B:					
Whalan-----	0-10	12-21	---	5.6-7.3	0
	10-33	13-23	---	5.1-6.5	0
	33-38	20-38	---	5.6-7.8	0
	38-60	---	---	---	---
NewGlarus-----	0-12	9.0-22	---	6.1-7.3	0
	12-23	13-23	---	5.6-7.3	0
	23-37	23-47	---	6.1-7.8	0
	37-60	---	---	---	---
561C2:					
Whalan-----	0-4	12-19	---	5.6-7.3	0
	4-33	13-23	---	5.1-6.5	0
	33-36	20-38	---	5.6-7.8	0
	36-60	---	---	---	---
NewGlarus-----	0-9	9.0-20	---	6.1-7.3	0
	9-23	13-23	---	5.6-7.3	0
	23-36	23-47	---	6.1-7.8	0
	36-60	---	---	---	---
561D2:					
Whalan-----	0-6	12-19	---	5.6-7.3	0
	6-25	13-23	---	5.1-6.5	0
	25-27	20-38	---	5.6-7.8	0
	27-60	---	---	---	---
NewGlarus-----	0-7	9.0-20	---	6.1-7.3	0
	7-21	13-23	---	5.6-7.3	0
	21-30	23-47	---	6.1-7.8	0
	30-60	---	---	---	---
566B:					
Rockton-----	0-10	16-25	---	5.6-7.3	0
	10-21	17-24	---	5.6-7.8	0
	21-25	20-38	---	5.6-7.8	0-5
	25-60	---	---	---	---
Dodgeville-----	0-12	15-26	---	6.1-7.3	0
	12-21	16-24	---	5.6-6.5	0
	21-36	25-50	---	5.1-6.5	0
	36-60	---	---	---	---
566C2:					
Rockton-----	0-9	14-23	---	5.6-7.3	0
	9-20	17-24	---	5.6-7.8	0
	20-24	20-38	---	5.6-7.8	0-5
	24-60	---	---	---	---
Dodgeville-----	0-10	13-24	---	6.1-7.3	0
	10-23	16-24	---	5.6-6.5	0
	23-31	25-50	---	5.1-6.5	0
	31-60	---	---	---	---
566D2:					
Rockton-----	0-8	14-23	---	5.6-7.3	0
	8-20	17-24	---	5.6-7.8	0
	20-22	20-38	---	5.6-7.8	0-5
	22-60	---	---	---	---

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
566D2:					
Dodgeville-----	0-8	13-24	---	6.1-7.3	0
	8-13	16-24	---	5.6-6.5	0
	13-24	25-50	---	5.1-6.5	0
	24-60	---	---	---	---
570A:					
Martinsville-----	0-9	7.0-16	---	5.1-7.3	0
	9-37	10-20	---	5.1-7.3	0
	37-58	7.0-14	---	5.1-7.3	0
	58-64	2.0-11	---	6.1-7.8	0-25
570B:					
Martinsville-----	0-5	7.0-16	---	5.1-7.3	0
	5-12	4.0-13	---	5.1-7.3	0
	12-38	10-19	---	5.1-7.3	0
	38-53	7.0-14	---	5.1-7.3	0
	53-60	2.0-11	---	6.1-7.8	0-25
570C2:					
Martinsville-----	0-9	7.0-14	---	5.1-7.3	0
	9-42	10-19	---	5.1-7.3	0
	42-59	7.0-14	---	5.1-7.3	0
	59-70	2.0-11	---	6.1-7.8	0-25
570D2:					
Martinsville-----	0-7	7.0-14	---	5.1-7.3	0
	7-39	10-19	---	5.1-7.3	0
	39-48	7.0-14	---	5.1-7.3	0
	48-60	2.0-11	---	6.1-7.8	0-25
618B:					
Senachwine-----	0-11	7.0-17	---	5.6-7.3	0
	11-32	9.0-20	---	5.1-7.3	0
	32-40	4.0-9.0	---	6.6-7.8	0-20
	40-60	2.0-7.0	---	7.4-8.4	20-45
623A:					
Kishwaukee-----	0-15	13-24	---	5.6-7.3	0
	15-43	13-24	---	5.1-6.5	0
	43-58	10-20	---	5.6-7.3	0
	58-60	0.0-5.0	---	7.4-8.4	0-35
623B:					
Kishwaukee-----	0-11	13-24	---	5.6-7.3	0
	11-45	13-24	---	5.1-6.5	0
	45-57	10-20	---	5.6-7.3	0
	57-60	0.0-5.0	---	7.4-8.4	0-35
624B:					
Caprell-----	0-7	8.0-18	---	5.1-7.3	0
	7-33	11-19	---	5.1-7.3	0
	33-47	6.0-15	---	6.1-8.4	0-30
	47-60	4.0-11	---	7.4-8.4	25-40
624C2:					
Caprell-----	0-10	8.0-16	---	5.1-7.3	0
	10-22	11-19	---	5.1-7.3	0
	22-47	6.0-15	---	6.1-8.4	0-30
	47-60	4.0-11	---	7.4-8.4	25-40

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
624D2:					
Caprell-----	0-8	8.0-16	---	5.1-7.3	0
	8-25	11-19	---	5.1-7.3	0
	25-38	6.0-15	---	6.1-8.4	0-30
	38-60	4.0-11	---	7.4-8.4	25-40
624E:					
Caprell-----	0-9	8.0-18	---	5.1-7.3	0
	9-28	11-19	---	5.1-7.3	0
	28-43	6.0-15	---	6.1-8.4	0-30
	43-60	4.0-11	---	7.4-8.4	25-40
625B:					
Geryune-----	0-14	16-26	---	5.6-7.3	0
	14-28	15-25	---	5.1-7.3	0
	28-43	12-21	---	5.6-7.8	0-20
	43-60	9.0-13	---	7.4-8.4	15-40
626A:					
Kish-----	0-11	20-28	---	7.4-8.4	5-30
	11-47	11-23	---	7.4-8.4	5-30
	47-60	7.0-20	---	7.4-8.4	5-30
635A:					
Lismod-----	0-15	16-26	---	5.1-7.3	0
	15-35	15-25	---	5.1-7.3	0
	35-39	12-21	---	6.1-7.8	0-20
	39-80	9.0-13	---	7.4-8.4	15-40
635B:					
Lismod-----	0-12	16-26	---	5.1-7.3	0
	12-32	15-25	---	5.1-7.3	0
	32-37	12-21	---	6.1-7.8	0-20
	37-60	9.0-13	---	7.4-8.4	15-40
636B:					
Parmod-----	0-12	16-24	---	5.6-7.3	0
	12-34	14-22	---	5.6-7.3	0
	34-38	12-16	---	6.1-7.8	0-20
	38-60	9.0-13	---	7.4-8.4	15-40
636C2:					
Parmod-----	0-8	14-22	---	5.6-7.3	0
	8-27	14-22	---	5.6-7.3	0
	27-33	12-16	---	6.1-7.8	0-20
	33-60	9.0-13	---	7.4-8.4	15-40
667C2:					
Kaneville-----	0-8	13-22	---	5.6-7.3	0
	8-41	17-22	---	5.6-7.8	0
	41-50	9.0-20	---	6.1-8.4	0-10
	50-60	6.0-18	---	6.1-8.4	0-20
675A:					
Greenbush-----	0-9	13-21	---	5.1-7.3	0
	9-16	12-22	---	5.1-7.3	0
	16-46	20-28	13-18	4.5-7.3	0
	46-60	13-21	---	5.6-7.3	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
675B:					
Greenbush-----	0-6	16-21	---	5.1-7.3	0
	6-17	12-22	---	5.1-7.3	0
	17-75	20-28	13-18	4.5-7.3	0
	75-80	13-21	---	5.6-7.3	0
728B:					
Winnebago-----	0-15	15-24	---	5.1-6.5	0
	15-66	15-23	---	5.1-6.0	0
	66-74	9.0-16	---	5.6-7.8	0-15
728C2:					
Winnebago-----	0-8	13-22	---	5.1-6.5	0
	8-55	15-23	---	5.1-6.0	0
	55-60	9.0-16	---	5.6-7.8	0-15
766A:					
Lamartine-----	0-9	14-24	---	5.1-7.3	0
	9-25	16-23	---	5.1-7.3	0
	25-39	12-22	---	6.1-7.8	0-20
	39-60	9.0-13	---	7.4-8.4	20-40
768C:					
Backbone-----	0-8	5.0-11	---	5.6-7.3	0
	8-11	4.0-9.0	---	5.1-7.3	0
	11-17	8.0-12	---	5.1-7.3	0
	17-25	15-26	---	5.6-7.3	0
	25-60	---	---	---	---
771A:					
Hayfield-----	0-8	13-22	---	5.6-7.3	0
	8-14	10-16	---	5.6-7.3	0
	14-24	10-16	---	5.1-6.5	0
	24-60	0.0-3.0	---	5.6-7.8	0-5
772A:					
Marshan-----	0-17	18-28	---	5.6-7.3	0
	17-20	16-25	---	5.6-7.3	0
	20-24	10-19	---	5.6-7.3	0
	24-60	1.0-5.0	---	6.1-7.3	0
777A:					
Adrian-----	0-7	140-200	---	5.1-7.3	0
	7-40	100-200	---	5.1-7.3	0
	40-60	0.0-7.0	---	6.1-8.4	0-10
779B:					
Chelsea-----	0-5	2.0-10	---	5.1-7.3	0
	5-11	1.0-7.0	---	5.1-7.3	0
	11-33	1.0-7.0	---	5.1-6.0	0
	33-80	2.0-7.0	---	5.1-6.0	0
779D:					
Chelsea-----	0-4	2.0-10	---	5.1-7.3	0
	4-35	1.0-7.0	---	5.1-7.3	0
	35-60	2.0-7.0	---	5.1-6.0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-	Effective	Soil	Calcium
		exchange capacity	cation- exchange capacity	reaction	carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
780B:					
Grellton-----	0-7	7.0-15	---	5.1-7.3	0
	7-11	4.0-12	---	5.1-7.3	0
	11-22	12-20	---	5.1-7.3	0
	22-36	11-19	---	5.1-7.3	0
	36-45	3.0-13	---	5.6-7.3	0
	45-60	11-19	---	5.6-8.4	0-20
780C2:					
Grellton-----	0-5	7.0-15	---	5.1-7.3	0
	5-23	12-21	---	5.1-7.3	0
	23-47	11-19	---	5.1-7.3	0
	47-55	3.0-13	---	5.6-7.3	0
	55-60	11-19	---	5.6-8.4	0-20
781A:					
Friesland-----	0-14	9.0-19	---	5.6-7.3	0
	14-34	12-21	---	5.6-7.3	0
	34-50	10-19	---	5.6-7.3	0
	50-60	3.0-13	---	6.1-8.4	0-25
781B:					
Friesland-----	0-19	9.0-19	---	5.6-7.3	0
	19-35	12-21	---	5.6-7.3	0
	35-45	10-19	---	5.6-7.3	0
	45-60	3.0-13	---	6.1-8.4	0-25
782A:					
Juneau-----	0-9	8.0-17	---	5.6-7.8	0
	9-33	7.0-15	---	5.6-7.8	0
	33-51	7.0-24	---	5.6-7.8	0
	51-60	6.0-19	---	5.6-7.8	0
783A:					
Flagler-----	0-23	9.0-17	---	5.6-7.3	0
	23-33	6.0-13	---	5.1-6.5	0
	33-41	2.0-7.0	---	5.1-7.3	0
	41-70	1.0-6.0	---	5.1-7.3	0
783B:					
Flagler-----	0-19	9.0-17	---	5.6-7.3	0
	19-31	6.0-13	---	5.1-6.5	0
	31-35	2.0-7.0	---	5.1-7.3	0
	35-60	1.0-6.0	---	5.1-7.3	0
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
802B:					
Orthents, loamy-----	0-8	10-25	---	5.6-7.8	0-10
	8-60	10-20	---	5.6-8.4	0-20
864.					
Pits, quarry					

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
865. Pits, gravel					
939C2:					
Rodman-----	0-7	8.0-19	---	6.6-7.8	0-15
	7-14	2.0-17	---	6.6-7.8	0-25
	14-60	0.0-7.0	---	7.4-8.4	10-45
Warsaw-----	0-9	13-23	---	5.6-7.3	0
	9-28	11-22	---	5.1-7.3	0
	28-60	1.0-7.0	---	7.4-8.4	15-35
939D2:					
Rodman-----	0-7	8.0-19	---	6.6-7.8	0-15
	7-13	2.0-17	---	6.6-7.8	0-25
	13-60	0.0-7.0	---	7.4-8.4	10-45
Warsaw-----	0-7	13-23	---	5.6-7.3	0
	7-27	11-22	---	5.1-7.3	0
	27-60	1.0-7.0	---	7.4-8.4	15-35
969E2:					
Casco-----	0-5	8.0-19	---	5.6-7.3	0
	5-19	11-23	---	5.6-7.8	0-5
	19-60	0.0-4.0	---	7.4-8.4	1-25
Rodman-----	0-6	8.0-19	---	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
1082A:					
Millington-----	0-21	20-28	---	7.4-8.4	5-20
	21-37	14-27	---	7.4-8.4	5-30
	37-60	11-25	---	7.4-8.4	10-30
1100A:					
Palms-----	0-14	150-200	---	5.1-7.8	0
	14-35	150-200	---	5.1-7.8	0
	35-60	5.0-33	---	6.1-8.4	0-20
1103A:					
Houghton-----	0-12	140-200	---	5.1-7.3	0
	12-60	100-200	---	5.1-7.3	0
1776A:					
Comfrey, frequently flooded-----	0-7	16-24	---	6.1-7.8	0
	7-26	16-29	---	6.1-7.8	0
	26-37	15-28	---	6.1-7.8	0-10
	37-63	12-26	---	6.6-8.4	0-20
Comfrey, occasionally flooded	0-8	16-24	---	6.1-7.8	0
	8-29	16-29	---	6.1-7.8	0
	29-49	15-28	---	6.1-7.8	0-10
	49-65	12-26	---	6.6-8.4	0-20
1777A:					
Adrian-----	0-16	140-200	---	5.1-7.3	0
	16-34	100-200	---	5.1-7.3	0
	34-60	0.0-7.0	---	6.1-8.4	0-10

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
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
3107A:					
Sawmill-----	0-10	23-36	---	6.1-7.8	0
	10-32	23-36	---	6.1-7.8	0
	32-58	18-34	---	6.1-7.8	0
	58-65	18-34	---	6.1-7.8	0-5
3415A:					
Orion-----	0-7	7.0-20	---	5.6-7.8	0
	7-22	7.0-20	---	5.6-7.8	0
	22-60	10-35	---	5.6-7.8	0
3776A:					
Comfrey-----	0-7	16-24	---	6.1-7.8	0
	7-26	16-29	---	6.1-7.8	0
	26-37	15-28	---	6.1-7.8	0-10
	37-63	12-26	---	6.6-8.4	0-20
3800A:					
Psammets-----	0-60	0.1-9.0	---	4.5-7.3	0
	60-80	0.1-6.0	---	4.5-7.3	0
8082A:					
Millington-----	0-26	20-28	---	7.4-8.4	5-20
	26-36	14-27	---	7.4-8.4	5-30
	36-62	11-25	---	7.4-8.4	10-30
8776A:					
Comfrey-----	0-8	16-24	---	6.1-7.8	0
	8-29	16-29	---	6.1-7.8	0
	29-49	15-28	---	6.1-7.8	0-10
	49-65	12-26	---	6.6-8.4	0-20
8782A:					
Juneau-----	0-8	8.0-17	---	5.6-7.8	0
	8-24	7.0-15	---	5.6-7.8	0
	24-35	7.0-24	---	5.6-7.8	0
	35-60	6.0-19	---	5.6-7.8	0
9061A:					
Atterberry-----	0-9	11-28	---	6.1-7.3	0
	9-17	9.0-24	---	5.6-6.5	0
	17-48	16-29	---	5.1-6.0	0
	48-60	9.0-23	---	5.6-7.8	0-8
9068A:					
Sable-----	0-19	26-33	---	5.6-7.3	0
	19-23	20-29	---	5.6-7.3	0
	23-47	15-23	---	5.6-7.8	0
	47-60	12-18	---	6.6-8.4	0-30
9278A:					
Stronghurst-----	0-7	14-22	---	5.1-7.3	0
	7-11	13-18	---	5.1-7.3	0
	11-47	17-23	---	5.1-7.3	0
	47-60	12-17	---	5.6-7.8	0-15

Table 24.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
21B: Pecatonica-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
21C2: Pecatonica-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
22B: Westville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
22C2: Westville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
22D2: Westville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
51A: Muscatune-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
59A: Lisbon-----	B	---	---	None	---	None	Jan-May	1.0-2.0	2.0-4.0	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
61A: Atterberry-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
62A: Herbert-----	B	---	---	None	---	None	Jan-May	0.5-2.0	2.0-4.0	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
68A: Sable-----	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
68A+: Sable-----	B/D	0.0-0.5	Brief	Occasional	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
86A: Osco-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
86B: Osco-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
87A: Dickinson-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
100A: Palms-----	A/D	0.0-1.0	Brief	Frequent	---	None	Jan-Jun	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	0.0-1.0	>6.0	Apparent

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding		Flooding		Months	Water table			
		Surface water depth	Duration	Frequency	Duration		Frequency	Upper limit	Lower limit	Kind of water table
		Ft					Ft	Ft		
102A: La Hogue-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
103A: Houghton-----	A/D	0.0-1.0	Brief	Frequent	---	None	Jan-Jun	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	0.0-1.0	>6.0	Apparent
104A: Virgil-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
119B: Elco-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.8-4.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
125A: Selma-----	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
134A: Camden-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
146A: Elliott-----	C	---	---	None	---	None	Jan-May	1.0-2.0	1.7-4.3	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
148A: Proctor-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
148B: Proctor-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
149A: Brenton-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
152A: Drummer-----	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
152A+: Drummer-----	B	0.0-0.5	Brief	Occasional	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
153A: Pella-----	B	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
172A: Hoopeston-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
188A: Beardstown-----	C	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
197A: Troxel-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
198A: Elburn-----	B	---	---	None	---	None	Jan-May Jun-Dec	1.0-2.0 >6.0	>6.0 >6.0	Apparent ---
199A: Plano-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
199B: Plano-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
199C2: Plano-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
206A: Thorp-----	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May Jun-Dec	0.0-1.0 >6.0	>6.0 >6.0	Apparent ---
219A: Millbrook-----	B	---	---	None	---	None	Jan-May Jun-Dec	0.5-2.0 >6.0	>6.0 >6.0	Apparent ---
221B: Parr-----	B	---	---	None	---	None	Jan Feb-Apr May-Dec	>6.0 2.0-3.5 >6.0	>6.0 2.5-4.0 >6.0	--- Perched ---
221C2: Parr-----	B	---	---	None	---	None	Jan Feb-Apr May-Dec	>6.0 2.0-3.5 >6.0	>6.0 2.5-4.0 >6.0	--- Perched ---
223B: Varna-----	C	---	---	None	---	None	Jan Feb-Apr May-Dec	>6.0 2.0-3.5 >6.0	>6.0 2.2-5.5 >6.0	--- Perched ---
227B: Argyle-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
242A: Kendall-----	B	---	---	None	---	None	Jan-May Jun-Dec	0.5-2.0 >6.0	>6.0 >6.0	Apparent ---
243A: St. Charles-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
243B: St. Charles-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
243C2: St. Charles-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
278A: Stronghurst-----	B	---	---	None	---	None	Jan-May Jun-Dec	0.5-2.0 >6.0	>6.0 >6.0	Apparent ---
279A: Rozetta-----	B	---	---	None	---	None	Jan Feb-Apr May-Dec	>6.0 4.0-6.0 >6.0	>6.0 >6.0 >6.0	--- Apparent ---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding		Flooding		Months	Water table			
		Surface water depth	Duration	Frequency	Duration		Frequency	Upper limit	Lower limit	Kind of water table
		Ft					Ft	Ft		
280B: Fayette-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
280C2: Fayette-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
290A: Warsaw-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
290B: Warsaw-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
290C2: Warsaw-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
290D2: Warsaw-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
293A: Andres-----	C	---	---	None	---	None	Jan-May Jun-Dec	1.0-2.0 >6.0	3.0-5.5 >6.0	Perched ---
297B: Ringwood-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
297C2: Ringwood-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
297D2: Ringwood-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
310B: McHenry-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
310C2: McHenry-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
310D2: McHenry-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
325B: Dresden-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
325C2: Dresden-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
327B: Fox-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
327C2: Fox-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
327D2: Fox-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
329A: Will-----	B/D	0.0-0.5 ---	Brief ---	Frequent ---	---	None ---	Jan-May Jun-Dec	0.0-1.0 >6.0	>6.0 >6.0	Apparent ---
332A: Billett-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding		Flooding		Months	Water table			
		Surface water depth	Duration	Frequency	Duration		Frequency	Upper limit	Lower limit	Kind of water table
		Ft					Ft	Ft		
332B: Billett-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
343A: Kane-----	B	---	---	None	---	None	Jan-May Jun-Dec	1.0-2.0 >6.0	>6.0 >6.0	Apparent ---
344A: Harvard-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
344B: Harvard-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
354A: Hononegah-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
354B: Hononegah-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
361B: Kidder-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
361C2: Kidder-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
361D2: Kidder-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
361D3: Kidder-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
361E2: Kidder-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
363C2: Griswold-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
363D2: Griswold-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
369A: Waupecan-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
379A: Dakota-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
387A: Ockley-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
387B: Ockley-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
403E: Elizabeth-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
412B: Ogle-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
419A: Flagg-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
419B: Flagg-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
419C2: Flagg-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
440A: Jasper-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
440B: Jasper-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
440C2: Jasper-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
490A: Odell-----	B	---	---	None	---	None	Jan-May Jun-Dec	1.0-2.0 >6.0	2.5-4.0 >6.0	Perched ---
503B: Rockton-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
505D2: Dunbarton-----	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
505E2: Dunbarton-----	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
506B: Hitt-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
512A: Danabrook-----	B	---	---	None	---	None	Jan Feb-Apr May-Dec	>6.0 2.0-3.5 >6.0	>6.0 3.0-5.0 >6.0	---
512B: Danabrook-----	B	---	---	None	---	None	Jan Feb-Apr May-Dec	>6.0 2.0-3.5 >6.0	>6.0 3.0-5.0 >6.0	---
512C2: Danabrook-----	B	---	---	None	---	None	Jan Feb-Apr May-Dec	>6.0 2.0-3.5 >6.0	>6.0 3.0-5.0 >6.0	---
523A: Dunham-----	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May Jun-Dec	0.0-1.0 >6.0	>6.0 >6.0	Apparent ---
526A: Grundelein-----	B	---	---	None	---	None	Jan-May Jun-Dec	1.0-2.0 >6.0	>6.0 >6.0	Apparent ---
527B: Kidami-----	B	---	---	None	---	None	Jan Feb-Apr May-Dec	>6.0 2.0-3.5 >6.0	>6.0 2.5-4.5 >6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
527C2: Kidami-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.5-4.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
527D2: Kidami-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.5-4.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
528A: Lahoguess-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
529A: Selmass-----	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
543B: Piscasaw-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
544A: Torox-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
545A: Windere-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
545B: Windere-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
561B: Whalan-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
NewGlarus-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
561C2: Whalan-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
NewGlarus-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
561D2: Whalan-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
NewGlarus-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
566B: Rockton-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Dodgeville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
566C2: Rockton-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Dodgeville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
566D2: Rockton-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Dodgeville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
570A: Martinsville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
570B: Martinsville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
570C2: Martinsville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
570D2: Martinsville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
618B: Senawhine-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
623A: Kishwaukee-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
623B: Kishwaukee-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
624B: Caprell-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
624C2: Caprell-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
624D2: Caprell-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
624E: Caprell-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
625B: Geryune-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
626A: Kish-----	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
635A: Lismod-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
635B: Lismod-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
636B: Parmod-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
636C2: Parmod-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding		Flooding		Months	Water table			
		Surface water depth	Duration	Frequency	Duration		Frequency	Upper limit	Lower limit	Kind of water table
		Ft					Ft	Ft		
667C2: Kaneville-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
675A: Greenbush-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
675B: Greenbush-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
728B: Winnebago-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
728C2: Winnebago-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
766A: Lamartine-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
768C: Backbone-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
771A: Hayfield-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
772A: Marshan-----	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
777A: Adrian-----	A/D	0.0-1.0	Brief	Frequent	---	None	Jan-Jun	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	0.0-1.0	>6.0	Apparent
779B: Chelsea-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
779D: Chelsea-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
780B: Grellton-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
780C2: Grellton-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
781A: Friesland-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
781B: Friesland-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
782A: Juneau-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	3.5-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
783A: Flagler-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
783B: Flagler-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
791A: Rush-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
802B: Orthents, loamy-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	3.5-5.0	4.0-6.0	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
864. Pits, quarry										
865. Pits, gravel										
939C2: Rodman-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Warsaw-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
939D2: Rodman-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Warsaw-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
969E2: Casco-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Rodman-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
1082A: Millington-----	B/D	0.0-0.5	Long	Frequent	Brief	Occasional	Jan-Jun	0.0-0.5	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	0.0-0.5	>6.0	Apparent
1100A: Palms-----	A/D	0.0-1.0	Long	Frequent	Brief	Frequent	Jan-Jun	0.0-0.5	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	0.0-0.5	>6.0	Apparent
		---	---	---	---	---	Nov-Dec	0.0-0.5	>6.0	Apparent
1103A: Houghton-----	A/D	0.0-1.0	Long	Frequent	Brief	Frequent	Jan-Jun	0.0-0.5	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	0.0-0.5	>6.0	Apparent
		---	---	---	---	---	Nov-Dec	0.0-0.5	>6.0	Apparent
1776A: Comfrey, frequently flooded-----	B/D	0.0-0.5	Long	Frequent	Brief	Frequent	Jan-Jun	0.0-0.5	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	0.0-0.5	>6.0	Apparent

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding			Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency	Upper limit		Lower limit	Kind of water table	
		Ft						Ft	Ft		
1776A: Comfrey, occasionally flooded-----	B/D	0.0-0.5	Long	Frequent	Brief	Occasional	Jan-Jun	0.0-0.5	>6.0	Apparent	
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---	
		---	---	---	---	---	Nov-Dec	0.0-0.5	>6.0	Apparent	
1777A: Adrian-----	A/D	0.0-1.0	Long	Frequent	Brief	Frequent	Jan-Jun	0.0-0.5	>6.0	Apparent	
		---	---	---	---	---	Jul-Oct	0.0-0.5	>6.0	Apparent	
		---	---	---	---	---	Nov-Dec	0.0-0.5	>6.0	Apparent	
3082A: Millington-----	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent	
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---	
3107A: Sawmill-----	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent	
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---	
3415A: Orion-----	B	---	---	None	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent	
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---	
3776A: Comfrey-----	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent	
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---	
3800A: Psamments-----	A	---	---	None	Brief	Frequent	Jan	>6.0	>6.0	---	
		---	---	---	Brief	Frequent	Feb-Apr	4.0-6.0	>6.0	Apparent	
		---	---	---	Brief	Frequent	May-Dec	>6.0	>6.0	---	
8082A: Millington-----	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent	
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---	
8776A: Comfrey-----	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent	
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---	
8782A: Juneau-----	B	---	---	None	Brief	Occasional	Jan	>6.0	>6.0	---	
		---	---	---	Brief	Occasional	Feb-Apr	3.5-6.0	>6.0	Apparent	
		---	---	---	Brief	Occasional	May-Dec	>6.0	>6.0	---	
9061A: Atterberry-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent	
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---	
9068A: Sable-----	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent	
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---	
9278A: Stronghurst-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent	
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---	

Table 25.--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	Hardness	Initial	Total		Uncoated steel	Concrete
21B: Pecatonica-----	---	---	---	---	---	Moderate	Moderate	Moderate
21C2: Pecatonica-----	---	---	---	---	---	Moderate	Moderate	Moderate
22B: Westville-----	---	---	---	---	---	Moderate	Moderate	Moderate
22C2: Westville-----	---	---	---	---	---	Moderate	Moderate	Moderate
22D2: Westville-----	---	---	---	---	---	Moderate	Moderate	Moderate
51A: Muscatune-----	---	---	---	---	---	High	High	Moderate
59A: Lisbon-----	---	---	---	---	---	High	High	Moderate
61A: Atterberry-----	---	---	---	---	---	High	High	Moderate
62A: Herbert-----	---	---	---	---	---	High	High	Moderate
68A: Sable-----	---	---	---	---	---	High	High	Moderate
68A+: Sable-----	---	---	---	---	---	High	High	Moderate
86A: Osco-----	---	---	---	---	---	High	Moderate	Moderate
86B: Osco-----	---	---	---	---	---	High	Moderate	Moderate
87A: Dickinson-----	---	---	---	---	---	Moderate	Low	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness	Initial In	Total In		Uncoated steel	Concrete
100A: Palms-----	---	---	---	4-15	25-32	High	High	High
102A: La Hogue-----	---	---	---	---	---	Moderate	High	Moderate
103A: Houghton-----	---	---	---	6-18	55-60	High	High	High
104A: Virgil-----	---	---	---	---	---	High	High	Moderate
119B: Elco-----	---	---	---	---	---	High	High	Moderate
125A: Selma-----	---	---	---	---	---	High	High	Low
134A: Camden-----	---	---	---	---	---	High	Moderate	Moderate
146A: Elliott-----	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
148A: Proctor-----	---	---	---	---	---	High	Moderate	Moderate
148B: Proctor-----	---	---	---	---	---	High	Moderate	Moderate
149A: Brenton-----	---	---	---	---	---	High	High	Moderate
152A: Drummer-----	---	---	---	---	---	High	High	Moderate
152A+: Drummer-----	---	---	---	---	---	High	High	Moderate
153A: Pella-----	---	---	---	---	---	High	High	Low
172A: Hoopeston-----	---	---	---	---	---	Moderate	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
188A: Beardstown-----	---	---	---	---	---	High	High	Moderate
197A: Troxel-----	---	---	---	---	---	High	Moderate	Moderate
198A: Elburn-----	---	---	---	---	---	High	High	Moderate
199A: Plano-----	---	---	---	---	---	High	Moderate	Moderate
199B: Plano-----	---	---	---	---	---	High	Moderate	Moderate
199C2: Plano-----	---	---	---	---	---	High	Moderate	Moderate
206A: Thorp-----	---	---	---	---	---	High	High	Moderate
219A: Millbrook-----	---	---	---	---	---	High	High	Moderate
221B: Parr-----	---	---	---	---	---	Moderate	High	Moderate
221C2: Parr-----	---	---	---	---	---	Moderate	High	Moderate
223B: Varna-----	Dense material	24-60	Noncemented	---	---	Moderate	High	Moderate
227B: Argyle-----	---	---	---	---	---	Moderate	Moderate	Moderate
242A: Kendall-----	---	---	---	---	---	High	High	High
243A: St. Charles-----	---	---	---	---	---	High	Moderate	High
243B: St. Charles-----	---	---	---	---	---	High	Moderate	High

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
243C2: St. Charles-----	---	---	---	---	---	High	Moderate	High
278A: Stronghurst-----	---	---	---	---	---	High	High	Moderate
279A: Rozetta-----	---	---	---	---	---	High	Moderate	High
280B: Fayette-----	---	---	---	---	---	High	Moderate	High
280C2: Fayette-----	---	---	---	---	---	High	Moderate	High
290A: Warsaw-----	---	---	---	---	---	Moderate	Moderate	Moderate
290B: Warsaw-----	---	---	---	---	---	Moderate	Moderate	Moderate
290C2: Warsaw-----	---	---	---	---	---	Moderate	Moderate	Moderate
290D2: Warsaw-----	---	---	---	---	---	Moderate	Moderate	Moderate
293A: Andres-----	---	---	---	---	---	Moderate	High	Low
297B: Ringwood-----	---	---	---	---	---	Moderate	Moderate	Moderate
297C2: Ringwood-----	---	---	---	---	---	Moderate	Moderate	Moderate
297D2: Ringwood-----	---	---	---	---	---	Moderate	Moderate	Moderate
310B: McHenry-----	---	---	---	---	---	Moderate	Moderate	Moderate
310C2: McHenry-----	---	---	---	---	---	Moderate	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
310D2: McHenry-----	---	---	---	---	---	Moderate	Moderate	Moderate
325B: Dresden-----	---	---	---	---	---	Moderate	Moderate	Moderate
325C2: Dresden-----	---	---	---	---	---	Moderate	Moderate	Moderate
327B: Fox-----	---	---	---	---	---	Moderate	Moderate	Moderate
327C2: Fox-----	---	---	---	---	---	Moderate	Moderate	Moderate
327D2: Fox-----	---	---	---	---	---	Moderate	Moderate	Moderate
329A: Will-----	---	---	---	---	---	High	High	Moderate
332A: Billett-----	---	---	---	---	---	Moderate	Low	Moderate
332B: Billett-----	---	---	---	---	---	Moderate	Low	Moderate
343A: Kane-----	---	---	---	---	---	Moderate	High	Moderate
344A: Harvard-----	---	---	---	---	---	High	Moderate	Moderate
344B: Harvard-----	---	---	---	---	---	High	Moderate	Moderate
354A: Hononegah-----	---	---	---	---	---	Low	Low	Low
354B: Hononegah-----	---	---	---	---	---	Low	Low	Low
361B: Kidder-----	---	---	---	---	---	Moderate	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
361C2: Kidder-----	---	---	---	---	---	Moderate	Moderate	Moderate
361D2: Kidder-----	---	---	---	---	---	Moderate	Moderate	Low
361D3: Kidder-----	---	---	---	---	---	Moderate	Moderate	Low
361E2: Kidder-----	---	---	---	---	---	Moderate	Moderate	Moderate
363C2: Griswold-----	---	---	---	---	---	Moderate	Moderate	Low
363D2: Griswold-----	---	---	---	---	---	Moderate	Moderate	Low
369A: Waupecan-----	---	---	---	---	---	High	Moderate	Moderate
379A: Dakota-----	---	---	---	---	---	Moderate	Moderate	Moderate
387A: Ockley-----	---	---	---	---	---	Moderate	Moderate	High
387B: Ockley-----	---	---	---	---	---	Moderate	Moderate	High
403E: Elizabeth-----	Bedrock (lithic)	7-20	Very strongly cemented	---	---	Moderate	Low	Low
412B: Ogle-----	---	---	---	---	---	High	Moderate	Moderate
419A: Flagg-----	---	---	---	---	---	High	Moderate	High
419B: Flagg-----	---	---	---	---	---	High	Moderate	High
419C2: Flagg-----	---	---	---	---	---	High	Moderate	High

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
440A: Jasper-----	---	---	---	---	---	Moderate	Moderate	Moderate
440B: Jasper-----	---	---	---	---	---	Moderate	Moderate	Moderate
440C2: Jasper-----	---	---	---	---	---	Moderate	Moderate	Moderate
490A: Odell-----	---	---	---	---	---	Moderate	High	Moderate
503B: Rockton-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	Moderate	Moderate	Moderate
505D2: Dunbarton-----	Bedrock (lithic)	12-20	Very strongly cemented	---	---	Moderate	High	Low
505E2: Dunbarton-----	Bedrock (lithic)	12-20	Very strongly cemented	---	---	Moderate	High	Low
506B: Hitt-----	Bedrock (lithic)	40-60	Very strongly cemented	---	---	Moderate	Moderate	Moderate
512A: Danabrook-----	---	---	---	---	---	High	High	Moderate
512B: Danabrook-----	---	---	---	---	---	High	High	Moderate
512C2: Danabrook-----	---	---	---	---	---	High	High	Moderate
523A: Dunham-----	---	---	---	---	---	High	High	Moderate
526A: Grundelein-----	---	---	---	---	---	High	High	Moderate
527B: Kidami-----	---	---	---	---	---	Moderate	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
527C2: Kidami-----	---	---	---	---	---	Moderate	High	Moderate
527D2: Kidami-----	---	---	---	---	---	Moderate	High	Moderate
528A: Lahoguess-----	---	---	---	---	---	Moderate	High	Moderate
529A: Selmass-----	---	---	---	---	---	High	High	Moderate
543B: Piscasaw-----	---	---	---	---	---	High	Moderate	Moderate
544A: Torox-----	---	---	---	---	---	High	High	Moderate
545A: Windere-----	---	---	---	---	---	High	High	Moderate
545B: Windere-----	---	---	---	---	---	High	High	Moderate
561B: Whalan-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	Moderate	Moderate	Moderate
NewGlarus-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	High	Moderate	Moderate
561C2: Whalan-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	Moderate	Moderate	Moderate
NewGlarus-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	High	Moderate	Moderate
561D2: Whalan-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	Moderate	Moderate	Moderate
NewGlarus-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	High	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
566B: Rockton-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	Moderate	Moderate	Moderate
Dodgeville-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	High	Moderate	Moderate
566C2: Rockton-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	Moderate	Moderate	Moderate
Dodgeville-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	High	Moderate	Moderate
566D2: Rockton-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	Moderate	Moderate	Moderate
Dodgeville-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	High	Moderate	Moderate
570A: Martinsville-----	---	---	---	---	---	Moderate	Moderate	Moderate
570B: Martinsville-----	---	---	---	---	---	Moderate	Moderate	Moderate
570C2: Martinsville-----	---	---	---	---	---	Moderate	Moderate	Moderate
570D2: Martinsville-----	---	---	---	---	---	Moderate	Moderate	Moderate
618B: Senachwine-----	---	---	---	---	---	Moderate	Moderate	Moderate
623A: Kishwaukee-----	---	---	---	---	---	Moderate	Moderate	Moderate
623B: Kishwaukee-----	---	---	---	---	---	Moderate	Moderate	Moderate
624B: Caprell-----	---	---	---	---	---	Moderate	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
624C2: Caprell-----	---	---	---	---	---	Moderate	Moderate	Moderate
624D2: Caprell-----	---	---	---	---	---	Moderate	Moderate	Moderate
624E: Caprell-----	---	---	---	---	---	Moderate	Moderate	Moderate
625B: Geryune-----	---	---	---	---	---	High	High	Moderate
626A: Kish-----	---	---	---	---	---	High	High	Low
635A: Lismod-----	---	---	---	---	---	High	High	Moderate
635B: Lismod-----	---	---	---	---	---	High	High	Moderate
636B: Parmod-----	---	---	---	---	---	Moderate	Moderate	Moderate
636C2: Parmod-----	---	---	---	---	---	Moderate	Moderate	Moderate
667C2: Kaneville-----	---	---	---	---	---	High	High	Moderate
675A: Greenbush-----	---	---	---	---	---	High	Moderate	High
675B: Greenbush-----	---	---	---	---	---	High	Moderate	High
728B: Winnebago-----	---	---	---	---	---	Moderate	Moderate	Moderate
728C2: Winnebago-----	---	---	---	---	---	Moderate	Moderate	Moderate
766A: Lamartine-----	---	---	---	---	---	High	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
				In	In			
768C: Backbone-----	Bedrock (lithic)	20-40	Very strongly cemented	---	---	Moderate	Low	Moderate
771A: Hayfield-----	---	---	---	---	---	Moderate	High	Moderate
772A: Marshan-----	---	---	---	---	---	High	High	Moderate
777A: Adrian-----	---	---	---	6-18	29-33	High	High	High
779B: Chelsea-----	---	---	---	---	---	Low	Low	High
779D: Chelsea-----	---	---	---	---	---	Low	Low	High
780B: Grellton-----	---	---	---	---	---	Moderate	Moderate	Moderate
780C2: Grellton-----	---	---	---	---	---	Moderate	Moderate	Moderate
781A: Friesland-----	---	---	---	---	---	Moderate	Moderate	Moderate
781B: Friesland-----	---	---	---	---	---	Moderate	Moderate	Moderate
782A: Juneau-----	---	---	---	---	---	High	High	Moderate
783A: Flagler-----	---	---	---	---	---	Moderate	Low	Moderate
783B: Flagler-----	---	---	---	---	---	Moderate	Low	Moderate
791A: Rush-----	---	---	---	---	---	High	Moderate	High
802B: Orthents, loamy-----	---	---	---	---	---	Moderate	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
864. Pits, quarry								
865. Pits, gravel								
939C2: Rodman-----	---	---	---	---	---	Low	Low	Low
Warsaw-----	---	---	---	---	---	Moderate	Moderate	Moderate
939D2: Rodman-----	---	---	---	---	---	Low	Low	Low
Warsaw-----	---	---	---	---	---	Moderate	Moderate	Moderate
969E2: Casco-----	---	---	---	---	---	Moderate	Moderate	Low
Rodman-----	---	---	---	---	---	Low	Low	Low
1082A: Millington-----	---	---	---	---	---	High	High	Low
1100A: Palms-----	---	---	---	2-4	25-32	High	High	High
1103A: Houghton-----	---	---	---	1-4	55-60	High	High	High
1776A: Comfrey, frequently flooded-----	---	---	---	---	---	High	High	Low
Comfrey, occasionally flooded-----	---	---	---	---	---	High	High	Low
1777A: Adrian-----	---	---	---	6-18	29-33	High	High	High
3082A: Millington-----	---	---	---	---	---	High	High	Low
3107A: Sawmill-----	---	---	---	---	---	High	High	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
3415A: Orion-----	---	---	---	---	---	High	High	Moderate
3776A: Comfrey-----	---	---	---	---	---	High	High	Low
3800A: Psammets-----	---	---	---	---	---	Low	High	Moderate
8082A: Millington-----	---	---	---	---	---	High	High	Low
8776A: Comfrey-----	---	---	---	---	---	High	High	Low
8782A: Juneau-----	---	---	---	---	---	High	High	Moderate
9061A: Atterberry-----	---	---	---	---	---	High	High	Moderate
9068A: Sable-----	---	---	---	---	---	High	High	Moderate
9278A: Stronghurst-----	---	---	---	---	---	High	High	Moderate

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