



United States
Department of
Agriculture

In cooperation with
Illinois Agricultural
Experiment Station

Soil Survey of Will County, Illinois



Natural
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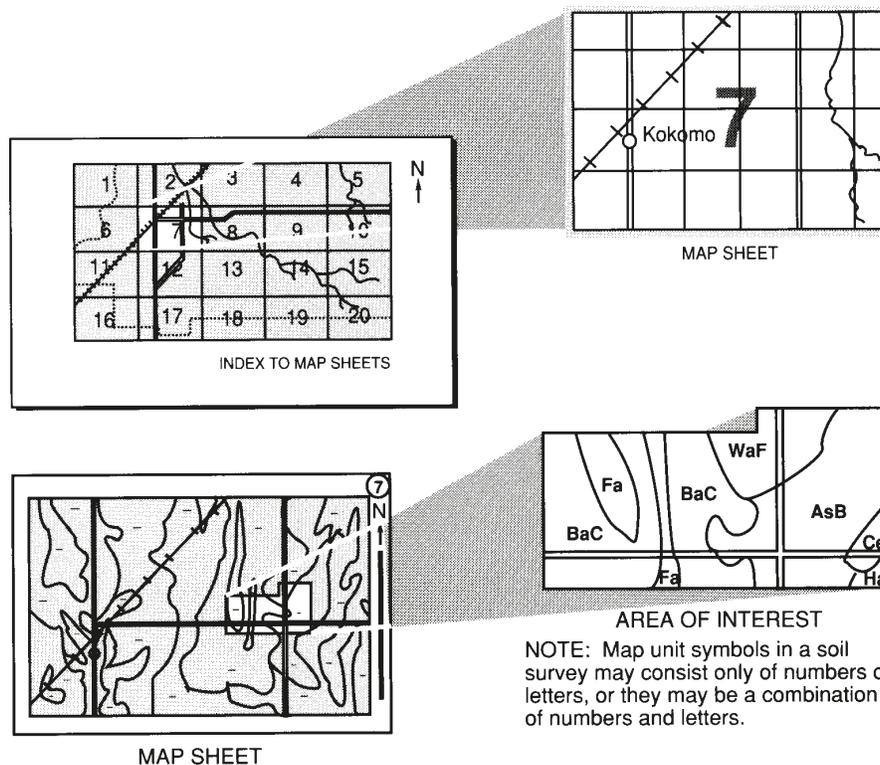
How To Use This Soil Survey

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

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

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

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



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

Major fieldwork for this soil survey was completed in 2001. Soil names and descriptions were approved in 2002. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2001. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. Financial assistance was provided by the Will County Board and the Illinois Department of Agriculture. The survey is part of the technical assistance furnished to the Will-South Cook Soil and Water Conservation District.

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Cover: A scenic view of Prairie Creek in the Des Plaines Conservation Area.

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

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Foreword

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

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

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

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

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

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

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

WILL COUNTY is in the northeastern part of Illinois (fig. 1). It has an area of 543,635 acres, or 849 square miles. It is bordered by Cook and Du Page Counties on the north, Indiana on the east, Grundy and Kendall Counties on the west, and Kankakee County on the south. In the year 2000, the population of the county was 502,266 (U.S. Department of Commerce, 2000). Joliet, the county seat, is the largest city in the county.

This survey area is a subset of Major Land Resource Area (MLRA) 110, the Northern Illinois and Indiana Heavy Till Plain (USDA, 1981). This soil survey updates the survey of Will County published in 1962 (Wascher and others, 1962). It provides additional information and has larger maps, which show the soils in greater detail. It is available on a CD-ROM that includes digital topographic quadrangles (Illinois Natural Resources Conservation Service).

General Nature of the County

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

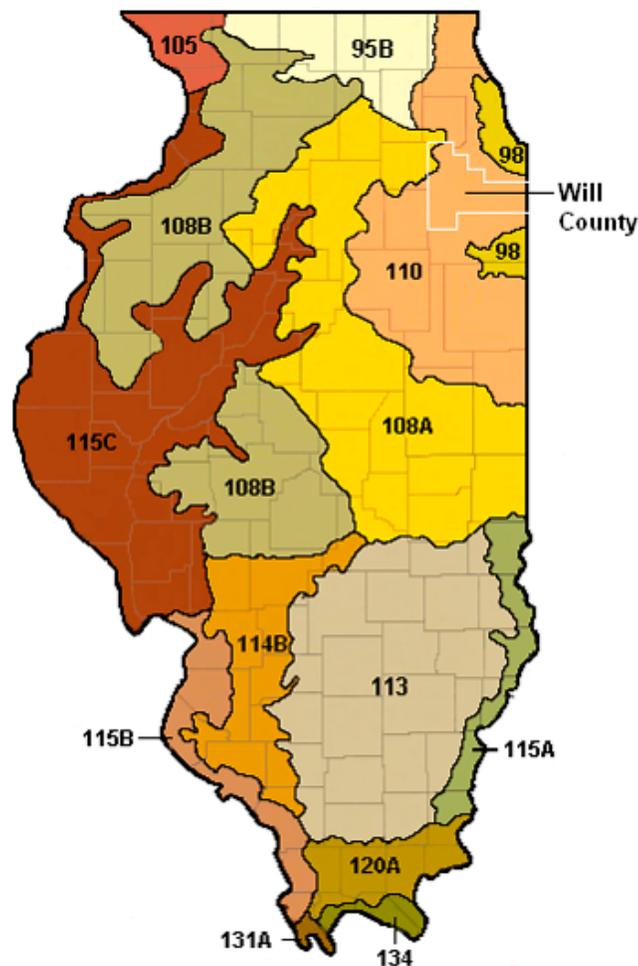
History

The area now known as Will County was a favorite hunting ground for the Indians. It had an abundant supply of water and timber. Travel was facilitated by the old Sauk Trail and by the Des Plaines, Du Page, and Kankakee Rivers. Indian burial mounds indicate that people lived in the survey area 4,000 to 13,000 years ago and that several distinct types of Indians inhabited the area for centuries.

Will County was established in January 1836 by an act of the Illinois Legislature, which subdivided it from Cook County. The county name honored Dr. Conrad Will, a member of the first Constitutional Congress and a member of the Illinois Legislature. The county lost a small area when Kankakee County was organized in 1852. The present county boundaries were established in 1853 (Will County, 2002).

The first permanent settlers of European descent entered the survey area shortly before 1830. Joliet was laid out in 1834.

The Illinois and Michigan Canal, built between 1836 and 1848, had a significant impact on Will County and the Midwest in general. It stretched from Chicago to



LEGEND

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

Figure 1.—Location of Will County and the major land resource areas (MLRAs) in Illinois (USDA, 1981).

LaSalle-Peru Illinois, approximately 100 miles. Once opened, in 1848, it provided a link between the Eastern and Midwestern parts of the country. It linked the waters of Lake Michigan with those of the Illinois and Mississippi Rivers. Many communities sprang up along the route of the canal. In Will County, they include Bolingbrook, Channahon, Crest Hill, Joliet, Lockport, Rockdale, and Romeoville. The canal provided farmers a way to transport their crops. Large quantities of corn and wheat were shipped by canal. Lumber, beef, pork, stone, coal, sugar, and salt were other commodities shipped on the canal. The canal brought people and prosperity to the region. It transformed the region into a hub for goods and people traveling throughout the country. It is now used for recreational purposes. The towpath trail along the canal is a State park that runs through a rural and wooded landscape for about 61 miles. The Illinois and Michigan Canal National Heritage Corridor

encompasses portions of 49 municipalities, sections of 5 counties, and 18 neighborhoods in Chicago (Canal Corridor Association, 2002).

Physiography, Relief, and Drainage

Will County is made up of ground moraines, end moraines, outwash plains, stream terraces, flood plains, and bogs. The county is in the Till Plains and Great Lake Sections of the Central Lowland Province (Leighton and others, 1948). Two further subdivisions make up the county. The Wheaton Morainal Country occurs in the eastern two-thirds of the county, and the Kankakee Plain makes up the rest of the county.

Will County has relatively low relief (fig. 2). Elevation ranges from about 500 feet above sea level in the areas where the Des Plaines and Kankakee Rivers leave the county to about 830 feet on the Valparaiso Moraine, directly west of Monee. Examples of other

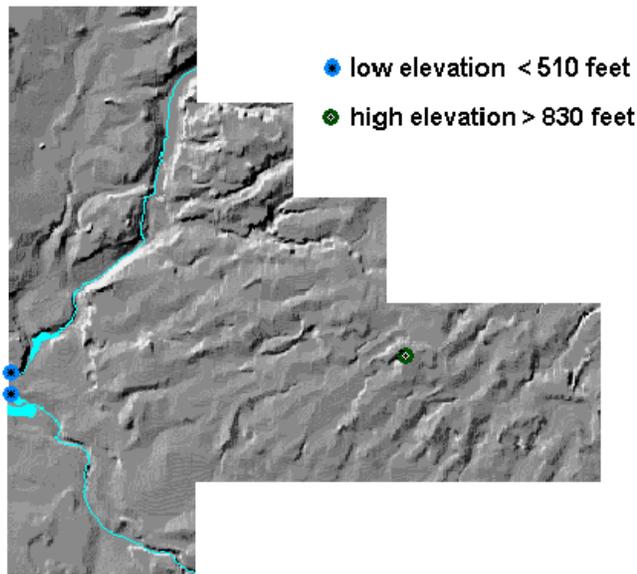


Figure 2.—Generalized relief map of Will County, Illinois, showing the location of the highest and lowest elevations in the county.

elevations in the county are Beecher, 720 feet; Frankfort, 760 feet; Manhattan, 690 feet; Plainfield, 610 feet; and Wilmington, 550 feet.

Several moraines extend through the county. The Minooka Moraine forms a north-south ridge along the Will-Kendall County border. It does not extend south of the Des Plaines River. The Rockdale Moraine begins in northern Will County, where it emerges from under the Valparaiso Moraine and extends southward between the Du Page and Des Plaines Rivers. Three small valleys, formerly glacial drainageways, are traceable through the Rockdale Moraine. A wide break occurs in the Des Plaines River Valley. South of this valley, the moraine extends to Elwood and southeast to about Symerton. The Manhattan Moraine begins directly south of Joliet and extends in a southeasterly direction into Kankakee County. It is broken in several places by small valleys of streams arising in the Valparaiso Moraine to the northeast. The Valparaiso Moraine, a very broad moraine, is the largest of the morainal ridges in Will County, covering most of the northeastern part of the county. It extends into Du Page and Cook Counties on the north and eastward into Indiana. A fairly prominent front occurs along much of its outer margin. In the past this moraine formed a drainage divide between the Illinois and Mississippi River systems and the St. Lawrence River system. The Tinley Moraine touches the extreme northeast corner of Will County at Steger.

Most drainage waters in Will County now flow into the Illinois River through the Du Page, Des Plaines,

and Kankakee Rivers. The waters from Plum Creek and other north-flowing streams formerly flowed into Lake Michigan and then into the St. Lawrence River. After construction of the Chicago Sanitary and Ship Canal and the opening of the Calumet Sag Channel, however, these waters were diverted mostly to the Illinois River (Wascher and others, 1962).

Natural Resources

Will County has several different kinds of natural resources, including construction materials, surface and ground water, and shipping lanes.

Dolomite is quarried at several places, primarily along the Des Plaines River Valley. Much of it is crushed for use in concrete and for agricultural limestone, although some is used for building blocks. Good examples of block buildings are in downtown Joliet. The county has several sand and gravel pits. The largest ones are in the outwash plain east of Plainfield and along Des Plaines River Valley. Sand for building purposes and for molds is mostly screened from gravel in the same pits. Little use is made of clay deposits at present.

Coal deposits, which occurred only in the southwestern part of the county, where they were at a depth of 25 to more than 100 feet and averaged about 3.5 feet in thickness, have been depleted.

Peat and muck occur in limited amounts in the county. In some areas they are mined for local use as lawn and garden dressing.

Surface water and underground water are both relatively abundant in Will County. The Kankakee, Des Plaines, and Du Page Rivers are continuously flowing streams, and the Chicago Sanitary and Ship Canal is kept at a high level by diversion from Lake Michigan. Wells range from shallow (20 or less feet in depth) to deep (more than 200 feet). The shallowest wells tend to be in areas of gravelly outwash plains, such as those in the vicinity of Plainfield. The deepest wells, those that penetrate water-bearing rock strata, are 1,000 or more feet deep. These generally enter St. Peters sandstone, Potsdam sandstone, or some layer of the Prairie du Chien series. Most of the water from deep wells is hard or highly mineralized. It is particularly high in dissolved calcium and magnesium (Wascher and others, 1962).

Agriculture

Like much of Illinois, Will County has some very fertile farmland. Agriculture has been the dominant land use in the county for decades. In 1997, about 58 percent of land in the county was used for agriculture.

In recent years, the market value of Will County agricultural products has consistently exceeded \$107 million per year and more 28 percent of the farms in the county generated annual sales of \$100,000 or more (USDA, 1997). Corn, soybeans, small grain crops, and nursery and greenhouse crops account for 92 percent of the market value of the agricultural products sold in 1997, and livestock, poultry, and related products account for the remaining 8 percent.

While the market value of farm products is increasing, the number of farms and the number of acres farmed have been decreasing. In 1959, the county had 2,366 farms totaling 412,509 acres. In 1997, it had 910 farms totaling 293,526 acres. Thus, the number of farms decreased by nearly 63 percent and the number of acres farmed decreased by nearly 29 percent. This decline has been counteracted by a large increase in average farm size. In 1959, the 2,366 farms in the county averaged 174 acres in size; in 1997, the 910 farms in the county averaged 323 acres in size (USDA, 1997).

Urbanization

The population of Will County increased rapidly and consistently from 1840 through 1960. In 1960, the reported total population was 191,617. Of this number, 135,565 people were listed as urban and 56,052 as rural. Included as rural were all persons living in towns with a population of less than 2,500 as well as persons living on farms (Wascher and others, 1962). The population of the county was 357,313 in 1990 and 502,266 in 2000 (U.S. Department of Commerce, 2000). With a 40.6 percent population increase from 1990 to 2000, Will County is the fastest growing county in Illinois. According to the Northeastern Illinois Planning Commission, this growth was accompanied by a 43 percent increase in the amount of housing.

Transportation Facilities

Will County has a well developed, multimodal transportation system. The county is served by Illinois State Highways 1, 7, 43, 50, 53, 56, 59, 83, 126, 171, and 394; U.S. Highways 6, 12, 30, 45, and 52; and Highways 80, 55, 57, and 355, which are part of the interstate highway system. A well integrated county highway system provides connections between incorporated and unincorporated areas throughout the county.

Public transit services within Will County are provided by Metra Commuter Rail and Pace Suburban Bus under the umbrella of the Regional Transportation Authority.

Water transportation is available in Will County. The Chicago Sanitary and Ship Canal is suitable for heavy barge traffic.

Several major general aviation airports serve Will County. These airports serve local recreational and business flying needs; however, they do not support commercial flights or large jets. The proposed South Suburban Airport would provide commercial service.

Industry

The information in this section was provided by Aimee Ingalls of the Joliet/Will County Center for Economic Development.

Will County has a strong traditional economic base involving a number of activities, including manufacturing, health care, retail sales, construction, education, and administrative services. Economic enterprises include the manufacture of earth-moving equipment, oil refining, utilities (such as gas and electric), and wireless communications. Numerous large business, factories, and power plants of various kinds are along the Des Plaines River Valley. Housing construction is very important in nearly all parts of the county. Sand, gravel, and limestone are mined for concrete work and other purposes. Other businesses and industries have developed in most Will County municipalities and account for many of the traditional manufacturing jobs. Major industrial development areas are in Bolingbrook, Elwood, Joliet, Lockport, Plainfield, and Romeoville.

Between 1998 and 1999, Will County showed the following growth in employment: 14 percent in construction; 59 percent in arts, entertainment, and recreation; and 20 percent in warehousing. In addition, the county has gained jobs in wholesaling, finance, health care, and other services.

Climate

Prepared by the National Water and Climate Center, Natural Resources Conservation Service, Portland, Oregon.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Joliet 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.

In winter, the average temperature is 25.2 degrees F and the average daily minimum temperature is 17.0 degrees. The lowest temperature on record, which occurred at Joliet on January 20, 1985, was -26 degrees. In summer, the average temperature is 72.1 degrees and the average daily maximum temperature is 82.8 degrees. The highest temperature, which

occurred at Joliet on June 26, 1988, was 104 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 36.84 inches. Of this, about 23.04 inches, or about 63 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 13.60 inches at Joliet on July 18, 1996. Thunderstorms occur on about 38 days each year, and most occur between April and September.

The average seasonal snowfall is 10.2 inches. The greatest snow depth on record was 22 inches on December 25, 1951. On the average, 50 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 12.0 inches on January 27, 1967.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 67 percent of the time possible in summer and 46 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 11 to 12 miles per hour, from November to April.

How This Survey Was Made

This survey was made to provide updated information about the soils and miscellaneous areas in Will County, which is a subset of Major Land Resource Area (MLRA) 110 (fig. 1). MLRAs are geographically associated land resource units that share a common land use, elevation, topography, climate, pattern of water and soils, and vegetation (USDA, 1981). Map unit design is based on the occurrence of each soil throughout the MLRAs.

The information in this survey includes a description of the soils and miscellaneous areas and their suitability, limitations, and management for specified uses.

Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They prepared new soil profile descriptions and studied many existing soil profile descriptions. These descriptions show 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 occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind or segment of the landscape. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landscape, soil scientists develop a concept, or model, of how the soils were formed. Thus, during the update, this model enables the soil scientists to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

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

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

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil

scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Interpretations are modified as necessary to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only

on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a seasonal high water table within certain depths in most years, but they cannot predict that the water table will always be at a specific level in the soil on a specific date. After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Formation and Classification of the Soils

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

Formation of the Soils

Soil forms through processes that act on deposited geologic material. The factors of soil formation are the physical and mineralogical composition of the parent material; the climate under which the soil formed; the plant and animal life on and in the soil; relief; and the length of time that 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, 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 the soils. Finally, time is needed for changing the parent material into a soil that has differentiated horizons.

Parent Material

Parent material is the unconsolidated geologic material in which soils form. The soils in Will County formed in parent materials that were directly or indirectly impacted by Illinoian and Wisconsinan Glaciation. The parent materials were distributed by the action of ice, water, and wind. During the glacial epoch, several glaciers advanced across the region now occupied by Will County. These glaciers not only removed old soils, but also deposited large amounts of freshly ground-up rock materials, in which the present-day soils formed.

The glacial flooding episode that affected Will County the most was the Kankakee Torrent. The Kankakee Torrent was a gigantic glacial flood that resulted from the rapid melting of three glaciers concentrated in southern Michigan. The meltwater then cut across northwestern Indiana and through Will and Kankakee Counties. At its highest stage, this flood

of glacial meltwater overflowed the Kankakee Valley and created huge glacial lakes (Lake Wauponsee, Lake Watseka, Lake Ottawa, and Lake Pontiac), which covered most of Iroquois County to the south, most of Grundy County, the southern part of Kendall County, and the western part of Will County. Many of the fine grained lacustrine sediments in Will County were deposited by Lake Wauponsee (Frankie, 1998).

The parent materials in Will County include till, loess or other silty material, outwash, lacustrine material, organic deposits, and alluvium. Some of these materials overlie dolomitic limestone (fig. 3). Bedrock outcrops are common along the Des Plaines and Kankakee Rivers, particularly on the stream bottoms and along some of the bluffs.

The unstratified till in Will County may be divided into three general groups according to the proportions of gravel, sand, silt, and clay. Differences in these proportions are reflected in the texture and permeability of the kinds of till, which, in turn, have influenced and continue to influence soil profile development. Many areas in the northern and eastern parts of the county are covered with 100 to more than 150 feet of till. Till of silt loam texture is in much of the northwest corner of the county. It is moderately permeable or moderately slowly permeable and is considered a more desirable parent material than till of either coarser or finer texture. The most extensive parent material in Will County is till of silty clay loam texture, which is in most of the central and eastern parts of the county. This till is moderately slowly permeable or slowly permeable. Plant roots do not readily penetrate more than a few inches into the unleached till. An area of silty clay till occurs in the northeastern part of the county. Because of the high percentages of silt and clay, permeability is very slow and plant roots seldom penetrate the unleached till, except in cracks or along cleavage faces.

Loess consists mainly of silt with a little clay. It originated from areas barren of vegetation and exposed to wind currents that could separate the fine particles from the coarser fragments. These areas generally were large bottom lands and valley trains of glacial rivers. Although some loess was undoubtedly



Figure 3.—Glacial till over dolomite bedrock.

deposited before the later glacier movements, only that deposited on top of the last or uppermost till and outwash is important to the modern soils. Because loess or other silty material occurs as the surface material, it is responsible for silt loam and silty clay loam textures of the surface layers in about half of the soil types in Will County.

Outwash was deposited by water flowing at different rates down streams, across outwash plains, or into lakes. The variation in waterflow resulted in strata that vary in texture and thickness. Outwash thus ranges from coarse, nearly clean gravel to very fine, nearly pure clay. Generally, however, it is a mixture of two or more particle sizes. Outwash covers much of the southwestern part of the county to a depth of 10 to more than 20 feet. Some sandy and gravelly outwash lies beneath several feet of till in many parts of the county. Medium textured outwash (loam and silt loam) occurs along most of the important streams in all parts of the county. It is excellent soil-forming material,

comparing favorably with silt loam till. Large areas of sandy and gravelly outwash occur along the Du Page, Des Plaines, and Kankakee Rivers, including most of the southwest corner of the county. This is much less desirable parent material than the outwash of loam and silt loam. Fortunately for agriculture, a large portion of the gravel is covered with 1 or more feet of medium textured material. Some loamy gravel occurs on a relatively high ridge in sections 27, 28, 29, 30, and 31, T. 37 N., R. 10 E. (Du Page Township) and extending into section 36, T. 37 N., R. 9 E. (Wheatland Township).

Fine textured lacustrine, or lakebed, sediments are in three minor areas. Two of these are in the northeastern part of the county, one at Steger and the other about 4 miles northeast of Frankfort. The third is a group of small areas of Martinton and Milford soils about 5 miles northwest of Wilmington. These latter appear to be remnants of a former larger lakebed.

Organic deposits consist of decomposed plant remains. After the glaciers receded, water was left standing in depressional areas. As a result, these areas were very wet during soil formation, and the decaying plant material accumulated more quickly than it decomposed. Most of these plant remains are decomposed to a point that they are unrecognizable. These organic deposits are called sapric material. Houghton soils are an example of soils that formed in these deposits.

Alluvium is material recently deposited by streams and rivers on flood plains. The texture of alluvium varies, depending on the velocity of the water source. Du Page soils formed in loamy alluvium.

Areas of loamy or silty material less than 20 inches deep over dolomitic limestone occur along the Des Plaines River. Joliet and Romeo soils are examples of soils that formed over bedrock.

Climate

Will County has a temperate, humid, continental climate. The general climate has had an important overall influence on the characteristics of the soils. It has generally favored prairie grasses and hardwood forests. The climate is essentially uniform throughout the county and has not caused any major differences among the soils.

Climate is important in soil formation because it largely determines the type of weathering that takes place. In most years the county has enough rainfall and melted snowfall to moisten all soils and underlying materials to bedrock or to the permanent water table.

The degree of saturation varies, depending on the thickness and permeability of unconsolidated materials, the water-holding capacity of these materials, and the 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. Salts of calcium, magnesium, potassium, and other bases, as well as various organic and inorganic colloids, are formed. Some accumulate where formed, some are carried away in drainage waters, some are moved to other parts of the soil, and some, in the form of nutrient ions, are taken up by plants. 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. Sunlight and wind influence many phases of plant and animal life.

Living Organisms

Living organisms, including all associated plant and animal life, are responsible for the accumulation of organic matter in soils. Two major kinds of plants, tall prairie grasses and deciduous trees, were present when Will County was settled and presumably had been in the survey area for a long time. Both types of vegetation produced large amounts of organic matter. Forest debris, however, 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 is partially preserved. On the other hand, the organic matter that accumulated from the decaying fibrous root systems of prairie grasses is within the mineral soil and is well preserved.

Under natural conditions, soils that formed under both types of vegetation have a dark surface layer because of an accumulation of organic matter. The dark layer is much thicker in prairie soils, however, generally ranging from 10 to 15 inches in thickness. Varna and Elliott soils are examples of soils that formed under prairie grasses. In soils developed under forest, the surface layer is generally 1 to 5 inches thick. Ozaukee and Blount soils are examples of soils that formed under forests. Where the two types of vegetation were combined or where forest was encroaching onto the prairie, the soils have a dark surface layer that is 5 to 10 inches thick. Examples are Markham and Beecher soils. Mucky soils commonly

have an accumulation of organic matter several feet thick.

Bacteria, fungi, and other micro-organisms help to break down organic matter and thus provide nutrients for plants and other soil organisms. The stability of soil aggregates, structure units made up of sand, silt, and clay, is affected by microbial activity, because cellular excretions from these organisms help to bind soil particles together. Stable aggregates help to maintain soil porosity and promote favorable relationships among soil, water, and air. Earthworms, crayfish, insects, and burrowing animals tend to incorporate organic matter into the soil and to keep soils open and porous.

Human activities also have affected soil formation in Will County. These include harvesting the native vegetation, plowing the land, draining wet soils and irrigating dry ones, applying crushed limestone to acid soils, and applying fertilizer to areas where plant nutrients are depleted. In sloping areas cultivation has increased the susceptibility of the soils to erosion and deposition. Extensive excavating, grading, and filling have completely covered the current soil profile, causing a new cycle of soil formation to begin.

Relief

Relief largely determines the natural drainage of soils. Slopes in Will County range from 0 to 70 percent. Natural soil drainage ranges from excessively drained on back slopes and summits to very poorly drained in depressions.

Relief affects depth to the seasonal high water table or natural drainage of the soil by influencing infiltration and runoff rates. The poorly drained Drummer and Ashkum soils are 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 Camden and Jasper 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 is brownish. Between these extremes, or where the water table fluctuates slowly into and out of the soil profile, the compounds are moderately well oxidized to imperfectly oxidized and colors are mixed or mottled.

Local relief influences the severity of erosion. Even though some erosion occurs on all sloping soils, the hazard generally is more severe in the steeper areas.

Runoff and the removal of soil material on these slopes result in the formation of soils that have a thinner solum.

In Will County drainage conditions depend primarily on the texture and compactness of the parent material and on the depth to drainage outlets. Relief and slope are of some importance because they influence runoff and depth to the water table.

Time

Time is an important factor of soil formation. The longer soils weather, the more distinctive are their horizons and profiles. Soil weathering and development, however, cannot always be measured directly in years, because other factors determine the degree to which a soil profile develops within a given time. Unconsolidated materials weather faster than solid bedrock, so that a soil that formed in the former materials will reach a certain stage of development sooner than a soil that formed in material weathered from bedrock. Yet, the profile of each soil becomes more strongly weathered and developed with the passing of 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 county. The categories are defined in the following paragraphs.

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

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or

properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is 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 aquatic moisture regime).

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

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, mixed, superactive, mesic Typic Endoaquolls.

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

Soil Series and Detailed Soil Map Units

In this section each soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated detailed 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, 1998). 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 affecting specific uses.

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

Soils of one series can differ in texture of the surface layer or of the underlying layers. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. The name of a soil phase

commonly indicates a feature that affects use or management. For example, Varna silt loam, 4 to 6 percent slopes, eroded, is a phase of the Varna series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes and undifferentiated groups. A *complex* consists of two or more soils 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 are somewhat similar in all areas. Casco-Rodman complex, 20 to 30 percent slopes, is an example. An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. Muskego and Houghton mucks, 0 to 2 percent slopes, is an example. The pattern and proportion of the soils in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them.

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.

Ade Series

Drainage class: Somewhat excessively drained

Permeability: Rapid

Landform: Outwash plains and stream terraces

Parent material: Eolian deposits and/or outwash

Slope range: 1 to 6 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Lamellic Argiudolls

Typical Pedon

Ade loamy fine sand, 1 to 6 percent slopes; at an elevation of 568 feet; 1,254 feet north and 87 feet east of the southwest corner of sec. 10, T. 32 N., R. 8 E.; Grundy County, Illinois; USGS Coal City topographic quadrangle; lat. 41 degrees 15 minutes 43 seconds N. and long. 88 degrees 18 minutes 10 seconds W., NAD 27:

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

A—8 to 16 inches; very dark grayish brown (10YR 3/2)

loamy fine sand, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; very friable; many fine roots; moderately acid; clear smooth boundary.

AB—16 to 22 inches; dark brown (10YR 3/3) loamy fine sand, brown (10YR 5/3) dry; weak medium subangular blocky structure; very friable; common fine roots; moderately acid; clear smooth boundary.

Bw—22 to 29 inches; yellowish brown (10YR 5/4) fine sand; single grain; loose; few fine roots; moderately acid; gradual smooth boundary.

E and Bt—29 to 60 inches; yellowish brown (10YR 5/4) and brown (10YR 5/3) fine sand (E); single grain; loose; lamellae of brown (7.5YR 4/4) fine sandy loam 1/2 inch to 8 inches thick (Bt); weak medium subangular blocky structure; friable; many fine distinct strong brown (7.5YR 5/6) masses of iron in the matrix; slightly acid; gradual wavy boundary.

C1—60 to 73 inches; pale brown (10YR 6/3) fine sand; single grain; loose; neutral; clear wavy boundary.

C2—73 to 80 inches; pale brown (10YR 6/3) and brownish yellow (10YR 6/6) fine sand; single grain; loose; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 23 inches

Depth to lamellae: 30 to 45 inches

Thickness of the solum: 54 to 77 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

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

Bw horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Texture—loamy fine sand

E and Bt horizon:

Hue—10YR in E part, 10YR or 7.5YR in Bt part

Value—4 to 6 in E part, 3 or 4 in Bt part

Chroma—3 to 6 in E part, 3 or 4 in Bt part

Texture—sand or fine sand in E part, loamy sand, sandy loam, or loam in Bt part

C horizon:

Hue—10YR

Value—5 or 6

Chroma—3 to 6

Texture—fine sand

98B—Ade loamy fine sand, 1 to 6 percent slopes

Setting

Landform: Outwash plains and stream terraces

Position on landform: Backslopes and summits

Map Unit Composition

Ade and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have gravel in the lower part
- Soils with slopes of less than 1 or more than 6 percent

Dissimilar soils:

- The somewhat poorly drained Watseka soils on footslopes and summits
- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Ade Soil

Parent material: Eolian deposits and/or outwash

Drainage class: Somewhat excessively 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 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

Accelerated erosion: Slight

Potential for frost action: Low

Corrosivity: Low for steel and high for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Ade—3s

Prime farmland status: Ade—not prime farmland

Hydric soil status: Ade—not hydric

Andres Series

Drainage class: Somewhat poorly drained

Permeability: Moderate in the upper part of the profile, slow in the lower part

Landform: Ground moraines and lake plains

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

Slope range: 0 to 5 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 53 seconds N. and long. 88 degrees 18 minutes 16 seconds W., NAD 27:

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 fine distinct 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 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; common fine distinct yellowish brown (10YR 5/4) masses of iron in the matrix; few fine prominent strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concretions throughout; 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; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; few fine prominent strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concretions throughout;

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; few fine prominent strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concretions throughout; many medium prominent gray (N 5/0) iron depletions in the matrix; 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 prominent strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concretions throughout; many medium prominent gray (N 5/0) 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

Thickness of the solum: 36 to 60 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam, loam, or silty clay loam

Bt horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma—2 to 4

Texture—clay loam, loam, or sandy 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 landform: Footslopes and summits

Map Unit Composition

Andres and similar soils: 88 percent

Dissimilar soils: 12 percent

Minor Components

Similar soils:

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

Dissimilar soils:

- The poorly drained Ashkum 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

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Andres—1

Prime farmland status: Andres—prime farmland in all areas

Hydric soil status: Andres—not hydric

293B—Andres silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and lake plains

Position on landform: Backslopes and footslopes

Map Unit Composition

Andres and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

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

Dissimilar soils:

- The poorly drained Ashkum 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 8.3 inches to a depth of 60 inches

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

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Andres—2e

Prime farmland status: Andres—prime farmland in all areas

Hydric soil status: Andres—not hydric

Ashkum Series

Drainage class: Poorly drained

Permeability: Moderately slow

Landform: Ground moraines and end moraines

Parent material: Colluvium and the underlying till

Slope range: 0 to 2 percent

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

Typical Pedon

Ashkum silty clay loam, 0 to 2 percent slopes; at an elevation of 705 feet; 96 feet south and 2,030 feet east of the northwest corner of sec. 22, T. 34 N., R. 11 E.; Will County, Illinois; USGS Manhattan topographic quadrangle; lat. 41 degrees 25 minutes 28 seconds N. and long. 87 degrees 57 minutes 24 seconds W., NAD 27:

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

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

B_{Ag}—12 to 18 inches; dark gray (2.5Y 4/1) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; neutral; clear smooth boundary.

B_{g1}—18 to 29 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; neutral; clear wavy boundary.

2B_{g2}—29 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (10YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; common fine and medium prominent yellowish brown (10YR 5/8) and faint brown (10YR 5/3) masses of iron in the matrix; common fine and medium faint gray (5Y 5/1) iron depletions in the matrix; 8 percent gravel; neutral; gradual wavy boundary.

2BC_g—49 to 54 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure

parting to weak coarse angular blocky; firm; few very fine roots; common fine very dark gray (10YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; common fine and medium prominent yellowish brown (10YR 5/6) and faint brown (10YR 5/3) masses of iron in the matrix; common fine and medium faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2Cg—54 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; common fine prominent yellowish brown (10YR 5/6) and common fine and medium faint brown (10YR 5/3) masses of iron in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Thickness of the colluvium: 15 to 40 inches

Depth to carbonates: 24 to 60 inches

Thickness of the solum: 30 to 60 inches

Ap and A horizons:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3

Chroma—0 or 1

Texture—silty clay loam or silty clay

Bg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—3 to 6

Chroma—0 to 2

Texture—silty clay loam or silty clay

2Bg horizon:

Hue—2.5Y, 5Y, 5GY, or neutral

Value—4 to 6

Chroma—0 to 2

Texture—silty clay loam or silty clay

2Cg horizon:

Hue—2.5Y, 5Y, 5GY, or neutral

Value—5 or 6

Chroma—0 to 2

Texture—silty clay loam

Content of gravel—less than 10 percent

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

Setting

Landform: End moraines and ground moraines

Position on landform: Toeslopes

Map Unit Composition

Ashkum and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are overlain by light colored recent deposits
- Soils that have more sand in the lower part
- Soils that have less clay in the subsoil

Dissimilar soils:

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

Properties and Qualities of the Ashkum Soil

Parent material: Colluvium and the underlying till

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 7.0 percent

Shrink-swell potential: High

Apparent seasonal high water table: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Ashkum—2w

Prime farmland status: Ashkum—prime farmland where drained

Hydric soil status: Ashkum—hydric

Beecher Series

Drainage class: Somewhat poorly drained

Permeability: Slow

Landform: Ground moraines and end moraines

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

Slope range: 0 to 4 percent

Taxonomic classification: Fine, illitic, mesic Udollic
Epiaqualfs

Typical Pedon

Beecher silt loam, 0 to 2 percent slopes; at an elevation of 655 feet; 340 feet south and 65 feet west of the northeast corner of sec. 14, T. 31 N., R. 12 E.; Kankakee County, Illinois; USGS Bradley topographic quadrangle; lat. 41 degrees 10 minutes 36 seconds N. and long. 87 degrees 47 minutes 56 seconds W., NAD 27:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine granular structure; friable; neutral; abrupt smooth boundary.

BE—9 to 13 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate very fine granular structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine faint brown (10YR 5/3) masses of iron in the matrix; slightly acid; clear smooth boundary.

2Bt1—13 to 16 inches; brown (10YR 5/3) silty clay loam; moderate very fine subangular blocky structure; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; many fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; 1 percent gravel; moderately acid; clear smooth boundary.

2Bt2—16 to 21 inches; grayish brown (10YR 5/2) silty clay loam; moderate very fine and fine subangular blocky structure; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct dark gray (10YR 4/1) clay films on faces of peds; many fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 2 percent gravel; moderately acid; clear smooth boundary.

2Bt3—21 to 27 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine dark brown (7.5YR 3/3) and black (10YR 2/1) iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6 and 5/8) masses of iron in the matrix; 2 percent gravel; slightly alkaline; clear smooth boundary.

2Bt4—27 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic

structure parting to moderate fine and medium subangular blocky; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/8) and distinct yellowish brown (10YR 5/6) masses of iron in the matrix; many medium prominent gray (5Y 5/1) iron depletions in the matrix; 2 percent gravel; slightly alkaline; clear smooth boundary.

2BCt—32 to 37 inches; yellowish brown (10YR 5/6) silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; many coarse prominent gray (5Y 5/1) iron depletions in the matrix; 2 percent gravel; slightly effervescent; moderately alkaline; clear smooth boundary.

2Cd—37 to 60 inches; yellowish brown (10YR 5/4) silty clay loam; massive; very firm; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/8) and distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine prominent greenish gray (5GY 5/1) iron depletions in the matrix; common medium prominent greenish gray (5G 6/1) iron depletions on cleavage planes; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 18 inches

Depth to carbonates: 20 to 40 inches

Thickness of the solum: 24 to 45 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

E horizon (where present):

Hue—10YR

Value—4 or 5

Chroma—2

Texture—silt loam

2Bt and 2BCt horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—silty clay loam or silty clay

2Cd horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—silty clay loam

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

Setting

Landform: Ground moraines and end moraines

Position on landform: Footslopes and summits

Map Unit Composition

Beecher and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a thicker surface layer
- Soils that have slopes of more than 2 percent
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Beecher 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 (dense material): 24 to 45 inches

Available water capacity: About 7.8 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

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Beecher—2w

Prime farmland status: Beecher—prime farmland where drained

Hydric soil status: Beecher—not hydric

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

Setting

Landform: Ground moraines and end moraines

Position on landform: Backslopes and footslopes

Map Unit Composition

Beecher and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are moderately eroded
- Soils with a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils with a lighter colored surface layer

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Beecher 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 (dense material): 24 to 45 inches

Available water capacity: About 7.4 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

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Beecher—2e

Prime farmland status: Beecher—prime farmland in all areas

Hydric soil status: Beecher—not hydric

298B2—Beecher silt loam, 2 to 4 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines

Position on landform: Footslopes and backslopes

Map Unit Composition

Beecher and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Beecher 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 (dense material): 24 to 45 inches

Available water capacity: About 7.0 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

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

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

Potential for frost action: High

Corrosivity: High for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Beecher—2e

Prime farmland status: Beecher—prime farmland in all areas

Hydric soil status: Beecher—not hydric

Blount Series

Drainage class: Somewhat poorly drained

Permeability: Slow

Landform: Ground moraines and end moraines

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

Slope range: 0 to 4 percent

Taxonomic classification: Fine, illitic, mesic Aeric Epiaqualfs

Typical Pedon

Blount silt loam, 0 to 2 percent slopes, at an elevation of 705 feet; 2,480 feet south and 1,203 feet west of the northeast corner of sec. 29, T. 26 N., R. 6 E.; Livingston County, Illinois; USGS Fairbury topographic quadrangle; lat. 40 degrees 41 minutes 39 seconds N. and long. 88 degrees 32 minutes 59 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; few fine roots; moderately acid; abrupt smooth boundary.

E—7 to 13 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate thin platy structure; friable; few fine roots; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; strongly acid; abrupt smooth boundary.

2Bt1—13 to 17 inches; brown (10YR 5/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; moderately acid; clear smooth boundary.

2Bt2—17 to 26 inches; grayish brown (10YR 5/2) silty clay; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium black (10YR 2/1) very weakly cemented iron and manganese oxide concretions

throughout; 3 percent gravel; slightly acid; clear smooth boundary.

2Bt3—26 to 32 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; common distinct gray (5Y 5/1) clay films on faces of peds; many medium prominent gray (5Y 6/1) iron depletions in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Cd—32 to 60 inches; 60 percent light olive brown (2.5Y 5/4) and 40 percent gray (5Y 6/1) silty clay loam; massive; very firm; common medium prominent white (10YR 8/1) calcium carbonate concretions throughout; 5 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 18 inches

Depth to carbonates: 19 to 40 inches

Thickness of the solum: 30 to 48 inches

Ap or A horizon:

Hue—10YR

Value—3 or 4

Chroma—1 to 3

Texture—silt loam

E horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—silt loam

Bt or 2Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay loam or silty clay

Content of gravel—2 to 10 percent

2Cd horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay loam or clay loam

Content of gravel—2 to 14 percent

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

Setting

Landform: Ground moraines and end moraines

Position on landform: Footslopes and summits

Map Unit Composition

Blount and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor darker colored 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 slopes of more than 2 percent
- Soils that have more sand in the subsoil

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Blount 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 (dense material): 30 to 48 inches

Available water capacity: About 8.1 inches to a depth of 60 inches

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

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Blount—2w

Prime farmland status: Blount—prime farmland where drained

Hydric soil status: Blount—not hydric

23B—Blount silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines

Position on landform: Footslopes and backslopes

Map Unit Composition

Blount and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

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 slopes of less than 2 percent
- Soils that have more sand in the subsoil
- Soils that are moderately eroded

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Blount 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 (dense material): 30 to 48 inches

Available water capacity: About 8.1 inches to a depth of 60 inches

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

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Blount—2e

Prime farmland status: Blount—prime farmland in all areas

Hydric soil status: Blount—not hydric

Bowes Series

Drainage class: Well drained

Permeability: Moderate in the upper part of the profile, very rapid in the lower part

Landform: Outwash plains and stream terraces

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

Slope range: 0 to 4 percent

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

Typical Pedon

Bowes silt loam, 2 to 4 percent slopes; at an elevation of 760 feet; 1,500 feet south and 2,635 feet east of the northwest corner of sec. 8, T. 40 N., R. 9 E.; Du Page County, Illinois; USGS West Chicago topographic quadrangle; lat. 41 degrees 58 minutes 08 seconds N. and long. 88 degrees 13 minutes 58 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; many very fine roots; moderately acid; abrupt smooth boundary.

E—8 to 12 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate thin platy structure; friable; common very fine roots; moderately acid; clear smooth boundary.

Bt1—12 to 17 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; slightly acid; clear wavy boundary.

Bt2—17 to 27 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and 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; slightly acid; gradual wavy boundary.

Bt3—27 to 37 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium and coarse prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; slightly acid; gradual wavy boundary.

2Bt4—37 to 43 inches; dark yellowish brown (10YR 4/4) gravelly clay loam; weak medium and coarse prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films and brown (10YR 4/3) clay films on faces of peds and in pores; 15 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

2C—43 to 70 inches; yellowish brown (10YR 5/4) very

gravelly loamy sand; single grain; loose; 35 percent gravel and 5 percent cobbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 28 to 60 inches

Depth to sandy and gravelly deposits: 40 to 65 inches

Depth to carbonates: 40 to 60 inches

Thickness of the solum: 42 to 65 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam

E horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 or 4

Texture—silt loam

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 6

Texture—the gravelly or very gravelly analogs of clay loam, sandy clay loam, loam, sandy loam, or loamy sand

Content of gravel—15 to 60 percent

2C horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—gravelly loamy sand to extremely gravelly coarse sand

Content of gravel—15 to 75 percent

Content of cobbles—5 to 35 percent

792A—Bowes silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces

Position on landform: Summits

Map Unit Composition

Bowes and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 65 inches
- Soils with a seasonal high water table at a depth of less than 6 feet
- Soils that have fewer rock fragments in the lower part
- Soils with slopes of more than 2 percent

Dissimilar soils:

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

Properties and Qualities of the Bowes 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: Moderate to very rapid

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: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Bowes—1

Prime farmland status: Bowes—prime farmland in all areas

Hydric soil status: Bowes—not hydric

792B—Bowes silt loam, 2 to 4 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Backslopes and summits

Map Unit Composition

Bowes and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 65 inches
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have fewer rock fragments in the lower part
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:

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

Properties and Qualities of the Bowes 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: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Bowes—2e

Prime farmland status: Bowes—prime farmland in all areas

Hydric soil status: Bowes—not hydric

Braidwood Series

Drainage class: Well drained

Permeability: Moderately slow

Landform: Spoil piles and outwash plains

Parent material: Mine spoil

Slope range: 1 to 70 percent

Taxonomic classification: Coarse-loamy, mixed, subactive, calcareous, mesic Typic Udorthents

Typical Pedon

Braidwood loam, 20 to 70 percent slopes; at an elevation of 620 feet; 360 feet north and 680 feet west of the southeast corner of sec. 32, T. 32 N., R. 9 E.; Will County, Illinois; USGS Essex topographic quadrangle; lat. 41 degrees 12 minutes 13 seconds N. and long. 88 degrees 12 minutes 27 seconds W., NAD 27:

A—0 to 6 inches; 70 percent dark gray (10YR 4/1) and 30 percent very dark grayish brown (10YR 3/2) loam, gray (10YR 6/1) dry; weak fine granular structure; friable; many very fine to coarse roots; few fine prominent brownish yellow (10YR 6/8) weakly cemented iron oxide concretions lining pores; 2 percent gravel and 3 percent coal fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

AC—6 to 15 inches; dark gray (2.5Y 4/1) silt loam, gray (2.5Y 6/1) dry; massive; friable; common very fine to medium roots; common medium prominent brownish yellow (10YR 6/8) weakly cemented iron oxide concretions throughout; 4 percent gravel and 1 percent coal fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

C1—15 to 25 inches; dark grayish brown (2.5Y 4/2) loam; massive; firm; common very fine to medium roots; 4 percent gravel, 1 percent channers, and 1 percent coal fragments; violently effervescent; moderately alkaline; gradual wavy boundary.

C2—25 to 37 inches; dark grayish brown (2.5Y 4/2) loam; massive; firm; common very fine and fine roots; 6 percent gravel, 1 percent channers, and 4 percent coal fragments; violently effervescent; moderately alkaline; clear wavy boundary.

C3—37 to 65 inches; stratified dark gray (10YR 4/1) loam (55 percent) and dark yellowish brown (10YR 4/4) sand (45 percent); massive (loam) and single grain (sand); firm (loam) and loose (sand); few fine and medium roots; common medium prominent brown (7.5YR 4/4) weakly cemented iron oxide concretions throughout; common fine distinct black (10YR 2/1) strongly cemented manganese oxide nodules throughout; 5 percent gravel, 1 percent channers, and 1 percent coal fragments; violently effervescence; moderately alkaline.

Range in Characteristics

Content of rock fragments: 0 to 15 percent

Reaction: Slightly alkaline or moderately alkaline

A horizon:

Hue—10YR or 2.5Y
Value—3 or 4
Chroma—1 or 2
Texture—loam or silt loam

AC horizon:

Hue—10YR or 2.5Y
Value—3 or 4
Chroma—1 or 2
Texture—loam or silt loam

C horizon:

Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—stratified loam, silt loam, sandy loam, loamy sand, or sand

688B—Braidwood loam, 1 to 7 percent slopes

Setting

Landform: Spoil piles and outwash plains

Position on landform: Shoulders and summits

Map Unit Composition

Braidwood and similar soils: 90 percent

Dissimilar components: 10 percent

Minor Components

Similar soils:

- Soils with slopes of less than 1 percent or more than 7 percent
- Soils with less sand and more silt in the upper part
- Soils that have more rock fragments throughout

Dissimilar components:

- The somewhat poorly drained Watseka soils on summits and footslopes
- Areas of water

Properties and Qualities of the Braidwood Soil

Parent material: Mine spoil

Drainage class: Well drained

Slowest permeability within a depth of 40 inches:

Moderate

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 8.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 4.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Low for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Braidwood—2e

Prime farmland status: Braidwood—prime farmland in all areas

Hydric soil status: Braidwood—not hydric

688D—Braidwood loam, 7 to 20 percent slopes

Setting

Landform: Spoil piles and outwash plains

Position on landform: Backslopes

Map Unit Composition

Braidwood and similar soils: 90 percent

Dissimilar components: 10 percent

Minor Components

Similar soils:

- Soils with slopes of less than 7 percent or more than 20 percent
- Soils with less sand and more silt in the upper part
- Soils that have more rock fragments throughout

Dissimilar components:

- Nearly level to gently sloping areas of natural soils
- Areas of water

Properties and Qualities of the Braidwood Soil

Parent material: Mine spoil

Drainage class: Well drained

Slowest permeability within a depth of 40 inches:

Moderate

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 7.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 4.0 percent

Shrink-swell potential: Low

Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Braidwood—6e
Prime farmland status: Braidwood—not prime farmland
Hydric soil status: Braidwood—not hydric

688G—Braidwood loam, 20 to 70 percent slopes

Setting

Landform: Spoil piles and outwash plains
Position on landform: Backslopes

Map Unit Composition

Braidwood and similar soils: 90 percent
 Dissimilar components: 10 percent

Minor Components

Similar soils:

- Soils with slopes of less than 20 percent or more than 70 percent
- Soils with less sand and more silt in the upper part
- Soils that have more rock fragments throughout

Dissimilar components:

- Strongly sloping areas of natural soils
- Areas of water

Properties and Qualities of the Braidwood Soil

Parent material: Mine spoil
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 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: Slight

Potential for frost action: Moderate
Corrosivity: Low for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Braidwood—7e
Prime farmland status: Braidwood—not prime farmland
Hydric soil status: Braidwood—not hydric

Brenton Series

Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Brenton silt loam, 0 to 2 percent slopes; at an elevation of 612 feet; 60 feet west and 1,760 feet south of the northeast corner of sec. 29, T. 30 N., R. 4 E.; Livingston County, Illinois; USGS Streator South topographic quadrangle; lat. 41 degrees 02 minutes 33 seconds N. and long. 88 degrees 46 minutes 39 seconds W., NAD 27:

- Ap—0 to 12 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.
- Bt1—12 to 18 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.
- Bt2—18 to 24 inches; brown (10YR 5/3) silty 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; common fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—24 to 28 inches; grayish brown (10YR 5/2) silty 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; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt4—28 to 34 inches; grayish brown (10YR 5/2) clay loam; weak fine prismatic structure parting to weak fine angular blocky; friable; few very fine roots; few 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 concentrations throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint gray (10YR 5/1) iron depletions; neutral; clear smooth boundary.

2Bt5—34 to 44 inches; grayish brown (10YR 5/2) sandy loam; weak fine prismatic structure; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2C—44 to 60 inches; grayish brown (10YR 5/2), stratified sandy loam and loamy sand; massive; very friable; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 4 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 23 inches

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

Depth to carbonates: More than 40 inches

Thickness of the solum: 40 to more than 60 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 8

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 7

Chroma—1 to 8

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

Content of gravel—less than 5 percent

2C horizon:

Hue—7.5Y, 10YR, 2.5Y, or 5Y

Value—4 to 7

Chroma—1 to 8

Texture—stratified loam, sandy loam, sandy 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 landform: Footslopes and summits

Map Unit Composition

Brenton and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more gravel in the lower part
- Soils with slopes of more than 2 percent
- Soils that have till in the lower part
- Soils that have loamy outwash within a depth of 24 inches
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:

- The well drained Jasper soils on backslopes
- 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 11.2 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

Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: High
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Brenton—1
Prime farmland status: Brenton—prime farmland in all areas
Hydric soil status: Brenton—not hydric

Bryce Series

Drainage class: Poorly drained
Permeability: Very slow
Landform: Glacial lake plains (relict) and ground moraines
Parent material: Colluvium and the underlying till
Slope range: 0 to 2 percent
Taxonomic classification: Fine, mixed, superactive, mesic Vertic Endoaquolls

Typical Pedon

Bryce silty clay, 0 to 2 percent slopes; at an elevation of 675 feet; 2,559 feet north and 45 feet west of the center of sec. 7, T. 25 N., R. 13 W.; Iroquois County, Illinois; USGS Woodworth topographic quadrangle; lat. 40 degrees 38 minutes 39 seconds N. and long. 87 degrees 52 minutes 23 seconds W., NAD 27:

- Ap1—0 to 10 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; weak very fine granular structure; friable; few fine black (7.5YR 2.5/1) weakly cemented nodules of iron and manganese oxide throughout; slightly acid; abrupt smooth boundary.
- Ap2—10 to 13 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate medium angular blocky structure; friable; moderately acid; abrupt smooth boundary.
- Bg—13 to 19 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine distinct dark grayish brown (2.5Y 4/2) and few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear wavy boundary.
- Btg1—19 to 24 inches; dark grayish brown (2.5Y 4/2) silty clay; weak medium prismatic structure parting

to moderate fine and medium subangular blocky; firm; many distinct dark gray (10YR 4/1) clay films on faces of peds; many distinct black (N 2.5/0) organo-clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear wavy boundary.

Btg2—24 to 35 inches; olive gray (5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few slickensides on faces of peds; common distinct olive gray (5Y 4/2) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; common fine prominent strong brown (7.5YR 5/6) masses of iron in the matrix; common fine faint dark gray (2.5Y 4/1) iron depletions in the matrix; neutral; gradual smooth boundary.

Btg3—35 to 45 inches; gray (5Y 5/1) silty clay; weak coarse prismatic structure parting to weak coarse subangular blocky; firm; few fine roots; common distinct dark gray (5Y 4/1) clay films on faces of peds; few slickensides and pressure faces on peds; common medium prominent light olive brown (2.5Y 5/4) and few medium prominent dark yellowish brown (10YR 4/4) masses of iron in the matrix; slightly alkaline; clear smooth boundary.

2BCg—45 to 58 inches; gray (5Y 5/1) silty clay; weak very coarse prismatic structure; very firm; few fine white (10YR 8/1) very weakly cemented calcium carbonate nodules and weakly cemented calcium carbonate concretions throughout; common coarse prominent brown (10YR 4/3) and common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 1 percent fine gravel; slightly effervescent; moderately alkaline; clear smooth boundary.

2Cg—58 to 66 inches; gray (5Y 5/1) silty clay; massive; very firm; many medium prominent olive brown (2.5Y 4/4) masses of iron in the matrix; 3 percent fine gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Thickness of the colluvium: 15 to 55 inches

Depth to carbonates: 24 to 60 inches

Thickness of the solum: 30 to more than 60 inches

Ap or A horizon:

Hue—10YR or neutral

Value—2 or 3

Chroma—0 or 1

Texture—silty clay or silty clay loam

Bg and Btg horizons:

Hue—10YR, 2.5Y, 5Y, or neutral
 Value—2 to 6
 Chroma—0 to 3
 Texture—silty clay or clay
 Content of gravel—less than 5 percent

2BCg and 2Cg horizons:

Hue—2.5Y or 5Y
 Value—4 to 6
 Chroma—1 to 8
 Texture—commonly, silty clay or clay; less commonly, silty clay loam
 Content of gravel—less than 10 percent

235A—Bryce silty clay, 0 to 2 percent slopes**Setting**

Landform: Glacial lake plains (relict) and ground moraines

Position on landform: Toeslopes

Map Unit Composition

Bryce and similar soils: 94 percent

Dissimilar soils: 6 percent

Minor Components**Similar soils:**

- Soils that have a thicker dark surface soil
- Soils that have less clay in the subsoil
- Soils that have carbonates beginning at depth of more than 60 inches

Dissimilar soils:

- The somewhat poorly drained Frankfort and Swygert soils on summits and footslopes
- The very poorly drained Rantoul soils on toeslopes

Properties and Qualities of the Bryce Soil

Parent material: Colluvium and the underlying till

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow

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: 4.0 to 7.0 percent

Shrink-swell potential: High

Apparent seasonal high water table: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Bryce—2w

Prime farmland status: Bryce—prime farmland where drained

Hydric soil status: Bryce—hydric

Camden Series

Drainage class: Well drained

Permeability: Moderate

Landform: Outwash plains and stream terraces

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

Slope range: 0 to 10 percent

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

Typical Pedon

Camden silt loam, 2 to 5 percent slopes; at an elevation of about 720 feet; 30 feet north and 100 feet west of the southeast corner of sec. 6, T. 22 N., R. 14 W.; Champaign County, Illinois; USGS Rankin topographic quadrangle; lat. 40 degrees 23 minutes 6 seconds N. and long. 87 degrees 58 minutes 16 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and very fine granular structure; friable; neutral; abrupt smooth boundary.

E—9 to 14 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; moderate thin platy structure; friable; few distinct light brownish gray (10YR 6/2 dry) clay depletions on faces of peds; neutral; abrupt smooth boundary.

Bt1—14 to 18 inches; yellowish brown (10YR 5/4) silt loam; weak very fine subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light brownish gray (10YR 6/2 dry) clay depletions on faces of peds; neutral; clear smooth boundary.

Bt2—18 to 22 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light brownish gray (10YR 6/2 dry) clay depletions on faces of peds; slightly acid; clear smooth boundary.

Bt3—22 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide nodules throughout; moderately acid; clear smooth boundary.

Bt4—28 to 35 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; common fine and medium irregular black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide nodules throughout; 3 percent, by volume, chert pebbles; moderately acid; clear smooth boundary.

2Bt5—35 to 52 inches; yellowish brown (10YR 5/6) loam; moderate coarse prismatic structure parting to weak medium subangular blocky; friable; common distinct brown (10YR 4/3) clay films on faces of peds; common fine and medium irregular black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; few fine distinct yellowish brown (10YR 5/4) masses of iron in the matrix; 5 percent, by volume, chert and quartz pebbles; moderately acid; clear smooth boundary.

2Bt6—52 to 62 inches; brown (10YR 4/3) and yellowish brown (10YR 5/4) sandy loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few faint brown (10YR 4/3) clay bridges between sand grains; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; few fine faint brown (10YR 5/3) masses of iron in the matrix; 5 percent, by volume, chert and quartz pebbles; moderately acid; clear smooth boundary.

2C—62 to 80 inches; yellowish brown (10YR 5/4 and 5/6), stratified sandy loam, loam, and sandy clay loam; massive; very friable; moderately acid.

Range in Characteristics

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

Depth to carbonates: More than 60 inches

Thickness of the solum: 30 to more than 65 inches

Ap or A horizon:

Hue—10YR

Value—3 to 5

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—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—3 to 6

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

Content of gravel—less than 10 percent

2C horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—sandy loam, loam, or silt loam with thin strata of other textures

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 landform: Summits

Map Unit Composition

Camden and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more gravel in the lower part
- Soils that have slopes of more than 2 percent
- Soils that have outwash beginning at a depth of less than 24 inches

Dissimilar soils:

- The well drained Fox soils, which are moderately deep to sandy and gravelly outwash and are on summits and backslopes
- The poorly drained Drummer 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 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: High
Corrosivity: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Camden—1
Prime farmland status: Camden—prime farmland in all areas
Hydric soil status: Camden—not hydric

134B—Camden silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on landform: Summits and backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have more gravel in the lower part
- Soils that have slopes of less than 2 percent
- Soils that are moderately eroded
- Soils that have outwash beginning at a depth of less than 24 inches

Dissimilar soils:

- The well drained Fox soils, which are moderately deep to sandy and gravelly outwash and are on summits and backslopes
- The poorly drained Drummer 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 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: High
Corrosivity: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Camden—2e
Prime farmland status: Camden—prime farmland in all areas
Hydric soil status: Camden—not hydric

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

Setting

Landform: Stream terraces and outwash plains
Position on landform: Shoulders and backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have more gravel in the lower part
- Soils that have outwash beginning at a depth of less than 24 inches
- Soils that are severely eroded
- Soils that have slopes of less than 5 percent

Dissimilar soils:

- The well drained Fox soils, which are moderately deep to sandy and gravelly outwash and are on shoulders and backslopes
- The poorly drained Drummer 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 9.7 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

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Camden—3e

Prime farmland status: Camden—not prime farmland

Hydric soil status: Camden—not hydric

Casco Series

Drainage class: Somewhat excessively drained

Permeability: Moderate in the upper part of the profile, very rapid in the lower part

Landform: End moraines and outwash plains

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

Slope range: 12 to 30 percent

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

Typical Pedon

Casco loam, 20 to 30 percent slopes; at an elevation of 745 feet; 951 feet north and 678 feet west of the southeast corner of sec. 6, T. 44 N., R. 9 E.; McHenry County, Illinois; USGS Wauconda topographic quadrangle; lat. 42 degrees 19 minutes 00 seconds N. and long. 88 degrees 13 minutes 14 seconds W., NAD 27:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) loam, brown (10YR 4/3) dry; moderate fine granular structure; friable; common very fine and fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; 7 percent gravel; neutral; abrupt smooth boundary.

Bt1—4 to 7 inches; brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; few very fine and fine roots; common distinct dark

brown (7.5YR 3/2) organic coatings on faces of peds; common distinct brown (7.5YR 4/3) clay films on faces of peds; few fine distinct yellowish red (5YR 5/8) iron accumulations in the matrix; 8 percent gravel; neutral; clear smooth boundary.

Bt2—7 to 15 inches; brown (7.5YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; few distinct dark brown (7.5YR 3/2) organic coatings on faces of peds; common distinct brown (7.5YR 4/3) clay films on faces of peds; 10 percent gravel; neutral; abrupt wavy boundary.

2C—15 to 60 inches; yellowish brown (10YR 5/4) very gravelly sand and very gravelly coarse sand; single grain; loose; few very fine roots; 36 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to sandy and gravelly deposits: 10 to 20 inches

Depth to carbonates: 10 to 20 inches

Thickness of the solum: 10 to 20 inches

A horizon:

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 or 3

Texture—loam or silt loam

Bt horizon:

Hue—5YR, 7.5YR, or 10YR

Value—3 to 5

Chroma—3 or 4

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

Content of gravel—less than 35 percent

2C horizon:

Hue—7.5YR or 10YR

Value—4 to 7

Chroma—3 or 4

Texture—stratified sand and coarse sand or the gravelly, very gravelly, or extremely gravelly analogs of those textures

Content of gravel—10 to 70 percent

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

Setting

Landform: End moraines and outwash plains

Position on landform: Backslopes

Map Unit Composition

Casco and similar soils: 50 percent

Rodman and similar soils: 40 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are only slightly eroded
- 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

Dissimilar soils:

- The somewhat poorly drained Kane soils on summits and 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

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

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

Corrosivity: 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 status: Casco and Rodman—not prime farmland

Hydric soil status: Casco and Rodman—not hydric

969F—Casco-Rodman complex, 20 to 30 percent slopes

Setting

Landform: End moraines and outwash plains

Position on landform: Backslopes

Map Unit Composition

Casco and similar soils: 45 percent

Rodman and similar soils: 40 percent

Dissimilar soils: 15 percent

Minor Components

Similar soils:

- Soils that have carbonates at or near the surface
- Soils that have sandy and gravelly deposits beginning at a depth of more than 20 inches
- Soils that have slopes of less than 20 percent or more than 30 percent
- Soils that are moderately eroded

Dissimilar soils:

- The somewhat poorly drained Kane soils on summits and 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 3.8 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
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

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 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Low
Corrosivity: 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—7e; Rodman—7s
Prime farmland status: Casco and Rodman—not prime farmland
Hydric soil status: Casco and Rodman—not hydric

Channahon Series

Drainage class: Well drained
Permeability: Moderate
Landform: Stream terraces
Parent material: Drift over dolostone
Slope range: 0 to 6 percent
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Argiudolls

Typical Pedon

Channahon silt loam, 2 to 4 percent slopes; at an elevation of 530 feet; 520 feet east and 50 feet south of the northwest corner of sec. 35, T. 34 N., R. 8 E.; Grundy County, Illinois; USGS Minooka topographic

quadrangle; lat. 41 degrees 23 minutes 20 seconds N. and long. 88 degrees 17 minutes 12 seconds W., NAD 27:

A1—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 to medium roots; neutral; gradual wavy boundary.
 A2—5 to 11 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure; friable; common very fine to medium roots; neutral; gradual wavy boundary.
 Bt1—11 to 15 inches; dark yellowish brown (10YR 3/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many distinct very dark gray (10YR 3/1) organic coatings in root channels and pores; common very fine and fine roots; neutral; gradual wavy boundary.
 Bt2—15 to 18 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and few prominent very dark gray (10YR 3/1) organic coatings in root channels and pores; common very fine to medium roots; 2 percent rock fragments; neutral; clear smooth boundary.
 2R—18 inches; gray (10YR 6/1), unweathered limestone bedrock; strongly effervescent.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 15 inches
Depth to lithic contact: 10 to 20 inches
Content of rock fragments: 0 to 20 percent

A horizon:

Hue—10YR
 Value—2 or 3
 Chroma—1 or 2
 Texture—loam or silt loam

Bt horizon:

Hue—7.5YR or 10YR
 Value—3 to 5
 Chroma—3 or 4
 Texture—loam, silt loam, sandy loam, clay loam, or silty clay loam

315A—Channahon silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces

Position on landform: Summits

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have bedrock at a depth of less than 10 or more than 20 inches
- Soils that have less sand and more clay in the subsoil
- Soils with slopes of more than 2 percent

Dissimilar soils:

- The well drained Waupecan soils, which are deep to sandy and gravelly deposits and are on summits

Properties and Qualities of the Channahon Soil

Parent material: Drift over dolostone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

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

Depth to restrictive feature (lithic bedrock): 10 to 20 inches

Available water capacity: About 3.1 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

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Channahon—3s

Prime farmland status: Channahon—not prime farmland

Hydric soil status: Channahon—not hydric

315B—Channahon silt loam, 2 to 4 percent slopes

Setting

Landform: Stream terraces

Position on landform: Summits and backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have bedrock at a depth of less than 10 or more than 20 inches
- Soils that have less sand and more clay in the subsoil
- Soils with slopes of less than 2 percent or more than 4 percent

Dissimilar soils:

- The well drained Waupecan soils, which are deep to sandy and gravelly deposits and are on summits and backslopes

Properties and Qualities of the Channahon Soil

Parent material: Drift over dolostone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

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

Depth to restrictive feature (lithic bedrock): 10 to 20 inches

Available water capacity: About 3.5 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

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Channahon—3e

Prime farmland status: Channahon—not prime farmland

Hydric soil status: Channahon—not hydric

315C2—Channahon silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Stream terraces

Position on landform: Backslopes and shoulders

Map Unit Composition

Channahon and similar soils: 94 percent

Dissimilar soils: 6 percent

Minor Components

Similar soils:

- Soils with slopes of less than 4 percent or more than 6 percent
- Soils that have bedrock at a depth of less than 10 or more than 20 inches
- Soils that have less sand and more clay in the subsoil

Dissimilar soils:

- The well drained Plattville soils, which are deep to bedrock and are on backslopes

Properties and Qualities of the Channahon Soil

Parent material: Drift over dolostone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

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

Depth to restrictive feature (lithic bedrock): 10 to 20 inches

Available water capacity: About 2.5 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

Corrosivity: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Channahon—4e

Prime farmland status: Channahon—not prime farmland

Hydric soil status: Channahon—not hydric

Chatsworth Series

Drainage class: Moderately well drained

Permeability: Very slow

Landform: End moraines and ground moraines

Parent material: Till

Slope range: 4 to 30 percent

Taxonomic classification: Fine, illitic, mesic Oxyaquic Eutrudepts

Typical Pedon

Chatsworth silty clay, 6 to 12 percent slopes, severely eroded; at an elevation of 735 feet; 148 feet north and 1,870 feet west of the southeast corner of sec. 7, T. 24 N., R. 10 E.; Iroquois County, Illinois; USGS Buckley topographic quadrangle; lat. 40 degrees 32 minutes 48 seconds N. and long. 88 degrees 06 minutes 20 seconds W., NAD 27:

Ap—0 to 2 inches; dark grayish brown (2.5Y 4/2) silty clay, light brownish gray (10YR 6/2) dry; moderate medium granular structure; firm; common medium roots; slightly effervescent; moderately alkaline; abrupt smooth boundary.

Bw1—2 to 11 inches; dark grayish brown (2.5Y 4/2) silty clay; moderate very fine and fine subangular blocky structure; firm; few medium and fine roots; few fine white (10YR 8/1) very weakly cemented calcium carbonate nodules throughout; few fine distinct olive brown (2.5Y 4/4) masses of iron in the matrix; common fine faint dark gray (5Y 4/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; clear wavy boundary.

Bw2—11 to 15 inches; dark grayish brown (2.5Y 4/2) silty clay; weak medium prismatic structure parting to moderate fine and medium angular blocky; very firm; few fine roots between pedes; common faint dark gray (5Y 4/1) coatings on faces of pedes; common medium white (10YR 8/1) very weakly cemented calcium carbonate nodules throughout; common fine distinct olive brown (2.5Y 4/4) masses of iron in the matrix; common fine faint dark gray (5Y 4/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bw3—15 to 22 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to weak medium subangular blocky; very firm; few fine roots between pedes; common faint dark gray (5Y 4/1) coatings on faces of pedes; common medium white (10YR 8/1) very weakly cemented calcium carbonate nodules throughout; common fine distinct olive brown (2.5Y 4/4) masses of iron in the matrix; common fine faint dark gray (5Y 4/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cd1—22 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay; massive; very firm; few fine roots along cleavage planes; many faint gray (5Y 5/1) coatings along cleavage planes; few medium white (10YR 8/1) very weakly cemented calcium carbonate nodules along cleavage planes; many medium

prominent yellowish brown (10YR 5/6) masses of iron in the matrix; many fine faint gray (5Y 5/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cd2—35 to 60 inches; dark gray (5Y 4/1) silty clay; massive; very firm; very few fine roots along widely spaced cleavage planes; many faint gray (5Y 5/1) coatings along cleavage planes; few medium white (10YR 8/1) very weakly cemented calcium carbonate nodules along cleavage places; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 0 to 20 inches

Thickness of the solum: 10 to 24 inches

Ap or A horizon:

Hue—10YR, 2.5Y, or 5Y

Value—3 or 4

Chroma—1 or 2

Texture—silty clay

Bw horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 or 5

Chroma—2 or 3

Texture—commonly, silty clay or clay; less commonly, silty clay loam

Cd horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 or 5

Chroma—1 to 6

Texture—silty clay, clay, or silty clay loam

241C3—Chatsworth silty clay, 4 to 6 percent slopes, severely eroded

Setting

Landform: End moraines and ground moraines

Position on landform: Backslopes

Map Unit Composition

Chatsworth and similar soils: 95 percent

Dissimilar soils: 5 percent

Minor Components

Similar soils:

- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have carbonates beginning at a depth of more than 20 inches
- Soils in which the content of clay increases below the surface layer

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Chatsworth Soil

Parent material: Till

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 10 to 24 inches

Available water capacity: About 3.0 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

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: Very high

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Chatsworth—6e

Prime farmland status: Chatsworth—not prime farmland

Hydric soil status: Chatsworth—not hydric

241D3—Chatsworth silty clay, 6 to 12 percent slopes, severely eroded

Setting

Landform: End moraines and ground moraines

Position on landform: Backslopes

Map Unit Composition

Chatsworth and similar soils: 95 percent

Dissimilar soils: 5 percent

Minor Components

Similar soils:

- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that have carbonates beginning at a depth of more than 20 inches

- Soils in which the content of clay increases below the surface layer

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Chatsworth Soil

Parent material: Till

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 10 to 24 inches

Available water capacity: About 3.0 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

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: Very high

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Chatsworth—7e

Prime farmland status: Chatsworth—not prime farmland

Hydric soil status: Chatsworth—not hydric

241E3—Chatsworth silty clay, 12 to 20 percent slopes, severely eroded

Setting

Landform: Ground moraines and end moraines

Position on landform: Backslopes

Map Unit Composition

Chatsworth and similar soils: 96 percent

Dissimilar soils: 4 percent

Minor Components

Similar soils:

- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that have carbonates beginning at a depth of more than 20 inches

Dissimilar soils:

- The poorly drained Millington soils on flood plains

Properties and Qualities of the Chatsworth Soil

Parent material: Till

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 10 to 24 inches

Available water capacity: About 3.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 1.0 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: Very high

Susceptibility to water erosion: High

Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Chatsworth—7e

Prime farmland status: Chatsworth—not prime farmland

Hydric soil status: Chatsworth—not hydric

241F—Chatsworth silty clay loam, 20 to 30 percent slopes

Setting

Landform: End moraines and ground moraines

Position on landform: Backslopes

Map Unit Composition

Chatsworth and similar soils: 96 percent

Dissimilar soils: 4 percent

Minor Components

Similar soils:

- Soils that are moderately eroded or severely eroded
- Soils with slopes of less than 20 percent or more than 30 percent

Dissimilar soils:

- The poorly drained Millington soils on flood plains

Properties and Qualities of the Chatsworth Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature (dense material): 10 to 24 inches
Available water capacity: About 3.3 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
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: High for steel and low for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Chatsworth—7e
Prime farmland status: Chatsworth—not prime farmland
Hydric soil status: Chatsworth—not hydric

Chenoa Series

Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part of the profile, slow in the lower part
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 0 to 5 percent
Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Chenoa silty clay loam, 0 to 2 percent slopes; at an elevation of 691 feet; 100 feet south and 825 feet west of the northeast corner of sec. 2, T. 27 N., R. 3 E.; Livingston County, Illinois; USGS Flanagan South topographic quadrangle; lat. 40 degrees 47 minutes 19 seconds N. and long. 88 degrees 50 minutes 14 seconds W., NAD 27:

Ap—0 to 12 inches; black (10YR 2/1) silty clay loam,

dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

BA—12 to 16 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—21 to 26 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Btg2—26 to 32 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common medium faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt—32 to 36 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; slightly alkaline; clear smooth boundary.

2C—36 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive; firm; few prominent light brownish gray (10YR 6/2) coatings on vertical

cleavage planes; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Thickness of the loess or other silty material: 20 to 40 inches

Depth to carbonates: 25 to 45 inches

Thickness of the solum: 25 to 50 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silty clay loam

Bt and Btg horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—silty clay loam or silty clay

2Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—silty clay loam or silt loam

Content of gravel—less than 10 percent

2C horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 6

Texture—silty clay loam or silt loam

Content of gravel—2 to 10 percent

614A—Chenoa silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines

Position on landform: Summits and footslopes

Map Unit Composition

Chenoa and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a thinner surface layer
- Soils that have more silt and less clay in the subsoil
- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches

- Soils that have more sand in the lower part
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:

- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Chenoa 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: Slow

Permeability below a depth of 60 inches: 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: 3.5 to 5.0 percent

Shrink-swell potential: High

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Chenoa—2w

Prime farmland status: Chenoa—prime farmland in all areas

Hydric soil status: Chenoa—not hydric

614B—Chenoa silty clay loam, 2 to 5 percent slopes

Setting

Landform: End moraines and ground moraines

Position on landform: Backslopes and footslopes

Map Unit Composition

Chenoa and similar soils: 88 percent

Dissimilar soils: 12 percent

Minor Components

Similar soils:

- Soils that have a thinner surface layer
- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have more silt and less clay in the subsoil

- Soils that have more sand in the lower part
- Soils with slopes of less than 2 percent or more than 4 percent
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:

- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Chenoa 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: Slow

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: 3.5 to 5.0 percent

Shrink-swell potential: High

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Chenoa—2e

Prime farmland status: Chenoa—prime farmland in all areas

Hydric soil status: Chenoa—not hydric

Darroch Series

Drainage class: Somewhat poorly drained

Permeability: Moderate

Landform: Outwash plains

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

Slope range: 0 to 2 percent

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

Typical Pedon

Darroch silt loam, 0 to 2 percent slopes; at an elevation of 810 feet; 2,600 feet east and 60 feet south of the northwest corner of sec. 10, T. 25 N., R. 8 W.;

Benton County, Indiana; USGS Wadena, Indiana, topographic quadrangle; lat. 40 degrees 38 minutes 0.0 seconds N. and long. 87 degrees 18 minutes 52 seconds W., NAD 27:

Ap—0 to 11 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; many very fine roots; neutral; abrupt wavy boundary.

A—11 to 15 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate medium subangular blocky structure; friable; many very fine roots; neutral; clear wavy boundary.

Btg1—15 to 21 inches; grayish brown (10YR 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organo-clay films lining root channels; many medium distinct yellowish brown (10YR 5/4) and prominent yellowish brown (10YR 5/8) masses of iron oxide in the matrix; few medium faint dark gray (10YR 4/1) iron oxide depletions in the matrix; slightly acid; clear wavy boundary.

2Btg2—21 to 29 inches; grayish brown (10YR 5/2) loam; moderate medium subangular blocky structure; friable; few very fine roots; common dark gray (10YR 4/1) fillings in root channels; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron oxide in the matrix; neutral; clear wavy boundary.

2C1—29 to 46 inches; yellowish brown (10YR 5/4) silt loam that has thin strata of fine sand; massive; friable; few dark grayish brown (10YR 4/2) fillings in root channels; common medium prominent yellowish brown (10YR 5/8) masses of iron oxide in the matrix; many medium distinct gray (10YR 6/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.

2C2—46 to 60 inches; yellowish brown (10YR 5/4) silt loam that has thin strata of fine sand and silty clay loam; massive; friable; few black (N 2.5/0) very weakly cemented iron and manganese oxide nodules throughout; common medium prominent yellowish brown (10YR 5/8) and few medium distinct dark yellowish brown (10YR 4/6) masses of iron oxide in the matrix; common medium distinct gray (10YR 6/1) iron depletions in the matrix; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Depth to carbonates: 24 to 45 inches
Thickness of the solum: 24 to 45 inches

Ap and A horizons:

Hue—10YR
 Value—2 or 3
 Chroma—1 to 3
 Texture—silt loam or loam

Btg or Bt horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 to 7
 Chroma—1 to 6
 Texture—silty clay loam, silt loam, clay loam, or loam

2Btg or 2Bt horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 to 7
 Chroma—1 to 6
 Texture—sandy clay loam, loam, sandy loam, fine sandy loam, or clay loam
 Content of gravel—less than 7 percent

2C or 2Cg horizon:

Hue—10YR or 2.5Y
 Value—5 to 7
 Chroma—1 to 6
 Texture—loam or silt loam with thin strata of other textures
 Content of gravel—less than 15 percent

740A—Darroch silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on landform: Footslopes

Map Unit Composition

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

Minor Components

Similar soils:

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

Dissimilar soils:

- The well drained Jasper soils on summits and backslopes

- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Darroch Soil

Parent material: Thin mantle of 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 10.8 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
Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: High
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Darroch—2w
Prime farmland status: Darroch—prime farmland in all areas
Hydric soil status: Darroch—not hydric

Dresden Series

Drainage class: Well drained
Permeability: Moderate in the upper part of the profile, very rapid in the lower part
Landform: Outwash plains and stream terraces
Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 6 percent
Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs

Typical Pedon

Dresden silt loam, 2 to 4 percent slopes; at an elevation of 580 feet; 1,460 feet south and 140 feet east of the northwest corner of sec. 10, T. 34 N., R. 9 E.; Will County, Illinois; USGS Channahon topographic quadrangle; lat. 41 degrees 26 minutes 27 seconds N.

and long. 88 degrees 11 minutes 39 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; friable; common very fine roots; common continuous distinct dark grayish brown (10YR 4/2) silt coatings on horizontal faces of peds; neutral; gradual wavy boundary.

BE—7 to 10 inches; brown (10YR 4/3) silt loam; weak thin platy structure; friable; common fine roots; common continuous distinct dark grayish brown (10YR 4/2) silt coatings on horizontal faces of peds; neutral; gradual wavy boundary.

Bt1—10 to 16 inches; brown (7.5YR 4/3) silt loam; moderate fine and medium prismatic structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; neutral; gradual wavy boundary.

2Bt2—16 to 24 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; common very fine roots; many prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few fine distinct strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide nodules throughout; 1 percent gravel; neutral; clear smooth boundary.

2Bt3—24 to 30 inches; brown (7.5YR 4/3) clay loam; weak medium subangular blocky structure; firm; common fine roots; many prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; common medium prominent brownish yellow (10YR 6/6) and distinct strong brown (7.5YR 4/6) weakly cemented iron and manganese oxide nodules throughout; 7 percent gravel; very slightly effervescent; slightly alkaline; clear smooth boundary.

3C—30 to 60 inches; yellowish brown (10YR 5/4) gravelly loamy sand; single grain; loose; 21 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 deposits: 24 to 40 inches

Depth to carbonates: 24 to 40 inches

Thickness of the solum: 24 to 40 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—2 or 3

Texture—silt loam or loam

Bt and 2Bt horizons:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

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

Content of gravel—less than 35 percent

3C horizon:

Hue—7.5YR or 10YR

Value—4 to 7

Chroma—2 to 6

Texture—the gravelly, very gravelly, or extremely analogs of sand, loamy sand, coarse sand, or loamy coarse sand

Content of gravel—20 to 75 percent

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

Setting

Landform: Outwash plains and stream terraces

Position on landform: Summits

Map Unit Composition

Dresden and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have less sand and more clay 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 seasonal high water table at a depth of less than 6 feet
- Soils that have a thicker surface layer

Dissimilar soils:

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

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 6.0 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
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Dresden—2s
Prime farmland status: Dresden—prime farmland in all areas
Hydric soil status: Dresden—not hydric

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

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have less sand and more clay 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 with slopes of less than 2 percent or more than 4 percent
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:

- The somewhat poorly drained Kane soils on summits and footslopes
- The excessively drained Rodman soils on shoulders and backslopes

- The poorly drained Will soils on toeslopes

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 5.9 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: Slight
Potential for frost action: Moderate
Corrosivity: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Dresden—2e
Prime farmland status: Dresden—prime farmland in all areas
Hydric soil status: Dresden—not hydric

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

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have a lighter colored surface layer
- Soils with slopes of less than 4 percent or more than 6 percent
- Soils that have less sand and more clay 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

Dissimilar soils:

- The excessively drained Rodman soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

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 6.1 inches to a depth of 60 inches

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

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Dresden—2e

Prime farmland status: Dresden—prime farmland in all areas

Hydric soil status: Dresden—not hydric

Drummer Series

Drainage class: Poorly drained

Permeability: Moderate

Landform: Outwash plains and ground moraines

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

Slope range: 0 to 2 percent

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

Typical Pedon

Drummer silty clay loam, 0 to 2 percent slopes; at an elevation of 735 feet; 1,400 feet south and 200 feet east of the northwest corner of sec. 2, T. 25 N., R. 6 E.;

Livingston County, Illinois; USGS Forrest South topographic quadrangle; lat. 40 degrees 40 minutes 04 seconds N. and long. 88 degrees 29 minutes 47 seconds W., NAD 27:

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

A—10 to 14 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots; neutral; clear smooth boundary.

B_{Ag}—14 to 18 inches; dark gray (10YR 4/1) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

B_g—18 to 24 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; few fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

B_{tg}1—24 to 30 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films of faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; few fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

B_{tg}2—30 to 42 inches; grayish brown (2.5Y 5/2) silt loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; few 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; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix;

many medium faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

2Btg3—42 to 50 inches; grayish brown (2.5Y 5/2), stratified silt loam and loam; weak coarse prismatic structure; friable; few very fine roots; few 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; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; many medium faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 2 percent gravel; neutral; clear smooth boundary.

2Cg—50 to 60 inches; light brownish gray (2.5Y 6/2), stratified silt loam and loam; massive; friable; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many coarse prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common medium faint grayish brown (2.5Y 5/2) iron depletions in the matrix; very slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Thickness of the loess or other silty material: 40 to 60 inches

Depth to carbonates: 40 to 60 inches

Thickness of the solum: 42 to 60 inches

Ap or A horizon:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3

Chroma—0 to 2

Texture—silty clay loam or silt loam

B_{Ag}, B_g, and B_{tg} horizons:

Hue—10YR, 2.5Y, or 5Y

Value—4 or 5

Chroma—1 or 2

Texture—silty clay loam or silt loam

2B_{tg} horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—loam, silt loam, sandy loam, sandy clay loam, or clay loam

2C_g horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 6

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

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

Setting

Landform: Outwash plains and ground moraines

Position on landform: Toeslopes

Map Unit Composition

Drummer and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have outwash at a depth of less than 40 inches and more than 60 inches
- Soils that have till in the lower part
- Soils that have more gravel in the lower part
- Soils that have a thicker surface soil

Dissimilar soils:

- The poorly drained, calcareous Harpster soils on toeslopes

Properties and Qualities of the Drummer 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 12.5 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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Drummer—2w
Prime farmland status: Drummer—prime farmland
 where drained
Hydric soil status: Drummer—hydric

Du Page Series

Drainage class: Well drained
Permeability: Moderate
Landform: Flood plains
Parent material: Calcareous alluvium
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy, mixed,
 superactive, mesic Cumulic Hapludolls

Typical Pedon

Du Page silt loam, 0 to 2 percent slopes, occasionally flooded; at an elevation of 600 feet; 1,800 feet south and 100 feet east of the northwest corner of sec. 10, T. 36 N., R. 9 E.; Will County, Illinois; USGS Plainfield topographic quadrangle; lat. 41 degrees 37 minutes 11 seconds N. and 88 degrees 12 minutes 5 seconds W., NAD 27:

- A1—0 to 18 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many fine roots; strongly effervescent; moderately alkaline; gradual smooth boundary.
- A2—18 to 30 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; 1 percent gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.
- A3—30 to 35 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; weak medium granular structure; friable; few very fine roots; 1 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.
- C1—35 to 41 inches; brown (10YR 4/3) loam; massive; friable; many light gray (10YR 7/1) shell fragments; 7 percent gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.
- C2—41 to 60 inches; dark gray (10YR 4/1) gravelly loam; massive; very friable; many light gray (10YR 7/1) shell fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 52 inches
Depth to carbonates: 10 inches or less
Thickness of the solum: 24 to 52 inches

A1, A2, or Ap horizon:

Hue—10YR
 Value—2 or 3
 Chroma—1 to 3
 Texture—silt loam or loam

A3, AC, or Bw horizon:

Hue—10YR
 Value—2 or 3
 Chroma—2 or 3
 Texture—loam, sandy loam, sandy clay loam, or the gravelly analogs of those textures
 Content of gravel—less than 20 percent

C horizon:

Hue—10YR
 Value—3 or 4
 Chroma—1 to 4
 Texture—stratified loam, silt loam, sandy loam, sandy clay loam, loamy sand, sand, or the gravelly analogs of those textures
 Content of gravel—less than 25 percent

8321A—Du Page silt loam, 0 to 2 slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Du Page and similar soils: 90 percent
 Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are overlain by light colored recent deposits
- Soils that have less sand and more clay in the upper one-half of the profile
- Soils that have carbonates beginning at a depth of more than 10 inches

Dissimilar soils:

- The poorly drained Millington soils on toeslopes

Properties and Qualities of the Du Page Soil

Parent material: Calcareous alluvium

Drainage class: Well drained

Slowest permeability within a depth of 40 inches:
 Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 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: Low
Depth to apparent seasonal high water table: 3.5 to 6.0 feet, Feb-Apr
Ponding: None
Flooding: Occasional, Nov-Jun
Accelerated erosion: Negligible
Potential for frost action: Moderate
Corrosivity: Low for steel and concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Du Page—2w
Prime farmland status: Du Page—prime farmland in all areas
Hydric soil status: Du Page—not hydric

Dunham Series

Drainage class: Poorly drained
Permeability: Moderate in the upper part of the profile, very rapid in the lower part
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Dunham silty clay loam, 0 to 2 percent slopes; at an elevation of 690 feet; 1,060 feet south and 2,360 feet east of the northwest corner of sec. 11, T. 38 N., R. 9 E.; Du Page County, Illinois; USGS Naperville topographic quadrangle; lat. 41 degrees 47 minutes 49 seconds N. and long. 88 degrees 10 minutes 40 seconds W., NAD 27:

- Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; many very fine roots; neutral; clear smooth boundary.
- A—7 to 11 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium subangular blocky structure parting to moderate fine and medium granular; friable; common very fine roots; common fine distinct brown (10YR 4/3) masses of iron in the matrix; neutral; clear smooth boundary.
- Btg1—11 to 15 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; many distinct very dark gray (10YR 3/1)

organo-clay films on faces of peds; common fine faint brown (10YR 5/3) masses of iron in the matrix; neutral; clear smooth boundary.

- Btg2—15 to 24 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; friable; few very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common black (2.5Y 2.5/1) krotovinas; many fine prominent yellowish brown (10YR 5/8) masses of iron in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; neutral; clear smooth boundary.
- Bg1—24 to 31 inches; gray (2.5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; friable; few very fine roots; common very dark gray (2.5Y 3/1) krotovinas; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint gray (5Y 6/1) iron depletions in the matrix; neutral; clear wavy boundary.
- 2Bg2—31 to 35 inches; gray (2.5Y 5/1) clay loam; weak medium subangular blocky structure; friable; few very fine roots; common very dark gray (2.5Y 3/1) krotovinas; common fine distinct light olive brown (2.5Y 5/3) masses of iron in the matrix; common fine faint gray (5Y 6/1) iron depletions in the matrix; 12 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
- 2BCg—35 to 42 inches; grayish brown (2.5Y 5/2), stratified gravelly loam and gravelly sandy loam; weak coarse subangular blocky structure; friable; common fine prominent yellowish brown (10YR 5/8) masses of iron in the matrix; 18 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
- 3C—42 to 60 inches; brown (10YR 5/3) very gravelly loamy sand; massive; very friable; common fine prominent yellowish brown (10YR 5/8) masses of iron in the matrix; 50 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: 24 to 50 inches
Depth to sandy and gravelly deposits: 32 to 55 inches
Depth to carbonates: 30 to 50 inches
Thickness of the solum: 36 to 55 inches
- Ap and A horizons:*
 Hue—10YR, 2.5Y, or neutral
 Value—2 or 3
 Chroma—0 to 2
 Texture—silty clay loam or silt loam

Btg and Bg horizons:

Hue—10YR, 2.5Y, 5Y, or neutral
 Value—4 to 6
 Chroma—0 to 2
 Texture—silty clay loam or silt loam

2Bg and 2BCg horizons:

Hue—10YR, 2.5Y, 5Y, or neutral
 Value—5 or 6
 Chroma—0 to 2
 Texture—loam, clay loam, silt loam, sandy loam,
 or the gravelly analogs of those textures
 Content of gravel—0 to 20 percent

3C horizon:

Hue—7.5YR, 10YR, 2.5Y, 5Y, or neutral
 Value—4 to 6
 Chroma—0 to 8
 Texture—gravelly sandy loam to extremely
 gravelly coarse sand
 Content of gravel—15 to 70 percent

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

Setting

Landform: Outwash plains and stream terraces

Position on landform: Toeslopes

Map Unit Composition

Dunham and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- 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 less than 30 inches
- Soils that have more sand in the upper one-half of the profile

Dissimilar soils:

- The somewhat poorly drained Grundelein soils on summits and footslopes
- The very poorly drained Houghton soils on toeslopes
- The very poorly drained Millsdale soils, which are moderately deep to bedrock and are 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 9.0 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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Dunham—2w

Prime farmland status: Dunham—prime farmland where drained

Hydric soil status: Dunham—hydric

Elizabeth Series

Drainage class: Somewhat excessively drained

Permeability: Moderate

Landform: Stream terraces

Parent material: Loamy material over dolostone

Slope range: 6 to 30 percent

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

Typical Pedon

Elizabeth silt loam, 12 to 20 percent slopes; at an elevation of 575 feet; 120 feet north and 1,100 feet east of the southwest corner of sec. 16, T. 32 N., R. 10 E.; Will County, Illinois; USGS Bonfield topographic quadrangle; lat. 41 degrees 14 minutes 55 seconds N. and long. 88 degrees 5 minutes 11 seconds W., NAD 27:

A1—0 to 5 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak medium granular structure; friable; many very fine to medium roots; neutral; gradual wavy boundary.

A2—5 to 13 inches; 60 percent very dark grayish brown (10YR 3/2) and 40 percent very dark gray (10YR 3/1) loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky

structure; friable; many very fine to medium roots; 5 percent cobbles; slightly effervescent; slightly alkaline; clear wavy boundary.

A3—13 to 16 inches; 70 percent dark brown (10YR 3/3) and 30 percent very dark grayish brown (10YR 3/2) very cobbly loam, brown (10YR 5/3) dry; weak fine granular structure; friable; 50 percent cobbles; slightly effervescent; moderately alkaline; clear wavy boundary.

R—16 inches; white (10YR 8/1), fractured bedrock.

Range in Characteristics

Depth to lithic contact: 7 to 20 inches

Thickness of the solum: 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

Content of rock fragments: Less than 15 percent in upper part of the horizon to more than 90 percent in lower part

403D—Elizabeth silt loam, 6 to 12 percent slopes

Setting

Landform: Stream terraces

Position on landform: Backslopes

Map Unit Composition

Elizabeth and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have bedrock at a depth of less than 7 inches or more than 20 inches
- Soils with slopes of less than 6 percent or more than 12 percent
- Soils that have a lighter colored surface layer

Dissimilar soils:

- The well drained Channahon soils on backslopes

Properties and Qualities of the Elizabeth Soil

Parent material: Loamy material over dolostone

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Slow

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

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

Available water capacity: About 1.7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.5 to 5.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Low for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elizabeth—6s

Prime farmland status: Elizabeth—not prime farmland

Hydric soil status: Elizabeth—not hydric

403E—Elizabeth silt loam, 12 to 20 percent slopes

Setting

Landform: Stream terraces

Position on landform: Backslopes

Map Unit Composition

Elizabeth and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have bedrock at a depth of less than 7 inches or more than 20 inches
- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that have a lighter colored surface layer

Dissimilar soils:

- The well drained Channahon soils on backslopes

Properties and Qualities of the Elizabeth Soil

Parent material: Loamy material over dolostone

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Slow

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

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

Available water capacity: About 2.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.5 to 5.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Low for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elizabeth—7s

Prime farmland status: Elizabeth—not prime farmland

Hydric soil status: Elizabeth—not hydric

403F—Elizabeth silt loam, 20 to 30 percent slopes

Setting

Landform: Stream terraces

Position on landform: Backslopes

Map Unit Composition

Elizabeth and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have bedrock at a depth of less than 7 inches or more than 20 inches
- Soils that have slopes of less than 20 percent or more than 30 percent
- Soils that have a lighter colored surface layer

Dissimilar soils:

- The well drained Channahon soils on backslopes

Properties and Qualities of the Elizabeth Soil

Parent material: Loamy material over dolostone

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Slow

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

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

Available water capacity: About 2.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.5 to 5.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Low for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elizabeth—7s

Prime farmland status: Elizabeth—not prime farmland

Hydric soil status: Elizabeth—not hydric

Elliott Series

Drainage class: Somewhat poorly drained

Permeability: Slow

Landform: Ground moraines and end moraines

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

Slope range: 0 to 4 percent

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Taxadjunct Feature

Elliott silty clay loam, 2 to 4 percent slopes, eroded, has a mollic epipedon that is less than 10 inches thick. It is a fine, illitic, mesic Aquollic Hapludalf.

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 17 seconds W., NAD 27:

Ap—0 to 6 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—6 to 11 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; slightly acid; clear smooth boundary.

Bt1—11 to 16 inches; light olive brown (2.5Y 5/4) silty clay; moderate fine subangular blocky structure; friable; common fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; neutral; clear smooth boundary.

2Bt2—16 to 23 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable;

few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron 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 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 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 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; 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

Thickness of the solum: 20 to 45 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

Bt and 2Bt horizons:

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 landform: Summits and footslopes

Map Unit Composition

Elliott and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more than 20 inches of loess or other silty material
- Soils that have slopes of more than 2 percent
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum 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 (dense material): 20 to 45 inches

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

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elliott—2w
Prime farmland status: Elliott—prime farmland in all areas
Hydric soil status: Elliott—not hydric

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

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have more than 20 inches of loess or other silty material
- Soils that are moderately eroded
- Soils with slopes of less than 2 percent

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum 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 (dense material): 20 to 45 inches
Available water capacity: About 8.0 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
Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May
Ponding: None
Flooding: None
Accelerated erosion: Slight

Potential for frost action: Moderate
Corrosivity: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elliott—2e
Prime farmland status: Elliott—prime farmland in all areas
Hydric soil status: Elliott—not hydric

146B2—Elliott silty clay loam, 2 to 4 percent slopes, eroded

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that are severely eroded
- Soils that have more than 20 inches of loess or other silty material
- Soils with slopes of less than 2 percent or more than 4 percent

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum 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 (dense material): 20 to 45 inches
Available water capacity: About 6.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: High
Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May
Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Elliott—2e

Prime farmland status: Elliott—prime farmland in all areas

Hydric soil status: Elliott—not hydric

Elpaso Series

Drainage class: Poorly drained

Permeability: Moderate in the upper part of the profile, moderately slow in the lower part

Landform: Ground moraines and end moraines

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

Slope range: 0 to 2 percent

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

Typical Pedon

Elpaso silty clay loam, 0 to 2 percent slopes; at an elevation of 715 feet; 210 feet north and 320 feet west of the southeast corner of sec. 30, T. 27 N., R. 2 E.; Woodford County, Illinois; USGS Benson topographic quadrangle; lat. 40 degrees 46 minutes 03 seconds N. and long. 89 degrees 01 minute 34 seconds W., NAD 27:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak very fine granular structure; firm; many very fine and fine roots; moderately acid; abrupt smooth boundary.

A—7 to 21 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; firm; many very fine and fine roots; moderately acid; gradual wavy boundary.

Bg—21 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; many fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine distinct light olive

brown (2.5Y 5/4) masses of iron in the matrix; neutral; gradual wavy boundary.

Btg1—35 to 44 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) and few fine distinct light olive brown (2.5Y 5/4) masses of iron in the matrix; neutral; gradual wavy boundary.

2Btg2—44 to 53 inches; dark grayish brown (2.5Y 4/2) silt loam; weak medium and coarse subangular blocky structure; friable; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) and fine distinct light olive brown (2.5Y 5/4) masses of iron in the matrix; 5 percent pebbles; slightly alkaline; clear wavy boundary.

2Btg3—53 to 69 inches; dark grayish brown (2.5Y 4/2) and olive brown (2.5Y 4/4) silty clay loam; weak medium and coarse prismatic structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine distinct olive gray (5Y 5/2) iron depletions throughout; 4 percent pebbles; slightly effervescent starting at a depth of 63 inches; slightly alkaline; diffuse wavy boundary.

2C—69 to 80 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; few fine black (10YR 2/1) very weakly cemented iron and manganese concretions throughout; many medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine distinct olive gray (5Y 5/2) iron depletions throughout; 4 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Thickness of the loess or other silty material: 40 to 60 inches

Depth to carbonates: 35 to 65 inches

Thickness of the solum: 45 to 75 inches

Ap and A horizons:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3
 Chroma—0 to 2
 Texture—silty clay loam

Bg and Btg horizons:

Hue—10YR, 2.5Y, 5Y, or neutral
 Value—4 to 6
 Chroma—0 to 2
 Texture—silty clay loam or silt loam

2Btg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral
 Value—4 to 6
 Chroma—0 to 4
 Texture—loam, clay loam, silt loam, or silty clay loam
 Content of gravel—1 to 10 percent

2C horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 to 6
 Chroma—1 to 8
 Texture—loam, clay loam, silt loam, or silty clay loam
 Content of gravel—1 to 10 percent

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

Setting

Landform: End moraines and ground moraines
Position on landform: Toeslopes

Map Unit Composition

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

Minor Components

Similar soils:

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

Dissimilar soils:

- The moderately well drained Graymont soils on summits
- The somewhat poorly drained Chenoa soils on summits and footslopes
- The poorly drained Harpster soils on toeslopes

Properties and Qualities of the Elpaso Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: Within a depth of 1.0 foot, Jan-May
Ponding: 0.5 foot above the surface during wet periods
Flooding: None
Accelerated erosion: Negligible
Potential for frost action: High
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Elpaso—2w
Prime farmland status: Elpaso—prime farmland where drained
Hydric soil status: Elpaso—hydric

Fieldon Series

Drainage class: Poorly drained
Permeability: Moderate in the upper part of the profile, rapid in the lower part
Landform: Outwash plains
Parent material: Outwash
Slope range: 0 to 2 percent
Taxonomic classification: Coarse-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls

Typical Pedon

Fieldon loam, 0 to 2 percent slopes; at an elevation of 584 feet; 1,580 feet north and 1,100 feet east of the southwest corner of sec. 14, T. 32 N., R. 9 E.; Will County, Illinois; USGS Wilmington topographic quadrangle; lat. 41 degrees 15 minutes 6 seconds N. and long. 88 degrees 9 minutes 53 seconds W., NAD 27:

Ap—0 to 8 inches; black (N 2.5/0) loam, dark gray (N 4/0) dry; weak fine subangular blocky structure;

friable; common very fine and fine roots; 2 percent shell fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

A—8 to 12 inches; black (N 2.5/0) loam, dark gray (N 4/0) dry; weak fine and medium granular structure; friable; common very fine and fine roots; 4 percent shell fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

AB—12 to 15 inches; 70 percent black (10YR 2/1) and 30 percent dark grayish brown (2.5Y 4/2) loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure; friable; common very fine and fine roots; 3 percent shell fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bg1—15 to 25 inches; dark grayish brown (2.5Y 4/2) fine sandy loam; weak fine and medium subangular blocky structure; friable; common very fine and fine roots; common prominent black (10YR 2/1) organic coatings on faces of peds and in pores; few fine prominent dark yellowish brown (10YR 4/6) masses of iron in the matrix; slightly effervescent; slightly alkaline; gradual wavy boundary.

Bg2—25 to 36 inches; dark grayish brown (2.5Y 4/2) fine sandy loam; weak medium and coarse subangular blocky structure; friable; common prominent black (10YR 2/1) organic coatings on horizontal faces of peds; common fine prominent dark yellowish brown (10YR 4/6) masses of iron in the matrix; many fine distinct dark gray (2.5Y 4/1) iron depletions in the matrix; slightly alkaline; gradual wavy boundary.

Cg1—36 to 46 inches; grayish brown (2.5Y 5/2) fine sandy loam; massive; very friable; common medium prominent dark yellowish brown (10YR 4/6) masses of iron in the matrix; many coarse distinct yellowish brown (10YR 5/4) masses of iron and manganese in the matrix; common fine faint dark grayish brown (2.5Y 4/2) iron depletions in the matrix; very slightly effervescent; slightly alkaline; gradual wavy boundary.

Cg2—46 to 60 inches; grayish brown (2.5Y 5/2), stratified fine sandy loam to loamy fine sand; massive; very friable; few fine and medium prominent very pale brown (10YR 7/3) carbonate masses throughout; common medium prominent dark yellowish brown (10YR 4/6) masses of iron in the matrix; common coarse distinct yellowish brown (10YR 5/4) masses of iron and manganese in the matrix; very slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 14 to 24 inches

Depth to carbonates: 10 inches or less

Thickness of the solum: 20 to 40 inches

Ap and A horizons:

Hue—10YR or neutral

Value—2 or 3

Chroma—0 or 1

Texture—fine sandy loam, very fine sandy loam, loam, or sandy clay loam

Bg horizon:

Hue—10YR or 5Y

Value—4 to 6

Chroma—1 to 4

Texture—very fine sandy loam, fine sandy loam, sandy clay loam, or loam

Cg horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—1 to 4

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

380A—Fieldon loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains

Position on landform: Toeslopes

Map Unit Composition

Fieldon and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have rock fragments in the lower part
- Soils that have a higher content of medium and coarse sand in the middle and lower parts
- Soils that have carbonates beginning at a depth of more than 10 inches

Dissimilar soils:

- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Fieldon 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 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 6.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table: Within a depth of 1.0 foot, Jan-May
Ponding: 0.5 foot above the surface during wet periods
Flooding: None
Accelerated erosion: Negligible
Potential for frost action: High
Corrosivity: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Fieldon—2w
Prime farmland status: Fieldon—prime farmland where drained
Hydric soil status: Fieldon—hydric

Fox Series

Drainage class: Well drained
Permeability: Moderate in the upper part of the profile, very rapid in the lower part
Landform: Outwash plains and stream terraces
Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 6 percent
Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fox silt loam, 2 to 4 percent slopes; at an elevation of 602 feet; 760 feet north and 2,120 feet east of the southwest corner of sec. 21, T. 36 N., R. 9 E.; Will County, Illinois; USGS Plainfield topographic quadrangle; lat. 41 degrees 34 minutes 56 seconds N. and long. 88 degrees 12 minutes 43 seconds W., NAD 27:

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; common fine roots; neutral; clear smooth boundary.
 BE—4 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak

thick platy structure parting to weak fine subangular blocky; friable; common very fine roots; few patchy prominent light brownish gray (10YR 6/2) silt coatings on horizontal faces of peds; neutral; gradual smooth boundary.

Bt1—7 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; common continuous faint brown (10YR 4/3) clay films on all faces of peds; neutral; clear smooth boundary.

2Bt2—13 to 24 inches; brown (7.5YR 4/3) clay loam; moderate medium and coarse subangular blocky structure; firm; common fine roots; common discontinuous distinct brown (10YR 4/3) clay films on all faces of peds; common fine prominent yellowish brown (10YR 5/6) weakly cemented iron and manganese oxide concretions throughout; 7 percent gravel; very slightly effervescent; slightly alkaline; gradual wavy boundary.

2BC—24 to 28 inches; dark yellowish brown (10YR 4/4) gravelly loam; weak medium and coarse subangular blocky structure; firm; few discontinuous distinct brown (10YR 4/3) clay films on vertical faces of peds; common fine prominent yellowish brown (10YR 5/8) weakly cemented iron and manganese oxide concretions throughout; 15 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

3C—28 to 60 inches; 80 percent brownish yellow (10YR 6/6) and 20 percent yellowish brown (10YR 5/4) gravelly coarse sand; single grain; loose; 20 percent gravel; strongly 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

Thickness of the solum: 20 to 40 inches

Ap or A horizon:

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt loam or loam

Bt horizon:

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—4

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—7.5YR or 10YR

Value—3 or 4
 Chroma—3 or 4
 Texture—clay loam, loam, sandy clay loam, sandy loam, or the gravelly analogs of those 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

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

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have a darker surface layer
- Soils that have sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have less sand and more clay in the lower one-half of the profile
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:

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

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 6.3 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
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Fox—2s
Prime farmland status: Fox—prime farmland in all areas
Hydric soil status: Fox—not hydric

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

Setting

Landform: Stream terraces and outwash plains
Position on landform: Backslopes and summits

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have a darker surface layer
- Soils that have less sand and more clay in the lower one-half of the profile
- 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 seasonal high water table at a depth of less than 6 feet

Dissimilar soils:

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

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 6.2 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

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Fox—2e

Prime farmland status: Fox—prime farmland in all areas

Hydric soil status: Fox—not hydric

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

Setting

Landform: Stream terraces and outwash plains

Position on landform: Backslopes and shoulders

Map Unit Composition

Fox and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have less sand and more clay in the upper one-half of the profile
- Soils that have sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils with slopes of less than 4 percent or more than 6 percent

Dissimilar soils:

- The excessively drained Rodman soils on shoulders and backslopes
- The poorly drained 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 5.7 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

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Fox—2e

Prime farmland status: Fox—prime farmland in all areas

Hydric soil status: Fox—not hydric

Frankfort Series

Drainage class: Somewhat poorly drained

Permeability: Slow in the upper part of the profile, very slow in the lower part

Landform: End moraines and ground moraines

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

Slope range: 0 to 6 percent

Taxonomic classification: Fine, illitic, mesic Udollic Epiaqualfs

Typical Pedon

Frankfort silt loam, 2 to 4 percent slopes; at an elevation of 675 feet; 2,500 feet south and 300 feet east of the northwest corner of sec. 26, T. 44 N., R. 11 E.; Lake County, Illinois; USGS Libertyville topographic quadrangle; lat. 42 degrees 15 minutes 46 seconds N. and long. 87 degrees 55 minutes 27 seconds W., NAD 27:

A—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; many very fine and fine roots; neutral; abrupt smooth boundary.

EB—8 to 12 inches; dark grayish brown (10YR 4/2) silty clay loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots; many prominent very dark gray (10YR 3/1) organic coatings on faces of peds and in

pores; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.

Bt—12 to 18 inches; brown (10YR 4/3) silty clay; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on surfaces along pores; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; common fine and medium prominent strong brown (7.5YR 5/6) weakly cemented iron oxide concretions throughout; few fine prominent black (7.5YR 2.5/1) strongly cemented manganese oxide concretions throughout; common fine and medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; slightly acid; gradual wavy boundary.

Btg1—18 to 24 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine and medium prismatic structure parting to moderate fine and medium subangular blocky; firm; common very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on surfaces along pores; many distinct dark gray (10YR 4/1) clay films on faces of peds and in pores; common medium prominent strong brown (7.5YR 5/6) weakly cemented iron oxide concretions throughout; few fine prominent black (7.5YR 2.5/1) strongly cemented manganese oxide concretions throughout; common fine and medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; 1 percent gravel; neutral; gradual wavy boundary.

Btg2—24 to 32 inches; grayish brown (10YR 5/2) silty clay; moderate medium and coarse prismatic structure parting to weak medium and coarse subangular blocky; firm; common prominent very dark brown (10YR 2/2) organo-clay films on faces of peds and in pores; few fine prominent reddish yellow (7.5YR 7/6) masses of iron in the matrix; common fine and medium prominent reddish yellow (7.5YR 6/8) weakly cemented iron oxide concretions throughout; few fine prominent black (7.5YR 2.5/1) strongly cemented manganese oxide concretions throughout; many medium faint gray (2.5Y 6/1) iron depletions in the matrix; 2 percent gravel; neutral; clear wavy boundary.

BCg—32 to 37 inches; 60 percent gray (10YR 6/1) and 40 percent brown (10YR 5/3) silty clay; weak coarse prismatic structure parting to weak coarse angular blocky; very firm; few distinct very dark gray (10YR 3/1) organic coatings on surfaces along pores; common fine prominent dark yellowish brown (10YR 4/6) weakly cemented iron oxide concretions throughout; common medium

distinct white (10YR 8/1) carbonate masses throughout; 2 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cdg—37 to 60 inches; 60 percent gray (2.5Y 5/1) and 40 percent dark yellowish brown (10YR 4/4) silty clay loam; massive; very firm; few prominent very dark gray (10YR 3/1) organic coatings on surfaces along pores; common medium distinct brown (10YR 5/3) weakly cemented iron oxide concretions throughout; common coarse prominent white (10YR 8/1) carbonate masses throughout; 1 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

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

Depth to carbonates: 18 to 40 inches

Thickness of the solum: 24 to 42 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

Bt and Btg horizons:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 3

Texture—silty clay loam or silty clay

Content of gravel—less than 7 percent

Cdg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay or silty clay loam

Content of gravel—less than 10 percent

320A—Frankfort silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines

Position on landform: Footslopes and summits

Map Unit Composition

Frankfort and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a thicker surface layer

- Soils that have less clay in the glacial till
- Soils with slopes of more than 2 percent

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Frankfort 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: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 24 to 42 inches

Available water capacity: About 5.9 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

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Frankfort—3w

Prime farmland status: Frankfort—prime farmland where drained

Hydric soil status: Frankfort—not hydric

320B—Frankfort silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines

Position on landform: Backslopes and summits

Map Unit Composition

Frankfort and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are moderately eroded
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have less clay in the glacial till

- Soils with slopes of less than 2 percent or more than 4 percent
- Soils that have a thicker surface layer

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Frankfort 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: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 24 to 42 inches

Available water capacity: About 6.0 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

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Frankfort—3e

Prime farmland status: Frankfort—prime farmland in all areas

Hydric soil status: Frankfort—not hydric

320B2—Frankfort silty clay loam, 2 to 4 percent slopes, eroded

Setting

Landform: End moraines and ground moraines

Position on landform: Backslopes and footslopes

Map Unit Composition

Frankfort and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils with a lighter colored surface layer

- Soils that have less clay in the glacial till
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Frankfort 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: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 24 to 42 inches

Available water capacity: About 4.9 inches to a depth of 60 inches

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

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

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

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Frankfort—3e

Prime farmland status: Frankfort—prime farmland in all areas

Hydric soil status: Frankfort—not hydric

320C2—Frankfort silty clay loam, 4 to 6 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines

Position on landform: Shoulders and backslopes

Map Unit Composition

Frankfort and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have a lighter colored surface layer

- Soils with less clay in the lower part
- Soils with slopes of less than 4 percent or more than 6 percent

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Frankfort 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: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 24 to 42 inches

Available water capacity: About 5.0 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

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

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

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Very high

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Frankfort—4e

Prime farmland status: Frankfort—not prime farmland

Hydric soil status: Frankfort—not hydric

Gilford Series

Drainage class: Poorly drained

Permeability: Moderately rapid in the upper part of the profile, rapid in the lower part

Landform: Outwash plains

Parent material: Outwash

Slope range: 0 to 2 percent

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

Typical Pedon

Gilford, 0 to 2 percent slopes; at an elevation of 544 feet; 231 feet north and 75 feet east of the southwest corner of sec. 27, T. 33 N., R. 8 E.; Grundy County, Illinois; USGS Coal City topographic quadrangle; lat.

41 degrees 18 minutes 09 seconds N. and long. 88 degrees 18 minutes 14 seconds W., NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam; weak fine granular structure; very friable; mildly alkaline; abrupt smooth boundary.

A1—10 to 17 inches; very dark gray (10YR 3/1) fine sandy loam; weak medium subangular blocky structure; friable; neutral; gradual wavy boundary.

A2—17 to 22 inches; very dark grayish brown (2.5Y 3/2) fine sandy loam; weak fine and medium prismatic structure parting to moderate medium subangular blocky; friable; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine faint olive brown (2.5Y 4/4) masses of iron and manganese in the matrix; neutral; gradual smooth boundary.

Bg1—22 to 33 inches; dark grayish brown (2.5Y 4/2) fine sandy loam; weak medium prismatic structure parting to moderate medium and coarse subangular blocky; friable; few faint very dark grayish brown (2.5Y 3/2) organic coatings on faces of peds; common fine faint dark gray (10YR 4/1) weakly cemented manganese oxide nodules throughout; common fine prominent yellowish brown (10YR 5/6) and few fine prominent yellowish brown (10YR 5/8) masses of iron in the matrix; neutral; gradual wavy boundary.

Bg2—33 to 41 inches; 60 percent grayish brown (2.5Y 5/2) and 40 percent dark grayish brown (2.5Y 4/2) fine sandy loam; weak coarse prismatic structure parting to weak coarse subangular blocky; friable; few fine prominent light olive brown (2.5Y 5/6) masses of iron in the matrix; neutral; gradual wavy boundary.

Cg—41 to 54 inches; light olive gray (5Y 6/2) sand; single grain; loose; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; gradual wavy boundary.

C—54 to 60 inches; yellowish brown (10YR 5/8) sand; single grain; loose; common medium prominent gray (5Y 6/1) and light olive gray (5Y 6/2) iron depletions in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Thickness of the solum: 24 to 50 inches

Ap and A horizons:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3

Chroma—0 to 2

Texture—fine sandy loam, loam, or sandy loam

Bg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—fine sandy loam or sandy loam

Cg horizon:

Hue—10YR or 2.5Y

Value—4 to 7

Chroma—1 to 3

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

Content of gravel—less than 10 percent

201A—Gilford fine sandy loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains

Position on landform: Toeslopes

Map Unit Composition

Gilford and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more than 10 percent gravel in the lower part
- Soils that have carbonates in the upper part
- Soils with a thicker dark surface soil

Dissimilar soils:

- The poorly drained, calcareous Fieldon soils on toeslopes

Properties and Qualities of the Gilford Soil

Parent material: Outwash

Drainage class: 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 7.5 inches to a depth of 60 inches

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

Shrink-swell potential: Low

Apparent seasonal high water table: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Gilford—2w
Prime farmland status: Gilford—prime farmland where drained
Hydric soil status: Gilford—hydric

1201A—Gilford fine sandy loam, undrained, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on landform: Toeslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have more than 10 percent gravel in the lower part
- Soils that have carbonates in the upper part
- Soils with a thicker dark surface soil

Dissimilar soils:

- The poorly drained, calcareous Fieldon soils on toeslopes
- The very poorly drained Houghton soils on toeslopes

Properties and Qualities of the Gilford Soil

Parent material: Outwash
Drainage class: 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 6.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table: Within a depth of 1.0 foot, Nov-Jun
Ponding: 0.5 foot above the surface during wet periods
Flooding: None
Potential for frost action: High
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Gilford—5w
Prime farmland status: Gilford—not prime farmland
Hydric soil status: Gilford—hydric

Granby Series

Drainage class: Poorly drained
Permeability: Rapid
Landform: Outwash plains
Parent material: Outwash
Slope range: 0 to 2 percent
Taxonomic classification: Sandy, mixed, mesic Typic Endoaquolls

Typical Pedon

Granby fine sandy loam, 0 to 2 percent slopes; at an elevation of 630 feet; 1,360 feet north and 100 feet west of the southeast corner of sec. 21, T. 29 N., R. 11 W.; Iroquois County, Illinois; USGS Donovan topographic quadrangle; lat. 40 degrees 59 minutes 03 seconds N. and long. 87 degrees 34 minutes 53 seconds W., NAD 27:

- Ap—0 to 8 inches; black (10YR 2/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine granular structure; very friable; neutral; abrupt smooth boundary.
- A—8 to 17 inches; very dark grayish brown (10YR 3/2) loamy sand, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to weak medium granular; very friable; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; few fine faint dark grayish brown (2.5Y 4/2) iron depletions in the matrix; neutral; clear smooth boundary.
- Bg1—17 to 23 inches; dark grayish brown (2.5Y 4/2) loamy fine sand; weak fine subangular blocky structure; very friable; few coarse prominent yellowish brown (10YR 5/6) masses of iron in the matrix; many coarse faint dark gray (10YR 4/1) iron depletions in the matrix; neutral; clear smooth boundary.
- Bg2—23 to 30 inches; dark grayish brown (2.5Y 4/2) loamy fine sand; weak medium subangular blocky structure; very friable; many medium distinct olive brown (2.5Y 4/4) masses of iron and manganese in the matrix; very dark grayish brown (2.5Y 3/2) krotovina at a depth of 25 to 30 inches; many coarse prominent yellowish brown (10YR 5/6)

masses of iron in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

Cg1—30 to 40 inches; 80 percent grayish brown (10YR 5/2) and 20 percent brown (10YR 5/3) fine sand; single grain; loose; few fine prominent strong brown (7.5YR 4/6) weakly cemented iron and manganese oxide nodules throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; strongly effervescent; moderately alkaline; gradual smooth boundary.

Cg2—40 to 76 inches; olive gray (5Y 5/2) fine sand; single grain; loose; common medium prominent dark yellowish brown (10YR 4/6) masses of iron in the matrix; strongly effervescent; moderately alkaline; gradual smooth boundary.

Cg3—76 to 86 inches; gray (2.5Y 5/1) fine sand; single grain; loose; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 20 to 52 inches

Ap and A horizons:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—2 or 3

Chroma—0 to 2

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

Bg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 3

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

Content of gravel—less than 5 percent

Cg horizon:

Hue—10YR, 2.5Y or 5Y

Value—4 to 7

Chroma—1 to 4

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

Content of gravel—less than 5 percent

513A—Granby fine sandy loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains

Position on landform: Toeslopes

Map Unit Composition

Granby and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a thicker dark surface soil
- Soils that have carbonates in the upper part
- Soils that have more gravel in the lower part

Dissimilar soils:

- The somewhat poorly drained Watseka soils on summits and footslopes
- The poorly drained, calcareous Fieldon soils on toeslopes

Properties and Qualities of the Granby Soil

Parent material: Outwash

Drainage class: 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 5.3 inches to a depth of 60 inches

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

Shrink-swell potential: Low

Apparent seasonal high water table: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Granby—3w

Prime farmland status: Granby—not prime farmland

Hydric soil status: Granby—hydric

Graymont Series

Drainage class: Moderately well drained

Permeability: Moderate in the upper part of the profile, slow in the lower part

Landform: Ground moraines and end moraines

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

Slope range: 0 to 10 percent

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

Taxadjunct Feature

Graymont silt loam, 5 to 10 percent slopes, eroded, has a mollic epipedon that is less than 10 inches thick. It is a fine-silty, mixed, superactive, mesic Oxyaquic Hapludalf.

Typical Pedon

Graymont silt loam, 2 to 5 percent slopes; at an elevation of 704 feet; 2,100 feet north and 100 feet east of the southwest corner of sec. 28, T. 28 N., R. 3 E.; Livingston County, Illinois; USGS Flanagan Southwest topographic quadrangle; lat. 40 degrees 51 minutes 40 seconds N. and long. 88 degrees 53 minutes 30 seconds W., NAD 27:

- Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.
- AB—7 to 12 inches; very dark brown (10YR 2/2) silt loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; few very fine roots; slightly acid; clear smooth boundary.
- Bt1—12 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine angular blocky structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
- Bt2—19 to 24 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
- Bt3—24 to 28 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.
- Bt4—28 to 33 inches; brown (10YR 5/3) silt loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct

yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint light brownish gray (10YR 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

2Btg—33 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure; firm; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct light olive brown (2.5Y 5/4) masses of iron in the matrix; 3 percent gravel; neutral; clear smooth boundary.

2Cg—38 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent light olive brown (2.5Y 5/6) masses of iron in the matrix; few fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; few fine white (10YR 8/1) calcium carbonate concretions throughout; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Thickness of the loess or other silty material: 20 to 40 inches

Depth to carbonates: 24 to 40 inches

Thickness of the solum: 24 to 45 inches

Ap and AB horizons:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam or silty clay loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—3 or 4

Texture—silty clay loam or silt loam

2Btg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 6

Texture—silty clay loam or silt loam

Content of gravel—1 to 10 percent

2Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 6

Texture—silty clay loam or silt loam

Content of gravel—2 to 15 percent

541A—Graymont silt loam, 0 to 2 percent slopes**Setting**

Landform: Ground moraines and end moraines

Position on landform: Summits

Map Unit Composition

Graymont and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components*Similar soils:*

- Soils with slopes of more than 2 percent
- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have more sand in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:

- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Graymont 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: Slow

Permeability below a depth of 60 inches: Slow

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: 3.0 to 5.0 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Graymont—1

Prime farmland status: Graymont—prime farmland in all areas

Hydric soil status: Graymont—not hydric

541B—Graymont silt loam, 2 to 5 percent slopes**Setting**

Landform: Ground moraines and end moraines

Position on landform: Backslopes and summits

Map Unit Composition

Graymont and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components*Similar soils:*

- Soils that are moderately eroded
- Soils with slopes of less than 2 percent or more than 5 percent
- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have more sand in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:

- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Graymont 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: Slow

Permeability below a depth of 60 inches: 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 5.0 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Graymont—2e

Prime farmland status: Graymont—prime farmland in all areas

Hydric soil status: Graymont—not hydric

541C2—Graymont silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: End moraines and ground moraines

Position on landform: Backslopes and shoulders

Map Unit Composition

Graymont and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils with slopes of less than 5 percent or more than 10 percent
- Soils that have more sand in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet

Dissimilar soils:

- The nearly level, somewhat poorly drained Chenoa soils on summits and footslopes
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Graymont 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:
Slow

Permeability below a depth of 60 inches: Slow

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: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

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

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Graymont—3e

Prime farmland status: Graymont—not prime farmland

Hydric soil status: Graymont—not hydric

Grundelein Series

Drainage class: Somewhat poorly drained

Permeability: Moderate in the upper part of the profile, very rapid in the lower part

Landform: Outwash plains and stream terraces

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

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 765 feet; 340 feet south and 2,200 feet east of the northwest corner of sec. 20, T. 40 N., R. 9 E.; Du Page County, Illinois; USGS West Chicago topographic quadrangle; lat. 41 degrees 56 minutes 12 seconds N. and long. 88 degrees 14 minutes 02 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.

A—8 to 13 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to moderate fine granular; friable; common very fine roots; neutral; abrupt 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; common distinct very dark gray (10YR 3/1) organic coatings and very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.

Bt2—18 to 25 inches; olive brown (2.5Y 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; few distinct very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many

fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine distinct gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—25 to 29 inches; light olive brown (2.5Y 5/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly alkaline; clear smooth boundary.

2Bt4—29 to 35 inches; light olive brown (2.5Y 5/3) silt loam; moderate medium subangular blocky structure; friable; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; many fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 2 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2BC—35 to 43 inches; light olive brown (2.5Y 5/3) sandy loam; weak medium and coarse subangular blocky structure; very friable; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 4 percent gravel; strongly effervescent; moderately alkaline; abrupt wavy boundary.

3C—43 to 80 inches; brown (10YR 4/3) very gravelly loamy sand; single grain; loose; 55 percent gravel; violently 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 45 inches

Depth to sandy and gravelly deposits: 32 to 50 inches

Depth to carbonates: 27 to 50 inches

Thickness of the solum: 36 to 50 inches

Ap and A horizons:

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 and 2BC horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

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

Content of gravel—0 to 20 percent

3C horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—1 to 8

Texture—gravelly sandy loam to extremely gravelly coarse sand

Content of gravel—15 to 70 percent

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

Setting

Landform: Stream terraces and outwash plains

Position on landform: Summits and footslopes

Map Unit Composition

Grundelein and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have sandy and gravelly deposits beginning at a depth of less than 32 inches or more than 50 inches
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have more sand in the upper one-half of the profile
- Soils that have carbonates beginning at a depth of less than 27 inches

Dissimilar soils:

- The well drained Waupecan soils on summits and backslopes
- 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 9.0 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
Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: High
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Grundelein—1
Prime farmland status: Grundelein—prime farmland in all areas
Hydric soil status: Grundelein—not hydric

Harpster Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Outwash plains, lake plains, and ground moraines
Parent material: Calcareous loess or other silty material over drift
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Calciaquolls

Typical Pedon

Harpster silty clay loam, 0 to 2 percent slopes; at an elevation of 738 feet; 855 feet south and 70 feet west of the northeast corner of sec. 20, T. 23 N., R. 7 E.; Ford County, Illinois; USGS Gibson City West topographic quadrangle; lat. 40 degrees 26 minutes 24 seconds N. and long. 88 degrees 25 minutes 23 seconds W., NAD 27:

Apk—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; many snail shells; strongly effervescent (20 percent calcium carbonate equivalent); moderately alkaline; abrupt smooth boundary.
 Ak—9 to 18 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine and medium granular structure; firm; common very fine

roots; many snail shells; strongly effervescent (18 percent calcium carbonate equivalent); moderately alkaline; clear smooth boundary.

- Bg1—18 to 25 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium angular blocky structure; firm; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few snail shells; common fine distinct light olive brown (2.5Y 5/4) masses of iron in the matrix; slightly effervescent (7 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.
- Bg2—25 to 31 inches; dark gray (5Y 4/1) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few snail shells; few fine prominent dark yellowish brown (10YR 4/4) and few fine distinct olive (5Y 4/4) masses of iron in the matrix; slightly effervescent (5 percent calcium carbonate equivalent); slightly alkaline; gradual smooth boundary.
- Bg3—31 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak coarse prismatic structure parting to weak medium angular blocky; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium distinct olive (5Y 4/4) and few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 2 percent gravel; slightly effervescent (2 percent calcium carbonate equivalent); slightly alkaline; gradual smooth boundary.
- Bg4—36 to 41 inches; 40 percent olive brown (2.5Y 4/4), 35 percent olive yellow (2.5Y 6/6), and 25 percent gray (5Y 5/1) silty clay loam; weak coarse angular blocky structure; firm; few very fine roots; 2 percent gravel; slightly effervescent (2 percent calcium carbonate equivalent); slightly alkaline; gradual smooth boundary.
- Cg1—41 to 56 inches; 55 percent gray (5Y 5/1), 40 percent light olive brown (2.5Y 5/6), and 5 percent dark yellowish brown (10YR 4/4) silt loam; massive; firm; 1 percent gravel; strongly effervescent (16 percent calcium carbonate equivalent); moderately alkaline; clear smooth boundary.
- Cg2—56 to 60 inches; gray (10YR 5/1) loam, massive; friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Thickness of the loess or other silty material: 36 to 60 inches

Depth to carbonates: Less than 16 inches

Thickness of the solum: 22 to 46 inches

Apk and Ak horizons:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—2 or 3

Chroma—0 or 1

Texture—silty clay loam

Bg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—3 to 6

Chroma—0 to 2

Texture—mainly, silty clay loam or silt loam; loam or clay loam in lower part in some pedons

Cg horizon:

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 8

Texture—silt loam, loam, sandy loam, or clay loam

Content of gravel—less than 7 percent

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

Setting

Landform: Outwash plains, ground moraines, and lake plains

Position on landform: Toeslopes

Map Unit Composition

Harpster and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have loamy drift at a depth of less than 36 inches
- Soils that do not have carbonates at or near the surface
- Soils that have more gravel in the lower part

Dissimilar soils:

- The poorly drained, noncalcareous Drummer soils on toeslopes
- The very poorly drained Houghton soils on toeslopes

Properties and Qualities of the Harpster Soil

Parent material: Calcareous loess or other silty material over drift

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.5 to 6.0 percent

Shrink-swell potential: Moderate

Apparent seasonal high water table: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Harpster—2w

Prime farmland status: Harpster—prime farmland where drained

Hydric soil status: Harpster—hydric

1067A—Harpster silty clay loam, undrained, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains

Position on landform: Toeslopes

Map Unit Composition

Harpster and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have loamy drift at a depth of less than 36 inches
- Soils that do not have carbonates at or near the surface
- Soils that have more gravel in the lower part

Dissimilar soils:

- The poorly drained, noncalcareous Drummer soils on toeslopes

Properties and Qualities of the Harpster Soil

Parent material: Calcareous loess or other silty material over drift

Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches:
 Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: Within a depth of 1.0 foot, Nov-Jun
Ponding: 0.5 foot above the surface during wet periods
Flooding: None
Potential for frost action: High
Corrosivity: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Harpster—5w
Prime farmland status: Harpster—not prime farmland
Hydric soil status: Harpster—hydric

Houghton Series

Drainage class: Very poorly drained
Permeability: Moderately slow
Landform: Ground moraines and outwash plains
Parent material: Herbaceous organic material
Slope range: 0 to 2 percent
Taxonomic classification: Euic, mesic Typic Haplosaprists

Typical Pedon

Houghton muck, undrained, 0 to 2 percent slopes; at an elevation of 833 feet; 150 feet south and 2,508 feet west of the northeast corner of sec. 26, T. 25 N., R. 7 E.; Ford County, Illinois; USGS Sibley topographic quadrangle; lat. 40 degrees 36 minutes 08 seconds N. and long. 88 degrees 22 minutes 31 seconds W., NAD 27:

Oa1—0 to 12 inches; black (N 2.5/0) (broken face and rubbed) muck (sapric material); 2 percent fiber; moderate fine granular structure; very friable; common fine roots; neutral; clear smooth boundary.
 Oa2—12 to 20 inches; very dark gray (10YR 3/1) (broken face) and very dark grayish brown (10YR 3/2) (rubbed) muck (sapric material); less than 1 percent fiber; moderate fine angular blocky structure; very friable; few fine roots; neutral; gradual smooth boundary.

Oa3—20 to 40 inches; very dark grayish brown (10YR 3/2) (broken face and rubbed) muck (sapric material); less than 1 percent fiber; weak medium angular blocky structure; very friable; few fine roots; neutral; gradual smooth boundary.
 Oa4—40 to 60 inches; very dark gray (10YR 3/1) (broken face) and very dark grayish brown (10YR 3/2) (rubbed) muck (sapric material); less than 1 percent fiber; massive; very friable; slightly alkaline.

Range in Characteristics

Thickness of the organic material: More than 51 inches

Surface tier:
 Hue—10YR or neutral
 Value—2 or 3
 Chroma—0 to 2

Subsurface tier:
 Hue—10YR, 7.5YR, or neutral
 Value—2 or 3
 Chroma—0 to 3

103A—Houghton muck, 0 to 2 percent slopes

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils in which the organic deposits are less than 51 inches thick
- Soils that have a surface layer with a lower content of organic matter

Dissimilar soils:

- The poorly drained Ashkum soils on toeslopes

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: Within a depth of 1.0 foot, Nov-Jun

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Houghton—3w

Prime farmland status: Houghton—not prime farmland

Hydric soil status: Houghton—hydric

903A—Muskego and Houghton mucks, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines

Position on landform: Toeslopes

Map Unit Composition

Muskego and Houghton soils and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a surface layer with a lower content of organic matter
- Soils in which the organic deposits are less than 51 inches thick

Dissimilar soils:

- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Muskego Soil

Parent material: Herbaceous organic material over coprogenous material

Drainage class: Very poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 19.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 60.0 to 90.0 percent

Shrink-swell potential: Moderate

Apparent seasonal high water table: Within a depth of 1.0 foot, Nov-Jun

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

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: Within a depth of 1.0 foot, Nov-Jun

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Muskego—4w; Houghton—3w

Prime farmland status: Muskego and Houghton—not prime farmland

Hydric soil status: Muskego and Houghton—hydric

1103A—Houghton muck, undrained, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains

Position on landform: Toeslopes

Map Unit Composition

Houghton and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have a surface layer with a lower content of organic matter
- Soils in which the organic deposits are less than 51 inches thick

Dissimilar soils:

- The poorly drained Drummer soils on toeslopes

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: Within a depth of 0.5 foot all year

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Potential for frost action: High

Corrosivity: High for steel and concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Houghton—5w

Prime farmland status: Houghton—not prime farmland

Hydric soil status: Houghton—hydric

1903A—Muskego and Houghton mucks, undrained, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains

Position on landform: Toeslopes

Map Unit Composition

Muskego and Houghton soils and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a surface layer with a lower content of organic matter
- Soils in which the organic deposits are less than 51 inches thick

Dissimilar soils:

- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Muskego Soil

Parent material: Herbaceous organic material over coprogenous material

Drainage class: Very poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 19.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 60.0 to 90.0 percent

Shrink-swell potential: Moderate

Apparent seasonal high water table: Within a depth of 0.5 foot all year

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

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: Within a depth of 0.5 foot all year

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and concrete

Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Muskego—6w;
 Houghton—5w
Prime farmland status: Muskego and Houghton—not
 prime farmland
Hydric soil status: Muskego and Houghton—hydric

Jasper Series

Drainage class: Well drained
Permeability: Moderate
Landform: Outwash plains
Parent material: Outwash
Slope range: 0 to 10 percent
Taxonomic classification: Fine-loamy, mixed,
 superactive, mesic Typic Argiudolls

Taxadjunct Feature

Jasper loam, 5 to 10 percent slopes, eroded, has a mollic epipedon that is less than 10 inches thick. It is a fine-loamy, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Jasper loam, 0 to 2 percent slopes; at an elevation of 673 feet; 380 feet south and 1,500 feet east of the northwest corner of sec. 17, T. 27 N., R. 5 E; Livingston County, Illinois; USGS Southwest Pontiac topographic quadrangle; lat. 40 degrees 48 minutes 47 seconds N. and long. 88 degrees 40 minutes 21 seconds W., NAD 27:

- Ap—0 to 11 inches; very dark gray (10YR 3/1) loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few fine roots; slightly acid; abrupt smooth boundary.
- Bt1—11 to 16 inches; dark yellowish brown (10YR 4/4) clay loam; weak fine subangular blocky structure parting to moderate medium granular; friable; few fine roots; few faint brown (10YR 4/3) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.
- Bt2—16 to 22 inches; dark yellowish brown (10YR 4/4) clay loam; weak fine prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; few faint brown (10YR 4/3) clay films on faces of peds; few fine distinct strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concentrations throughout; few

fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; 2 percent gravel; neutral; clear smooth boundary.

- Bt3—22 to 30 inches; dark yellowish brown (10YR 4/4) sandy clay loam; weak medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; few faint brown (10YR 4/3) clay films on faces of peds; few medium distinct strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concretions throughout; few fine distinct yellowish brown (10YR 5/6) and few fine faint brown (10YR 5/3) masses of iron in the matrix; 3 percent gravel; neutral; clear smooth boundary.
- Bt4—30 to 38 inches; brown (10YR 4/3) sandy loam; weak medium angular blocky structure; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; few medium distinct strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concentrations throughout; common medium faint brown (10YR 5/3) and few fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; 3 percent gravel; neutral; clear smooth boundary.
- BC—38 to 47 inches; brown (10YR 4/3) sandy loam; weak medium angular blocky structure; friable; common medium prominent strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concentrations throughout; common medium faint brown (10YR 5/3 and 7.5YR 4/4) masses of iron in the matrix; 5 percent gravel; neutral; clear smooth boundary.
- C1—47 to 55 inches; brown (10YR 4/3) sandy loam; massive; very friable; common medium prominent strong brown (7.5YR 4/6) weakly cemented iron and manganese oxide concentrations throughout; common medium faint brown (10YR 5/3 and 7.5YR 4/4) masses of iron in the matrix; 4 percent gravel; neutral; clear smooth boundary.
- C2—55 to 60 inches; 80 percent yellowish brown (10YR 5/4) and 20 percent gray (10YR 6/1) sand; single grain; loose; 5 percent gravel; very slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to carbonates: More than 35 inches
Thickness of the solum: 35 to more than 60 inches

Ap or A horizon:
 Hue—10YR
 Value—2 or 3
 Chroma—1 to 3
 Texture—loam or fine sandy loam

Bt horizon:

Hue—7.5YR or 10YR
 Value—4 to 6
 Chroma—3 to 6
 Texture—clay loam, sandy clay loam, loam, or silty clay loam
 Content of gravel—less than 5 percent

C horizon:

Hue—7.5YR or 10YR
 Value—4 to 6
 Chroma—3 to 6
 Texture—stratified sandy clay loam, silt loam, loam, fine sandy loam, sandy loam, loamy sand, fine sand, or sand
 Content of gravel—less than 10 percent

440A—Jasper loam, 0 to 2 percent slopes**Setting**

Landform: Outwash plains
Position on landform: Summits

Map Unit Composition

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

Minor Components*Similar soils:*

- Soils that have slopes of more than 2 percent
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have glacial till in the lower part

Dissimilar soils:

- The somewhat poorly drained Darroch soils on footslopes
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Jasper Soil

Parent material: 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 10.3 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

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Jasper—1

Prime farmland status: Jasper—prime farmland in all areas

Hydric soil status: Jasper—not hydric

440B—Jasper loam, 2 to 5 percent slopes**Setting**

Landform: Outwash plains

Position on landform: Backslopes and summits

Map Unit Composition

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

Minor Components*Similar soils:*

- Soils that are moderately eroded
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have glacial till in the lower part

Dissimilar soils:

- The somewhat poorly drained Darroch soils on footslopes
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Jasper Soil

Parent material: 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 5.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Jasper—2e
Prime farmland status: Jasper—prime farmland in all areas
Hydric soil status: Jasper—not hydric

440C2—Jasper loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains
Position on landform: Shoulders and backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that have more gravel in the lower part
- Soils that have glacial till in the lower part
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:

- The somewhat poorly drained Darroch soils on footslopes
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Jasper Soil

Parent material: 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 10.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Jasper—3e
Prime farmland status: Jasper—prime farmland in all areas
Hydric soil status: Jasper—not hydric

Joliet Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Stream terraces and flood plains
Parent material: Drift or alluvium over dolostone
Slope range: 0 to 2 percent
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Endoaquolls

Typical Pedon

Joliet silt loam, 0 to 2 percent slopes; at an elevation of 530 feet; 680 feet south and 1,484 feet east of the northwest corner of sec. 33, T. 34 N., R. 9 E.; Will County, Illinois; USGS Channahon topographic quadrangle; lat. 41 degrees 23 minutes 17 seconds N. and long. 88 degrees 13 minutes 3 seconds W., NAD 27:

A1—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine to medium roots; 1 percent rock fragments; slightly alkaline; gradual wavy boundary.

A2—7 to 12 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium subangular blocky structure; friable; common very fine to medium roots; 2 percent rock fragments; slightly effervescent; moderately alkaline; clear smooth boundary.

A3—12 to 15 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure; friable; common very fine and fine roots; 5 percent rock fragments; strongly effervescent; moderately alkaline; abrupt wavy boundary.

Bg—15 to 18 inches; dark gray (2.5Y 4/1) silty clay loam; moderate medium subangular blocky structure; firm; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; few very fine roots; 5 percent rock fragments; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2R—18 inches; dark gray (2.5Y 4/1) bedrock.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 16 inches

Depth to lithic contact: 10 to 20 inches

Thickness of the solum: 10 to 20 inches

A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam, silt loam, or silty clay loam

Content of rock fragments—less than 15 percent

B_g horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—3 to 5

Chroma—0 to 2

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

Content of rock fragments—less than 15 percent

314A—Joliet silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces

Position on landform: Toeslopes

Map Unit Composition

Joliet and similar soils: 94 percent

Dissimilar soils: 6 percent

Minor Components

Similar soils:

- Soils that have bedrock at a depth of less than 10 or more than 20 inches
- Soils that have less sand and more clay in the subsoil

Dissimilar soils:

- The poorly drained, very deep Dunham soils on toeslopes

Properties and Qualities of the Joliet Soil

Parent material: Drift over dolostone

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Slow

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

Depth to restrictive feature (lithic bedrock): 10 to 20 inches

Available water capacity: About 3.7 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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Joliet—3w

Prime farmland status: Joliet—not prime farmland

Hydric soil status: Joliet—hydric

3314A—Joliet silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Joliet and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have bedrock at a depth of less than 10 or more than 20 inches
- Soils that have less sand and more clay in the subsoil

Dissimilar soils:

- Soils that are not subject to flooding

Properties and Qualities of the Joliet Soil

Parent material: Alluvium over dolostone

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Slow

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

Depth to restrictive feature (lithic bedrock): 10 to 20 inches

Available water capacity: About 3.6 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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: Frequent, Nov-Jun

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Joliet—4w

Prime farmland status: Joliet—not prime farmland

Hydric soil status: Joliet—hydric

Kane Series

Drainage class: Somewhat poorly drained

Permeability: Moderate in the upper part of the profile, rapid in the lower part

Landform: Outwash plains and stream terraces

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 613 feet; 1,700 feet south and 60 feet west of the northeast corner of sec. 33, T. 34 N., R. 8 E.; Grundy County, Illinois; USGS Minooka topographic quadrangle; lat. 41 degrees 23 minutes 00 seconds N. and long. 88 degrees 18 minutes 29 seconds W., NAD 27:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A—7 to 11 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; neutral; clear smooth boundary.

Bt1—11 to 15 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt2—15 to 20 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky

structure; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt3—20 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/8) masses of iron in the matrix; many fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

2Bt4—26 to 34; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 4/4) clay films on vertical faces of peds; many medium faint yellowish brown (10YR 5/8) masses of iron in the matrix; many fine distinct brown (10YR 5/3) iron depletions in the matrix; 3 percent gravel; neutral; gradual smooth boundary.

3C—34 to 65 inches; 60 percent yellowish brown (10YR 5/4) and 40 percent light gray (10YR 7/2) gravelly coarse sand; single grain; loose; 22 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Depth to sandy and gravelly glaciofluvial deposits: 20 to 40 inches

Depth to carbonates: 20 to 40 inches

Thickness of the solum: 20 to 40 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam, loam, or silty clay loam

Bt and 2Bt horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 8

Texture—silty clay loam, 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 8

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: Outwash plains and stream terraces

Position on landform: Summits and footslopes

Map Unit Composition

Kane and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have less sand and more clay in the subsoil
- 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 thinner subsurface layer

Dissimilar soils:

- The well drained Warsaw soils on summits
- 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 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

Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Kane—2s

Prime farmland status: Kane—prime farmland in all areas

Hydric soil status: Kane—not hydric

Kankakee Series

Drainage class: Well drained

Permeability: Moderate in the upper part of the profile, moderately rapid in the lower part

Landform: Outwash plains and stream terraces

Parent material: Loamy outwash and the underlying cobbly outwash

Slope range: 2 to 4 percent

Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic Typic Hapludolls

Typical Pedon

Kankakee fine sandy loam, 0 to 2 percent slopes; at an elevation of 635 feet; 1,660 feet north and 216 feet east of the southwest corner of sec. 36, T. 31 N., R. 10 E.; Kankakee County, Illinois; USGS Herscher topographic quadrangle; lat. 41 degrees 07 minutes 21 seconds N. and long. 88 degrees 01 minute 44 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) fine sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; many very fine roots; neutral; abrupt smooth boundary.

A—7 to 10 inches; very dark grayish brown (10YR 3/2) fine sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; many very fine roots; moderately acid; clear smooth boundary.

AB—10 to 14 inches; dark brown (10YR 3/3) fine sandy loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; friable; many very fine and fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bt1—14 to 22 inches; yellowish brown (10YR 5/4) sandy clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds; many distinct brown (10YR 4/3) clay films on faces of peds; 3 percent gravel; slightly acid; gradual wavy boundary.

2Bt2—22 to 27 inches; dark yellowish brown (10YR 4/4) very cobbly loam; weak fine subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 25 percent cobbles and 15 percent gravel; neutral; gradual wavy boundary.

2C—27 to 60 inches; dark yellowish brown (10YR 4/4) very cobbly loam; massive; friable; common very fine and fine roots; common fine distinct strong brown (7.5YR 5/6) masses of iron in the matrix; 40 percent cobbles and 20 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Depth to cobbly material: 10 to 30 inches

Thickness of the solum: 20 to 45 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—loam, sandy loam, fine sandy loam, sandy clay loam, or clay loam

Bt or Bw horizon:

Hue—10YR

Value—4 to 6

Chroma—3 to 8

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

Content of cobbles—0 to 15 percent

2Bt or 2Bw horizon:

Hue—10YR

Value—4 to 6

Chroma—3 to 8

Texture—the very cobbly or cobbly analogs of loam or sandy loam

Content of cobbles—15 to 60 percent

2C horizon:

Hue—10YR

Value—4 to 6

Chroma—3 to 8

Texture—the extremely cobbly, very cobbly, or cobbly analogs of loam or sandy loam

Content of cobbles—20 to 70 percent

494B—Kankakee fine sandy loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces

Position on landform: Summits

Map Unit Composition

Kankakee and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have slopes of less than 2 percent
- Soils that have more cobbles in the upper part
- Soils that have less sand and more silt in the upper part

Dissimilar soils:

- The poorly drained Will soils on toeslopes

Properties and Qualities of the Kankakee Soil

Parent material: Loamy outwash and the underlying cobbly 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 7.6 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

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Kankakee—2e

Prime farmland status: Kankakee—prime farmland in all areas

Hydric soil status: Kankakee—not hydric

La Hogue Series

Drainage class: Somewhat poorly drained

Permeability: Moderate

Landform: Outwash plains and stream terraces

Parent material: Outwash

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, superactive, mesic 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 47 seconds N. and long. 88 degrees 13 minutes 32 seconds W., NAD 27:

- 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 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; common medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; few fine prominent strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concretions throughout; 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 in the matrix; many medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; neutral; clear smooth boundary.
- BC—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 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 in the matrix; many medium distinct light brownish gray (2.5Y 6/2) and common fine prominent gray (N 6/0) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Depth to carbonates: More than 60 inches

Thickness of the solum: 35 to 60 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

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

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 landform: Footslopes and summits

Map Unit Composition

La Hogue and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more than 15 percent gravel in the lower part of the subsoil

- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have till in the lower part of the subsoil
- Soils that have carbonates at a depth of less than 60 inches

Dissimilar soils:

- The well drained Jasper soils on summits and backslopes
- 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 4.0 percent

Shrink-swell potential: Moderate

Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: La Hogue—1

Prime farmland status: La Hogue—prime farmland in all areas

Hydric soil status: La Hogue—not hydric

830—Landfills

This map unit is in areas of garbage and other refuse and in areas of rubble from the demolition of buildings and pavement. The surface is typically covered by a layer of compacted earth. Slopes vary considerably. Some landfills are active, but some have been abandoned.

Map Unit Composition

Landfills: 85 percent

Dissimilar components: 15 percent

Minor Components

Dissimilar components:

- Well drained, loamy Orthents on summits and backslopes
- The poorly drained Drummer and Dunham soils on toeslopes

Interpretive Groups

Land capability classification: Landfills—none assigned

Prime farmland status: Landfills—not prime farmland

Hydric soil status: Landfills—unranked

Lawson Series

Drainage class: Somewhat poorly drained

Permeability: Moderate

Landform: Flood plains

Parent material: Alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Lawson silt loam, 0 to 2 percent slopes, occasionally flooded; at an elevation of 490 feet; 1,460 feet north and 2,440 feet east of the southwest corner of sec. 9, T. 33 N., R. 7 E.; Grundy County, Illinois; USGS Morris topographic quadrangle; lat. 41 degrees 20 minutes 47 seconds N. and long. 88 degrees 26 minutes 00 seconds W., NAD 27:

Ap—0 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; slightly alkaline; gradual smooth boundary.

A1—14 to 26 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; slightly alkaline; gradual smooth boundary.

A2—26 to 33 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; slightly alkaline; gradual smooth boundary.

Cg1—33 to 60 inches; dark grayish brown (10YR 4/2) silty clay loam; massive; friable; few fine distinct yellowish brown (10YR 5/4) masses of iron in the matrix; slightly alkaline; gradual smooth boundary.

Cg2—60 to 80 inches; 80 percent gray (10YR 6/1) and 20 percent dark gray (10YR 4/1), stratified loam and silt loam; massive; friable; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

Cg or C horizon:

Hue—10YR or 2.5Y

Value—3 to 6

Chroma—1 to 3

Texture—silt loam, silty clay loam, or loam

3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are overlain by light colored recent deposits
- Soils that have a thinner subsurface layer
- Soils that have less silt and more clay in the upper one-half of the profile
- Soils that have more gravel in the lower part

Dissimilar soils:

- The poorly drained Sawmill soils on toeslopes

Properties and Qualities of the Lawson Soil

Parent material: Alluvium

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches:
Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.3 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

Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: Frequent, Nov-Jun

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Lawson—2w

Prime farmland status: Lawson—prime farmland where protected from flooding or not frequently flooded during the growing season

Hydric soil status: Lawson—not hydric

8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are overlain by light colored recent deposits
- Soils that have a thinner subsurface layer
- Soils that have less silt and more clay in the upper one-half of the profile
- Soils that have more gravel in the lower part

Dissimilar soils:

- The poorly drained Sawmill soils on toeslopes

Properties and Qualities of the Lawson Soil

Parent material: Alluvium

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches:
Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.1 inches to a depth of 60 inches

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

Shrink-swell potential: Moderate

Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: Occasional, Nov-Jun

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Lawson—2w
Prime farmland status: Lawson—prime farmland in all areas
Hydric soil status: Lawson—not hydric

Lorenzo Series

Drainage class: Well drained
Permeability: Moderate in the upper part of the profile, very rapid in the lower part
Landform: Stream terraces and outwash plains
Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 12 percent
Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Typic Argiudolls

Typical Pedon

Lorenzo loam, 2 to 4 percent slopes; at an elevation of 510 feet; 320 feet south and 1,720 feet west of the northeast corner of sec. 35, T. 33 N., R. 5 E.; LaSalle County, Illinois; USGS Seneca topographic quadrangle; lat. 41 degrees 17 minutes 47 seconds N. and long. 88 degrees 37 minutes 03 seconds W., NAD 27:

Ap—0 to 6 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium granular structure; friable; neutral; common very fine roots; clear smooth boundary.

AB—6 to 9 inches; dark brown (7.5YR 3/2) loam, brown (7.5YR 5/2) dry; weak medium angular blocky structure; friable; neutral; clear smooth boundary.

Bt1—9 to 16 inches; brown (7.5YR 4/4) clay loam; weak medium and coarse angular blocky structure; firm; common distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; 3 percent gravel; slightly acid; abrupt smooth boundary.

2Bt2—16 to 18 inches; brown (7.5YR 4/4) gravelly loam; very weak coarse subangular blocky structure; very friable; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; 20 percent gravel; slightly alkaline; abrupt smooth boundary.

2C—18 to 60 inches; yellowish brown (10YR 5/4)

extremely gravelly sand; single grain; loose; 70 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 6 to 15 inches
Depth to sandy and gravelly deposits: 12 to 24 inches
Depth to carbonates: 12 to 24 inches
Thickness of the solum: 12 to 24 inches

Ap and AB horizons:

Hue—7.5YR or 10YR
 Value—2 or 3
 Chroma—1 or 2
 Texture—loam, silt loam, or sandy loam

Bt and 2Bt horizons:

Hue—7.5YR or 10YR
 Value—4 or 5
 Chroma—3 or 4
 Texture—clay loam, loam, sandy clay loam, or the gravelly analogs of those textures
 Content of gravel—2 to 35 percent

2C horizon:

Hue—7.5YR or 10YR
 Value—4 or 5
 Chroma—3 to 6
 Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
 Content of gravel—20 to 75 percent

318A—Lorenzo loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on landform: Summits

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have sandy and gravelly deposits beginning at a depth of more than 24 inches
- Soils that have slopes of more than 2 percent

Dissimilar soils:

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

Properties and Qualities of the Lorenzo 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 5.0 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
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Lorenzo—3s
Prime farmland status: Lorenzo—not prime farmland
Hydric soil status: Lorenzo—not hydric

318B—Lorenzo loam, 2 to 4 percent slopes**Setting**

Landform: Stream terraces and outwash plains
Position on landform: Backslopes and summits

Map Unit Composition

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

Minor Components*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that are moderately eroded
- Soils with slopes of less than 2 percent or more than 4 percent
- Soils that have sandy and gravelly deposits beginning at a depth of more than 24 inches

Dissimilar soils:

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

Properties and Qualities of the Lorenzo 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 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: Moderate
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Lorenzo—3s
Prime farmland status: Lorenzo—not prime farmland
Hydric soil status: Lorenzo—not hydric

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

Landform: Stream terraces and outwash plains
Position on landform: Shoulders and backslopes

Map Unit Composition

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

Minor Components*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have sandy and gravelly deposits beginning at a depth of more than 24 inches
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have carbonates beginning at a depth of less than 12 inches or more than 24 inches

Dissimilar soils:

- The excessively drained Rodman soils on shoulders and backslopes
- The somewhat poorly drained Kane soils on summits and footslopes

- The poorly drained Will soils on toeslopes

Properties and Qualities of the Lorenzo 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 4.2 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

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Lorenzo—3e

Prime farmland status: Lorenzo—not prime farmland

Hydric soil status: Lorenzo—not hydric

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

Setting

Landform: Outwash plains and stream terraces

Position on landform: Backslopes

Map Unit Composition

Lorenzo and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have carbonates beginning at depth of less than 12 inches or more than 24 inches
- Soils that have a lighter colored surface layer
- Soils with slopes of less than 6 percent or more than 12 percent
- Soils that have sandy and gravelly deposits beginning at a depth of more than 24 inches

Dissimilar soils:

- The excessively drained Rodman soils on shoulders and backslopes

Properties and Qualities of the Lorenzo 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 3.9 inches to a depth of 60 inches

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

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Lorenzo—3e

Prime farmland status: Lorenzo—not prime farmland

Hydric soil status: Lorenzo—not hydric

Markham Series

Drainage class: Moderately well drained

Permeability: Slow

Landform: Ground moraines and end moraines

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

Slope range: 2 to 12 percent

Taxonomic classification: Fine, illitic, mesic Oxyaquic Hapludalfs

Typical Pedon

Markham silt loam, 2 to 4 percent slopes; at an elevation of 775 feet; 2,125 feet south and 1,375 feet east of the northwest corner of sec. 16, T. 40 N., R. 9 E.; Du Page County, Illinois; USGS West Chicago topographic quadrangle; lat. 41 degrees 57 seconds 11 minutes N. and long. 88 degrees 13 minutes 08 seconds W., NAD 27:

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

A—5 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate

fine subangular blocky structure parting to weak fine granular; friable; common very fine roots; moderately acid; abrupt smooth boundary.

BA—8 to 12 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; moderately acid; clear wavy boundary.

2Bt1—12 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium prismatic structure parting to moderate fine subangular blocky; friable; common very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; common fine strong brown (7.5YR 4/6) very weakly cemented iron oxide concretions throughout; 2 percent gravel; slightly acid; clear wavy boundary.

2Bt2—21 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium subangular blocky structure; friable; common very fine and fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine yellowish red (5YR 4/6) very weakly cemented iron oxide concretions throughout; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 7 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2BC—26 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium and coarse angular blocky structure; firm; common very fine roots; common fine yellowish red (5YR 5/6) very weakly cemented iron oxide concretions throughout; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 6 percent gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

2Cd1—32 to 39 inches; yellowish brown (10YR 5/4) silty clay loam; massive; very firm; few very fine roots; common fine yellowish red (5YR 5/6) very weakly cemented iron oxide concretions throughout; 6 percent gravel; violently effervescent; moderately alkaline; gradual wavy boundary.

2Cd2—39 to 60 inches; brown (10YR 5/3) silty clay loam; massive; very firm; common fine yellowish red (5YR 5/6) very weakly cemented iron oxide concretions throughout; 7 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 18 inches

Depth to carbonates: 18 to 42 inches
Thickness of the solum: 20 to 50 inches

Ap and A horizons:

Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt, 2Bt, or 2BC horizon:

Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 8
Texture—silty clay loam or silty clay
Content of gravel—less than 10 percent

2Cd horizon:

Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam
Content of gravel—less than 10 percent

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

Setting

Landform: Ground moraines and end moraines

Position on landform: Backslopes and summits

Map Unit Composition

Markham and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

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

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Markham 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 (dense material): 20 to 55 inches
Available water capacity: About 7.8 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
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Markham—2e
Prime farmland status: Markham—prime farmland in all areas
Hydric soil status: Markham—not hydric

531C2—Markham silt loam, 4 to 6 percent slopes, eroded

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet

Dissimilar soils:

- The nearly level, somewhat poorly drained Beecher soils on summits and footslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Markham 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 (dense material): 20 to 55 inches
Available water capacity: About 7.6 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

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Markham—3e

Prime farmland status: Markham—prime farmland in all areas

Hydric soil status: Markham—not hydric

531D2—Markham silt loam, 6 to 12 percent slopes, eroded

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that slopes of less than 6 percent or more than 12 percent
- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet

Dissimilar soils:

- The calcareous, moderately well drained Chatsworth soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Markham 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 (dense material): 20 to 55 inches

Available water capacity: About 7.6 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

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Markham—3e

Prime farmland status: Markham—not prime farmland

Hydric soil status: Markham—not hydric

Martinsville Series

Drainage class: Well drained

Permeability: Moderate

Landform: Outwash plains and stream terraces

Parent material: Outwash

Slope range: 2 to 30 percent

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

Typical Pedon

Martinsville loam, 6 to 12 percent slopes, eroded; at an elevation of 570 feet; 440 feet south and 2,140 feet east of the northwest corner of sec. 31, T. 33 N., R. 10 E.; Will County, Illinois; USGS Symerton topographic quadrangle; lat. 41 degrees 18 minutes 18 seconds N. and long. 88 degrees 7 minutes 24 seconds W., NAD 27:

A—0 to 5 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; many very fine to

medium roots; moderately acid; clear smooth boundary.

E—5 to 13 inches; 60 percent dark grayish brown (10YR 4/2) and 40 percent brown (10YR 4/3) loam, light gray (10YR 7/2) dry; weak thin platy structure parting to weak fine granular; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

BE—13 to 21 inches; brown (10YR 5/3) loam, light gray (10YR 7/2) dry; moderate thick platy structure; very friable; common very fine and fine roots; few fine black (10YR 2/1) weakly cemented manganese oxide nodules throughout; strongly acid; clear wavy boundary.

Bt1—21 to 25 inches; yellowish brown (10YR 5/4) loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds; common fine black (10YR 2/1) weakly cemented manganese oxide nodules throughout; strongly acid; clear wavy boundary.

Bt2—25 to 28 inches; yellowish brown (10YR 5/4) loam; strong fine and medium subangular blocky structure; friable; common fine and medium roots; many distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds; few fine strong brown (7.5YR 4/6) weakly cemented iron oxide concretions throughout; strongly acid; gradual wavy boundary.

Bt3—28 to 35 inches; dark yellowish brown (10YR 4/4) loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on all faces of peds; few fine strong brown (7.5YR 4/6) weakly cemented iron oxide concretions throughout; strongly acid; clear wavy boundary.

Bt4—35 to 47 inches; dark yellowish brown (10YR 4/4) sandy loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on all faces of peds; common medium prominent red (2.5YR 4/8) masses of iron in the matrix; strongly acid; clear wavy boundary.

BCt—47 to 55 inches; 50 percent yellowish brown (10YR 5/4) and 50 percent dark yellowish brown (10YR 4/4) sandy loam; weak fine subangular blocky structure; very friable; common distinct brown (10YR 4/3) clay films on all faces of peds; common medium distinct strong brown (7.5YR 4/6) masses of iron in the matrix; few fine black (10YR 2/1) strongly cemented manganese oxide nodules throughout; strongly acid; gradual wavy boundary.

C1—55 to 70 inches; 60 percent yellowish brown (10YR 5/4) and 40 percent strong brown (7.5YR 4/6), stratified loamy sand to sandy loam; massive; very friable; common fine black (10YR 2/1) strongly cemented manganese oxide nodules throughout; moderately acid; clear wavy boundary.

C2—70 to 91 inches; 50 percent yellowish brown (10YR 5/4), 25 percent brown (7.5YR 4/4), and 25 percent strong brown (7.5YR 4/6), stratified sandy loam to loamy sand; massive; very friable; few fine black (10YR 2/1) strongly cemented manganese oxide nodules throughout; moderately acid.

Range in Characteristics

Depth to carbonates: More than 40 inches

Thickness of the solum: 40 to 75 inches

Ap or A horizon:

Hue—10YR

Value—3 to 5

Chroma—2 or 3

Texture—loam, silt loam, fine sandy loam, or sandy 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, or sandy loam

Content of gravel—less than 10 percent

C horizon:

Hue—10YR

Value—4 to 6

Chroma—3 to 6

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

Content of gravel—less than 10 percent

570B—Martinsville loam, 2 to 4 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Summits and backslopes

Map Unit Composition

Martinsville and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have slopes of less than 2 percent
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have more gravel in the lower part
- Soils that have a thicker dark surface layer

Dissimilar soils:

- The somewhat poorly drained Starks soils on summits and footslopes
- The moderately deep, well drained Fox soils on summits and backslopes
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Martinsville Soil

Parent material: 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: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Martinsville—2e

Prime farmland status: Martinsville—prime farmland in all areas

Hydric soil status: Martinsville—not hydric

570C2—Martinsville loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces

Position on landform: Shoulders and backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils with slopes of less than 4 percent or more than 6 percent
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have more gravel in the lower part
- Soils that have less clay in the subsoil

Dissimilar soils:

- The somewhat poorly drained Starks soils on summits and footslopes
- The moderately deep, well drained Fox soils on shoulders and backslopes
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Martinsville Soil

Parent material: 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

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Martinsville—2e

Prime farmland status: Martinsville—prime farmland in all areas

Hydric soil status: Martinsville—not hydric

570D2—Martinsville loam, 6 to 12 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces

Position on landform: Backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils with slopes of less than 6 percent or more than 12 percent
- Soils that have more gravel in the lower part
- Soils that have less clay in the subsoil
- Soils that are severely eroded

Dissimilar soils:

- The somewhat poorly drained La Hogue soils on summits and footslopes

Properties and Qualities of the Martinsville Soil

Parent material: 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 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

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Martinsville—3e

Prime farmland status: Martinsville—not prime farmland

Hydric soil status: Martinsville—not hydric

570E2—Martinsville loam, 12 to 20 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains

Position on landform: Backslopes

Map Unit Composition

Martinsville and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils with slopes of less than 12 percent or more than 20 percent
- Soils that have less clay in the subsoil
- Soils that have more gravel in the lower part

Dissimilar soils:

- The somewhat poorly drained La Hogue soils on summits and footslopes

Properties and Qualities of the Martinsville Soil

Parent material: 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 10.8 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

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Martinsville—4e

Prime farmland status: Martinsville—not prime farmland

Hydric soil status: Martinsville—not hydric

570F—Martinsville loam, 20 to 30 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Backslopes

Map Unit Composition

Martinsville and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils with slopes of less than 20 percent or more than 30 percent
- Soils that have less clay in the subsoil
- Soils that are moderately eroded

Dissimilar soils:

- The somewhat poorly drained La Hogue soils on summits and footslopes

Properties and Qualities of the Martinsville Soil

Parent material: 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 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Martinsville—6e

Prime farmland status: Martinsville—not prime farmland

Hydric soil status: Martinsville—not hydric

Martinton Series

Drainage class: Somewhat poorly drained

Permeability: Moderately slow

Landform: Lake plains

Parent material: Lacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Martinton silt loam, 0 to 2 percent slopes, at an elevation of 650 feet; 425 feet north and 160 feet west of the southeast corner of sec. 5, T. 27 N., R. 7 E.; Livingston County, Illinois; USGS Forrest North topographic quadrangle; lat. 40 degrees 50 minutes 01 second N. and long. 88 degrees 26 minutes 03 seconds W., NAD 27:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A—7 to 12 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; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

BA—12 to 19 inches; brown (10YR 4/3) silty clay loam; moderate fine angular blocky structure; friable; few very fine roots; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Btg1—19 to 27 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine prismatic structure parting to moderate fine angular blocky; firm; few very fine roots; common distinct very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Btg2—27 to 39 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine angular blocky; firm; few very fine roots; common faint very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; few black (7.5YR 2.5/1) iron and manganese

oxide concretions throughout; many medium distinct light olive brown (2.5Y 5/4) and few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.

BCtg—39 to 46 inches; grayish brown (2.5Y 5/2) silt loam; weak medium prismatic structure; friable; few faint dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; very slightly effervescent; slightly alkaline; clear smooth boundary.

Cg—46 to 60 inches; 60 percent grayish brown (2.5Y 5/2) and 40 percent yellowish brown (10YR 5/6), stratified silty clay loam and sandy loam; massive; friable; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Depth to carbonates: 24 to 50 inches

Thickness of the solum: 30 to 52 inches

Ap and horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

Btg or Bt horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—2 or 3

Texture—silty clay loam or silty clay

Cg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 6

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

189A—Martinton silt loam, 0 to 2 percent slopes

Setting

Landform: Lake plains

Position on landform: Summits and footslopes

Map Unit Composition

Martinton and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have gravel in the lower part
- Soils with slopes of more than 2 percent
- Soils that have less clay in the subsoil

Dissimilar soils:

- The poorly drained Milford soils on toeslopes

Properties and Qualities of the Martinton Soil

Parent material: Lacustrine deposits

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 10.6 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

Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Martinton—2w

Prime farmland status: Martinton—prime farmland in all areas

Hydric soil status: Martinton—not hydric

Milford Series

Drainage class: Poorly drained

Permeability: Moderately slow

Landform: Lake plains

Parent material: Lacustrine deposits

Slope range: 0 to 2 percent

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

Typical Pedon

Milford silty clay loam, 0 to 2 percent slopes, at an elevation of 643 feet; 1,450 feet north and 70 feet east of the southwest corner of sec. 4, T. 26 N., R. 14 W.;

Iroquois County, Illinois; USGS Gilman topographic quadrangle; lat. 40 degrees 45 minutes 24 seconds N. and long. 87 degrees 57 minutes 29 seconds W., NAD 27:

Ap—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine and fine subangular and angular blocky structure; firm; many fine roots; slightly acid; abrupt smooth boundary.

A—9 to 18 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate and strong very fine subangular blocky structure; firm; common fine roots; slightly acid; clear smooth boundary.

BA—18 to 22 inches; very dark gray (10YR 3/1) silty clay, gray (10YR 5/1) dry; moderate fine and medium angular blocky structure; very firm; common fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common medium prominent olive brown (2.5Y 4/4) masses of iron in the matrix; common medium faint dark grayish brown (2.5Y 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg1—22 to 31 inches; gray (5Y 5/1) silty clay loam; moderate medium and coarse prismatic structure parting to moderate medium and coarse angular and subangular blocky; very firm; common fine roots; many distinct dark gray (5Y 4/1) pressure faces on peds; few fine black (N 2.5/0) iron and manganese oxide concretions throughout; many medium prominent dark yellowish brown (10YR 4/4) masses of iron in the matrix; many medium faint grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg2—31 to 42 inches; gray (5Y 5/1) clay loam; moderate coarse prismatic structure parting to moderate medium and coarse angular blocky; very firm; few fine roots; common medium prominent dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.

Bg3—42 to 50 inches; dark gray (5Y 4/1) silty clay loam stratified with thin bands of clay loam; moderate coarse prismatic structure parting to moderate coarse subangular and angular blocky; firm; few fine roots; many medium prominent dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear wavy boundary.

Cg—50 to 60 inches; gray (5Y 5/1) clay loam stratified with bands of fine sandy loam, silty clay loam, and silty clay; massive; firm; few fine roots; many coarse prominent yellowish brown (10YR 5/4 and 5/8) masses of iron in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches

Depth to carbonates: More than 40 inches

Thickness of the solum: 36 to 60 inches

Ap and A horizons:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—2 or 3

Chroma—0 to 2

Texture—silty clay loam or silty clay

Bg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—4 to 6

Chroma—0 to 2

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

Cg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—4 to 6

Chroma—0 to 2

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

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

Setting

Landform: Lake plains

Position on landform: Toeslopes

Map Unit Composition

Milford and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more gravel in the lower part
- Soils that have less clay and more silt in the subsoil
- Soils that have no subsurface layer and are lighter colored in the upper part of the subsoil

Dissimilar soils:

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

Properties and Qualities of the Milford Soil

Parent material: Lacustrine deposits

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches:

Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.1 inches to a depth of 60 inches

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

Shrink-swell potential: High

Apparent seasonal high water table: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Milford—2w

Prime farmland status: Milford—prime farmland where drained

Hydric soil status: Milford—hydric

Millbrook Series

Drainage class: Somewhat poorly drained

Permeability: Moderate

Landform: Outwash plains and stream terraces

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

Slope range: 0 to 2 percent

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

Typical Pedon

Millbrook silt loam, 0 to 2 percent slopes; at an elevation of 595 feet; 2,440 feet south and 1,800 feet west of the northeast corner of sec. 31, T. 33 N., R. 10 E.; Will County, Illinois; USGS Symerton topographic quadrangle; lat. 41 degrees 17 minutes 56 seconds N. and long. 88 degrees 07 minutes 06 seconds W., NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

BE—7 to 11 inches; 55 percent brown (10YR 5/3) and 45 percent dark grayish brown (10YR 4/2) silty clay loam, light brownish gray (10YR 6/2) dry; weak very thin platy structure parting to weak fine granular; friable; common very fine and fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds and in pores; few fine

distinct dark gray (10YR 4/1) iron depletions in the matrix; neutral; clear smooth boundary.

- Bt1—11 to 24 inches; brown (10YR 5/3) silty clay loam; moderate medium and coarse prismatic structure parting to weak fine and medium subangular blocky; friable; common very fine and fine roots; many prominent dark gray (10YR 4/1) clay films on faces of peds and in pores; many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine prominent black (7.5YR 2.5/1) weakly cemented manganese oxide nodules throughout; common fine prominent strong brown (7.5YR 4/6) masses of iron in the matrix; neutral; gradual wavy boundary.
- 2Bt2—24 to 35 inches; yellowish brown (10YR 5/6) clay loam; weak medium and coarse prismatic structure parting to weak fine and medium subangular blocky; friable; common very fine roots; many prominent dark gray (10YR 4/1) clay films on faces of peds and in pores; common prominent very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common fine distinct yellowish brown (10YR 5/8) masses of iron in the matrix; common fine and medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; 1 percent gravel; slightly alkaline; gradual wavy boundary.
- 2Bt3—35 to 46 inches; yellowish brown (10YR 5/6) loam; weak medium and coarse subangular blocky structure; friable; common very fine roots; common prominent brown (10YR 4/3) clay films on faces of peds; common fine and medium faint brownish yellow (10YR 6/6) masses of iron in the matrix; common medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; slightly alkaline; clear wavy boundary.
- 2BC—46 to 53 inches; brownish yellow (10YR 6/6) loam; weak medium and coarse subangular blocky structure; very friable; common medium faint yellowish brown (10YR 5/6) masses of iron in the matrix; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 14 percent gravel; strongly effervescent; slightly alkaline; clear wavy boundary.
- 2C1—53 to 65 inches; 80 percent yellowish brown (10YR 5/4) and 20 percent dark grayish brown (10YR 4/2) sandy loam; massive; very friable; common medium and coarse distinct dark yellowish brown (10YR 4/6) and common coarse prominent yellowish brown (10YR 5/8) masses of iron in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

2C2—65 to 80 inches; brown (10YR 5/3), stratified sandy loam and loamy sand with thin lenses of coarse sand; massive; very friable; 9 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

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

Depth to carbonates: More than 40 inches

Thickness of the solum: 40 to 65 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam

E, EB or BE horizon:

Hue—10YR

Value—4 to 6

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 6

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 8

Texture—sandy loam, loam, silt loam, clay loam, or sandy clay loam

Content of gravel—less than 10 percent

2C horizon:

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 8

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

Content of gravel—less than 15 percent

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

Setting

Landform: Stream terraces and outwash plains

Position on landform: Footslopes and summits

Map Unit Composition

Millbrook and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more gravel in the lower part
- Soils that have a darker subsurface layer
- Soils that have outwash beginning at a depth of less than 24 inches
- Soils that have carbonates at a depth of less than 40 inches

Dissimilar soils:

- The well drained Camden soils on summits and backslopes
- The poorly drained Drummer 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 10.5 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

Depth to apparent seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Millbrook—1

Prime farmland status: Millbrook—prime farmland where drained

Hydric soil status: Millbrook—not hydric

Millington Series

Drainage class: Poorly drained

Permeability: Moderate

Landform: Flood plains

Parent material: Calcareous alluvium

Slope range: 0 to 2 percent

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

Typical Pedon

Millington silt loam, 0 to 2 percent slopes, occasionally flooded; at an elevation of 650 feet; 580 feet north and 509 feet east of the southwest corner of sec. 27, T. 39 N., R. 8 E.; Kane County, Illinois; USGS Aurora North topographic quadrangle; lat. 41 degrees 49 minutes 34 seconds N. and long. 88 degrees 19 minutes 12 seconds W., NAD 27:

A1—0 to 12 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; strongly effervescent; moderately alkaline; gradual wavy boundary.

A2—12 to 21 inches; very dark gray (10YR 3/1) silt loam that has 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 that has 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; 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 faint 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 faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg2—57 to 62 inches; dark gray (2.5Y 4/1) sandy loam; massive; friable; 14 percent gravel; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 40 inches

Depth to carbonates: Less than 10 inches

Thickness of the solum: 24 to 48 inches

Ap or A horizon:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3

Chroma—0 to 2

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

Bg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

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 neutral

Value—2 to 6

Chroma—0 to 2

Texture—loam, silt loam, sandy loam, or clay loam

Content of gravel—less than 15 percent

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

Minor Components

Similar soils:

- Soils that have less sand and more silt in the upper and middle parts of the subsoil
- Soils that have no subsurface layer
- Soils that have more gravel in the lower part

Dissimilar soils:

- Somewhat poorly drained soils on the slightly higher parts of the flood plains
- The well drained Du Page soils on toeslopes
- The poorly drained, noncalcareous Sawmill soils on toeslopes

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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: Frequent, Nov-Jun

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Millington—2w

Prime farmland status: Millington—prime farmland where drained and either protected from flooding or not frequently flooded during the growing season

Hydric soil status: Millington—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

Minor Components

Similar soils:

- Soils that have less sand and more silt in the upper and middle parts of the subsoil

- Soils that have no subsurface layer
- Soils that have more gravel in the lower part

Dissimilar soils:

- Somewhat poorly drained soils on the slightly higher parts of the flood plains
- The well drained Du Page soils on footslopes
- The poorly drained, noncalcareous Sawmill soils on toeslopes

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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: Occasional, Nov-Jun

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Millington—2w

Prime farmland status: Millington—prime farmland where drained

Hydric soil status: Millington—hydric

1082A—Millington silt loam, undrained, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Millington and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have less sand and more silt in the upper and middle parts of the subsoil
- Soils that have no subsurface layer

- Soils that have more gravel in the lower part

Dissimilar soils:

- Somewhat poorly drained soils on the slightly higher parts of the flood plains
- The well drained Du Page soils on toeslopes

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: Within a depth of 1.0 foot, Jun-Nov

Ponding: 0.5 foot above the surface during wet periods

Flooding: Frequent, Nov-Jun

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Millington—5w

Prime farmland status: Millington—not prime farmland

Hydric soil status: Millington—hydric

Millsdale Series

Drainage class: Very poorly drained

Permeability: Moderately slow

Landform: Stream terraces

Parent material: Drift over dolostone

Slope range: 0 to 2 percent

Taxonomic classification: Fine, mixed, active, mesic
Typic Argiaquolls

Typical Pedon

Millsdale silty clay loam, 0 to 2 percent slopes; at an elevation of 545 feet; 2,360 feet north and 2,440 feet west of the southeast corner of sec. 27, T. 35 N., R. 9 E.; Will County, Illinois; USGS Channahon topographic quadrangle; lat. 41 degrees 29 minutes 5 seconds N. and long. 88 degrees 11 minutes 11 seconds W., NAD 27:

A1—0 to 5 inches; black (N 2.5/0) silty clay loam, dark

- gray (N 4/0) dry; moderate fine and medium granular structure; friable; common very fine to medium roots; neutral; gradual wavy boundary.
- A2—5 to 10 inches; black (N 2.5/0) silty clay loam, dark gray (N 4/0) dry; weak medium subangular blocky structure; friable; common very fine to medium roots; neutral; gradual wavy boundary.
- A3—10 to 18 inches; very dark gray (N 3/0) silty clay loam, gray (N 5/0) dry; moderate medium subangular blocky structure; firm; common very fine roots; common fine prominent dark yellowish brown (10YR 4/4) masses of iron in the matrix; common medium prominent dark gray (2.5Y 4/1) iron depletions in the matrix; slightly alkaline; gradual wavy boundary.
- Btg1—18 to 25 inches; dark gray (2.5Y 4/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; common continuous prominent very dark gray (N 3/0) organo-clay films on faces of peds and in pores; common medium prominent dark yellowish brown (10YR 4/4) weakly cemented iron and manganese oxide nodules throughout; common fine prominent yellowish brown (10YR 5/4) masses of iron in the matrix; 1 percent gravel; slightly alkaline; gradual wavy boundary.
- Btg2—25 to 36 inches; gray (2.5Y 5/1) silty clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; firm; common very fine roots; few continuous prominent black (2.5Y 2.5/1) organo-clay films on surfaces along root channels; common medium prominent dark yellowish brown (10YR 4/4) weakly cemented iron and manganese oxide nodules throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 4 percent gravel; slightly alkaline; clear smooth boundary.
- 2R—36 inches; very pale brown (10YR 7/3), unweathered limestone bedrock; strongly effervescent.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 23 inches

Depth to lithic contact: 20 to 40 inches

Thickness of the solum: 20 to 40 inches

A horizon:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3

Chroma—0 to 2

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

Btg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—3 to 6

Chroma—0 to 4

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

Content of gravel—1 to 14 percent

317A—Millsdale silty clay loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces

Position on landform: Toeslopes

Map Unit Composition

Millsdale and similar soils: 94 percent

Dissimilar soils: 6 percent

Minor Components

Similar soils:

- Soils that have bedrock at depth of less than 20 inches or more than 40 inches
- Soils that have more sand and less clay in the subsoil

Dissimilar soils:

- The poorly drained, very deep Dunham soils on toeslopes
- The poorly drained, very shallow Romeo soils on toeslopes

Properties and Qualities of the Millsdale Soil

Parent material: Drift over dolostone

Drainage class: Very poorly drained

Slowest permeability within a depth of 40 inches: Slow

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

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

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

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

Shrink-swell potential: High

Perched seasonal high water table: Within a depth of 1.0 foot, Jan-Jun

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Millsdale—3w
Prime farmland status: Millsdale—prime farmland
 where drained
Hydric soil status: Millsdale—hydric

Mokena Series

Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part of the profile,
 very slow in the lower part
Landform: Ground moraines and lake plains
Parent material: Thin mantle of loess or other silty
 material and the underlying outwash and till or
 lacustrine deposits
Slope range: 0 to 4 percent
Taxonomic classification: Fine-loamy, mixed, active,
 mesic Aquic Argiudolls

Typical Pedon

Mokena silt loam, 0 to 2 percent slopes; at an elevation of 636 feet; 1,980 feet south and 194 feet east of the northwest corner of sec. 7, T. 29 N., R. 12 W.; Kankakee County, Illinois; USGS Kankakee topographic quadrangle; lat. 41 degrees 00 minutes 53 seconds N. and long. 87 degrees 46 minutes 15 seconds W., NAD 27:

Ap—0 to 5 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine and fine roots throughout; neutral; clear smooth boundary.

A—5 to 12 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak fine and medium granular; friable; common very fine and fine roots throughout; neutral; gradual wavy boundary.

AB—12 to 15 inches; 70 percent black (10YR 2/1) and 30 percent very dark grayish brown (10YR 3/2) loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure parting to weak fine and medium granular; friable; few very fine and fine roots throughout; neutral; gradual wavy boundary.

Bt1—15 to 20 inches; olive brown (2.5Y 4/3) loam; moderate medium subangular blocky structure; firm; few very fine and fine roots throughout; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common prominent black (10YR 2/1) organic coatings in root channels; common

fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; gradual wavy boundary.

Bt2—20 to 25 inches; light olive brown (2.5Y 5/3) loam; moderate medium subangular blocky structure; firm; few very fine roots throughout; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common prominent black (10YR 2/1) organic coatings in root channels; common medium black (N 2.5/0) manganese nodules throughout; common fine faint grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; gradual wavy boundary.

Bt3—25 to 32 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium prismatic structure; firm; few very fine roots throughout; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common medium black (N 2.5/0) manganese nodules throughout; many medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; slightly alkaline; gradual smooth boundary.

Bt4—32 to 38 inches; 50 percent yellowish brown (10YR 5/4) and 50 percent dark grayish brown (2.5Y 4/2) clay loam; weak medium and coarse angular blocky structure; firm; few very fine roots throughout; few fine distinct very dark grayish brown (10YR 3/2) organo-clay films on the faces of peds; common medium black (N 2.5/0) manganese nodules throughout; many medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; 1 percent gravel; slightly alkaline; clear smooth boundary.

2Bt5—38 to 42 inches; gray (5Y 5/1) silty clay; weak fine and medium subangular blocky structure; very firm; few very fine and fine roots throughout; few prominent dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium black (N 2.5/0) manganese nodules throughout; many medium prominent yellowish brown (10YR 5/4) masses of iron in the matrix; 1 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2Cd—42 to 60 inches; 80 percent gray (5Y 5/1) and 20 percent yellowish brown (10YR 5/4) silty clay; massive; very firm; few fine black (N 2.5/0) manganese nodules throughout; common medium light gray (2.5Y 7/1) carbonate concretions throughout; 2 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Depth to till or lacustrine deposits: 30 to 50 inches

Depth to carbonates: 30 to 50 inches

Thickness of the solum: 30 to 60 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or loam

Bt horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma—2 to 4

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

2Bt horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—0 to 2

Texture—silty clay or clay

Content of gravel—less than 7 percent

2Cd horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—0 to 4

Texture—silty clay or clay

Content of gravel—less than 10 percent

295A—Mokena silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and lake plains

Position on landform: Summits and footslopes

Map Unit Composition

Mokena and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

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

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Mokena Soil

Parent material: Thin mantle of loess or other silty

material and the underlying outwash and till or lacustrine deposits

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 30 to 60 inches

Available water capacity: About 7.3 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

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Mokena—2w

Prime farmland status: Mokena—prime farmland in all areas

Hydric soil status: Mokena—not hydric

295B—Mokena silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and lake plains

Position on landform: Backslopes and footslopes

Map Unit Composition

Mokena and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have less sand and more clay in the upper one-half of the profile
- Soils that are moderately eroded
- Soils with slopes of less than 2 percent or more than 4 percent

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Mokena Soil

Parent material: Thin mantle of loess or other silty

material and the underlying outwash and till or lacustrine deposits

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 30 to 60 inches

Available water capacity: About 7.1 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

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: High

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Mokena—2e

Prime farmland status: Mokena—prime farmland in all areas

Hydric soil status: Mokena—not hydric

Muskego Series

Drainage class: Very poorly drained

Permeability: Moderate in the upper part of the profile, slow in the lower part

Landform: Ground moraines and outwash plains

Parent material: Herbaceous organic material over coprogenous material

Slope range: 0 to 2 percent

Taxonomic classification: Coprogenous, euic, mesic
Limnic Haplosaprists

Typical Pedon

Muskego muck, in an area of Muskego and Houghton mucks, 0 to 2 percent slopes; at an elevation of 745 feet; 1,950 feet north and 255 feet west of the southeast corner of sec. 15, T. 39 N., R. 10 E.; Du Page County, Illinois; USGS Wheaton topographic quadrangle; lat. 41 degrees 51 minutes 49 seconds N. and long. 88 degrees 04 minutes 23 seconds W., NAD 27:

Oa1—0 to 5 inches; black (N 2.5/0) (broken face and rubbed) muck (sapric material), dark gray (N 4/0)

dry; less than 5 percent fiber rubbed; weak fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.

Oa2—5 to 11 inches; black (N 2.5/0) (broken face and rubbed) muck (sapric material); less than 5 percent fiber rubbed; moderate fine subangular blocky structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

Oa3—11 to 22 inches; black (N 2.5/0) (broken face and rubbed) muck (sapric material); less than 5 percent fiber rubbed; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; slightly acid; clear wavy boundary.

Oa4—22 to 36 inches; 60 percent black (N 2.5/0) and 40 percent dark brown (7.5YR 3/3) (broken face and rubbed) muck (sapric material); 10 percent fiber rubbed; weak thick platy structure; friable; common very fine roots; slightly acid; clear wavy boundary.

Lco1—36 to 47 inches; 90 percent very dark gray (5Y 3/1) and 10 percent dark brown (7.5YR 3/4) coprogenous earth; 5 percent fiber rubbed; very friable; massive; common very fine roots; neutral; gradual wavy boundary.

Lco2—47 to 60 inches; very dark gray (5Y 3/1) coprogenous earth; 5 percent fiber rubbed; very friable; massive; common very fine roots; 4 percent snail shells; neutral.

Range in Characteristics

Depth to coprogenous deposits: 16 to 51 inches

Surface tier:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3

Chroma—0 or 1

Subsurface tier:

Hue—7.5YR, 10YR, or neutral

Value—2 or 3

Chroma—0 to 3

Lco horizon:

Hue—10YR, 2.5Y, or 5Y

Value—2 to 4

Chroma—1 to 3

903A—Muskego and Houghton mucks, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines

Position on landform: Toeslopes

Map Unit Composition

Muskego and Houghton soils and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils with a surface layer that contains less organic matter
- Soils in which the organic deposits are less than 51 inches thick

Dissimilar soils:

- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Muskego Soil

Parent material: Herbaceous organic material over coprogenous material

Drainage class: Very poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 19.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 60.0 to 90.0 percent

Shrink-swell potential: Moderate

Apparent seasonal high water table: Within a depth of 1.0 foot, Nov-Jun

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

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: Within a depth of 1.0 foot, Nov-Jun

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Muskego—4w; Houghton—3w

Prime farmland status: Muskego and Houghton—not prime farmland

Hydric soil status: Muskego and Houghton—hydric

1903A—Muskego and Houghton mucks, undrained, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains

Position on landform: Toeslopes

Map Unit Composition

Muskego and Houghton soils and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils with a surface layer that contains less organic matter
- Soils in which the organic deposits are less than 51 inches thick

Dissimilar soils:

- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Muskego Soil

Parent material: Herbaceous organic material over coprogenous material

Drainage class: Very poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 19.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 60.0 to 90.0 percent

Shrink-swell potential: Moderate

Apparent seasonal high water table: Within a depth of 0.5 foot all year

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None
Potential for frost action: High
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: High

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: Within a depth of 0.5 foot all year
Ponding: 0.5 foot above the surface during wet periods
Flooding: None
Accelerated erosion: None
Potential for frost action: High
Corrosivity: High for steel and concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Muskego—6w;
 Houghton—5w
Prime farmland status: Muskego and Houghton—not prime farmland
Hydric soil status: Muskego and Houghton—hydric

Nappanee Series

Drainage class: Somewhat poorly drained
Permeability: Very slow
Landform: End moraines and ground moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 2 to 6 percent
Taxonomic classification: Fine, illitic, mesic Aeric Epiaqualfs

Typical Pedon

Nappanee silt loam, 2 to 4 percent slopes; at an elevation of 665 feet; 1,220 feet south and 500 feet east of the northwest corner of sec. 10, T. 44 N., R. 11 E.; Lake County, Illinois; USGS Libertyville topographic

quadrangle; lat. 42 degrees 18 minutes 34 seconds N. and long. 87 degrees 56 minutes 33 seconds W., NAD 27:

- A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 6/1) dry; weak very fine and fine granular structure; friable; many very fine and fine roots; neutral; abrupt smooth boundary.
- E—4 to 9 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak thick platy structure; friable; many very fine and fine roots; neutral; clear smooth boundary.
- Bt1—9 to 19 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine and medium subangular blocky structure; firm; common very fine roots; common prominent very dark gray (10YR 3/1) organic coatings on faces of peds and in pores; common fine and medium prominent dark yellowish brown (10YR 4/6) weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) strongly cemented manganese oxide nodules throughout; 1 percent gravel; slightly alkaline; clear smooth boundary.
- Bt2—19 to 23 inches; brown (10YR 4/3) silty clay; moderate medium subangular blocky structure; firm; common very fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; common medium prominent strong brown (7.5YR 5/6) masses of iron in the matrix; common fine distinct gray (10YR 5/1) iron depletions in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
- Bt3—23 to 28 inches; brown (10YR 5/3) silty clay; weak medium prismatic structure parting to moderate medium subangular blocky; very firm; common very fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on all faces of peds; common medium prominent strong brown (7.5YR 5/6) masses of iron in the matrix; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; slightly effervescent; moderately alkaline; gradual smooth boundary.
- Btk1—28 to 36 inches; brown (10YR 5/3) silty clay; weak medium prismatic structure parting to weak medium subangular blocky; very firm; common very fine roots; common distinct dark grayish brown (2.5Y 4/2) and grayish brown (2.5Y 5/2) clay films on faces of peds and in pores; common distinct dark brown (7.5YR 3/2) organo-clay films on surfaces along pores; many fine and medium pale yellow (2.5Y 8/2) carbonate concretions throughout; common medium and coarse prominent strong brown (7.5YR 5/6) and common

medium and coarse faint yellowish brown (10YR 5/4) masses of iron in the matrix; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; 2 percent gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.

Btk2—36 to 46 inches; yellowish brown (10YR 5/4) silty clay; weak medium prismatic structure parting to weak coarse subangular blocky; very firm; common very fine roots; common prominent pale yellow (2.5Y 8/2) carbonate coatings on horizontal faces of peds; many prominent dark gray (2.5Y 4/1) and gray (2.5Y 5/1) clay films on all faces of peds; common continuous prominent dark brown (7.5YR 3/2) organo-clay films on surfaces along pores; common fine and medium prominent strong brown (7.5YR 5/8) weakly cemented iron oxide concretions throughout; few fine black (7.5YR 2.5/1) strongly cemented manganese oxide concretions throughout; common fine and medium pale yellow (2.5Y 8/2) carbonate concretions throughout; common fine and medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; 2 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cd—46 to 60 inches; yellowish brown (10YR 5/4) silty clay loam; massive; very firm; common medium distinct strong brown (7.5YR 5/6) masses of iron in the matrix; few fine black (7.5YR 2.5/1) strongly cemented manganese oxide concretions throughout; common medium pale yellow (2.5Y 8/2) carbonate concretions throughout; 2 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

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

Depth to carbonates: 18 to 40 inches

Thickness of the solum: 24 to more than 60 inches

A or Ap horizon:

Hue—10YR

Value—3 to 5

Chroma—1 to 3

Texture—silt loam or silty clay loam

E horizon:

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—silt loam

Bt and Btk horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay, clay, or silty clay loam

Content of gravel—less than 5 percent

Cd horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

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

Content of gravel—less than 5 percent

228B—Nappanee silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines

Position on landform: Backslopes and footslopes

Map Unit Composition

Nappanee and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have less clay in the subsoil
- Soils with slopes of less than 2 percent
- Soils that are moderately eroded

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Nappanee 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: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 24 to 60 inches

Available water capacity: About 6.0 inches to a depth of 60 inches

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

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Nappanee—3e
Prime farmland status: Nappanee—prime farmland in all areas
Hydric soil status: Nappanee—not hydric

228C2—Nappanee silty clay loam, 4 to 6 percent slopes, eroded

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have less clay in the subsoil
- Soils with slopes of less than 4 percent or more than 6 percent
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that are severely eroded

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Nappanee 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: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 24 to 60 inches

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

Content of organic matter in the surface layer: 1.0 to 2.5 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

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

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Nappanee—3e
Prime farmland status: Nappanee—not prime farmland
Hydric soil status: Nappanee—not hydric

Oakville Series

Drainage class: Excessively drained
Permeability: Rapid
Landform: Outwash plains
Parent material: Eolian deposits
Slope range: 1 to 30 percent
Taxonomic classification: Mixed, mesic Typic Udipsamments

Typical Pedon

Oakville fine sand, 1 to 6 percent slopes; at an elevation of 660 feet; 1,840 feet south and 40 feet east of the northwest corner of sec. 24, T. 30 N., R. 12 W.; Kankakee County, Illinois; USGS St. Anne topographic quadrangle; lat. 41 degrees 04 minutes 27 seconds N. and long. 87 degrees 40 minutes 30 seconds W., NAD 27:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) fine sand, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; common fine and very fine roots; very strongly acid; clear smooth boundary.

BE—3 to 7 inches; brown (10YR 4/3) fine sand; weak fine granular structure; very friable; common fine roots; very strongly acid; clear smooth boundary.

Bw—7 to 40 inches; yellowish brown (10YR 5/6) fine sand; weak medium and coarse subangular blocky structure; very friable; few fine and very fine roots; very strongly acid; clear smooth boundary.

C—40 to 65 inches; 60 percent light yellowish brown (10YR 6/4) and 40 percent very pale brown (10YR 7/4) fine sand; single grain; loose; strongly acid.

Range in Characteristics

Thickness of the solum: 18 to 65 inches

A or Ap horizon:

Hue—10YR

Value—2 to 4

Chroma—1 to 4

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

BE horizon:

Hue—7.5YR or 10YR
 Value—4
 Chroma—3 or 4
 Texture—fine sand, sand, loamy fine sand, or loamy sand

Bw horizon:

Hue—7.5YR or 10YR
 Value—4 to 6
 Chroma—3 to 8
 Texture—fine sand or loamy fine sand

C horizon:

Hue—10YR or 2.5Y
 Value—4 to 7
 Chroma—1 to 6
 Texture—fine sand, loamy fine sand, sand, or loamy sand

741B—Oakville fine sand, 1 to 6 percent slopes**Setting**

Landform: Outwash plains

Position on landform: Summits and backslopes

Map Unit Composition

Oakville and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components*Similar soils:*

- Soils with a thicker dark surface layer
- Soils that have more clay and less sand in the upper part
- Soils with slopes of less than 1 percent or more than 6 percent
- Soils that have more rock fragments throughout

Dissimilar soils:

- The somewhat poorly drained Watseka soils on summits and footslopes
- The poorly drained Granby soils on toeslopes

Properties and Qualities of the Oakville Soil

Parent material: Eolian deposits

Drainage class: Excessively 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 4.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Low

Corrosivity: Low for steel and high for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Oakville—4s

Prime farmland status: Oakville—not prime farmland

Hydric soil status: Oakville—not hydric

741D—Oakville fine sand, 6 to 12 percent slopes**Setting**

Landform: Outwash plains

Position on landform: Backslopes

Map Unit Composition

Oakville and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components*Similar soils:*

- Soils that have more clay and less sand in the upper part
- Soils with slopes of less than 6 percent or more than 12 percent
- Soils that have more rock fragments throughout
- Soils that are moderately eroded

Dissimilar soils:

- The somewhat poorly drained Watseka soils on summits and footslopes

Properties and Qualities of the Oakville Soil

Parent material: Eolian deposits

Drainage class: Excessively 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 4.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Low

Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Low
Corrosivity: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Oakville—6s
Prime farmland status: Oakville—not prime farmland
Hydric soil status: Oakville—not hydric

741E—Oakville fine sand, 12 to 20 percent slopes

Setting

Landform: Outwash plains
Position on landform: Backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils with slopes of less than 12 percent or more than 20 percent
- Soils that have more clay and less sand in the upper part
- Soils that are moderately eroded

Dissimilar soils:

- The somewhat poorly drained Watseka soils on summits and footslopes

Properties and Qualities of the Oakville Soil

Parent material: Eolian deposits
Drainage class: Excessively 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 4.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: Slight

Potential for frost action: Low
Corrosivity: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Oakville—6s
Prime farmland status: Oakville—not prime farmland
Hydric soil status: Oakville—not hydric

741F—Oakville fine sand, 20 to 30 percent slopes

Setting

Landform: Outwash plains
Position on landform: Backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils with slopes of less than 20 percent
- Soils with more clay and less sand in the upper part
- Soils that are moderately eroded

Dissimilar soils:

- The somewhat poorly drained Watseka soils on summits and footslopes

Properties and Qualities of the Oakville Soil

Parent material: Eolian deposits
Drainage class: Excessively 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 4.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Low
Corrosivity: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: Oakville—7s

Prime farmland status: Oakville—not prime farmland

Hydric soil status: Oakville—not hydric

Ockley Series

Drainage class: Well drained

Permeability: Moderate in the upper part of the profile, very rapid in the lower part

Landform: Outwash plains and stream terraces

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

Slope range: 2 to 4 percent

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

Typical Pedon

Ockley silt loam, 2 to 4 percent slopes; at an elevation of 704 feet; 1,220 feet south and 160 feet east of the northwest corner of sec. 27, T. 22 N., R. 14 W.; Vermilion County, Illinois; USGS Penfield topographic quadrangle; lat. 40 degrees 20 minutes 18 seconds N. and long. 87 degrees 55 minutes 45 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; moderately acid; clear smooth boundary.

BE—9 to 15 inches; brown (10YR 4/3) loam; moderate very fine subangular blocky structure; friable; many faint dark grayish brown (10YR 4/2) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt1—15 to 26 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common faint brown (10YR 4/3 and 7.5YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—26 to 41 inches; yellowish brown (10YR 5/4) clay loam; moderate medium subangular blocky structure; friable; few faint dark brown (7.5YR 3/2) organo-clay films lining pores; common faint brown (10YR 4/3) clay films on faces of peds; 5 percent gravel; moderately acid; clear smooth boundary.

2Bt3—41 to 51 inches; dark yellowish brown (10YR 4/4) gravelly clay loam; moderate medium subangular blocky structure; friable; common faint brown (10YR 4/3) clay films on faces of peds; 20 percent gravel; moderately acid; clear smooth boundary.

2BC—51 to 58 inches; dark yellowish brown (10YR

4/4) gravelly clay loam; weak coarse subangular blocky structure; friable; 20 percent gravel; neutral; clear smooth boundary.

3C—58 to 70 inches; light yellowish brown (10YR 6/4), stratified sand and very gravelly sand; single grain; loose; 15 percent fine gravel, 35 percent medium and coarse gravel, and 2 percent cobbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to sandy and gravelly glaciofluvial deposits: 40 to 60 inches

Thickness of the solum: 40 to 65 inches

Ap or A horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—loam, sandy loam, or clay loam

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Texture—loam, clay loam, or sandy clay loam

Content of gravel—less than 10 percent

2Bt and 2BC horizons:

Hue—5YR, 7.5YR, or 10YR

Value—3 or 4

Chroma—2 to 6

Texture—sandy clay loam, sandy loam, coarse sandy loam, or the gravelly or very gravelly analogs of those textures; also, clay loam or gravelly clay loam

Content of gravel—10 to 45 percent

3C horizon:

Hue—10YR

Value—4 to 6

Chroma—3 or 4

Texture—stratified loamy coarse sand, coarse sand, loamy sand, sand, or the gravelly, very gravelly, or extremely gravelly analogs of those textures

Content of gravel—30 to 70 percent

387B—Ockley loam, 2 to 4 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Summits and backslopes

Map Unit Composition

Ockley and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have slopes of less than 2 percent or more than 4 percent
- 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 at a depth of less than 6 feet

Dissimilar soils:

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

Properties and Qualities of the Ockley 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 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

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and high for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ockley—2e

Prime farmland status: Ockley—prime farmland in all areas

Hydric soil status: Ockley—not hydric

Onarga Series

Drainage class: Well drained

Permeability: Moderate in the upper part of the profile, rapid in the lower part

Landform: Stream terraces and outwash plains

Parent material: Eolian deposits and/or outwash

Slope range: 2 to 10 percent

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

Taxadjunct Feature

Onarga fine sandy loam, 5 to 10 percent slopes, eroded, has a mollic epipedon that is less than 10 inches thick. It is a coarse-loamy, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Onarga fine sandy loam, 2 to 5 percent slopes; at an elevation of 666 feet; 2,032 feet south and 33 feet west of the northeast corner of sec. 17, T. 26 N., R. 10 E.; Iroquois County, Illinois; USGS Onarga West topographic quadrangle; lat. 40 degrees 43 minutes 45 seconds N. and long. 88 degrees 05 minutes 12 seconds W., NAD 27:

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

A—8 to 13 inches; very dark grayish brown (10YR 3/2) fine sandy loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; very friable; many fine roots; moderately acid; clear smooth boundary.

Bt1—13 to 23 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine prismatic structure parting to weak fine subangular blocky; friable; common fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; strongly acid; clear wavy boundary.

Bt2—23 to 29 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium prismatic structure parting to weak fine subangular blocky; very friable; few fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; very strongly acid; gradual smooth boundary.

BC—29 to 33 inches; brownish yellow (10YR 6/6) loamy fine sand; weak medium subangular blocky structure; very friable; few fine roots; strongly acid; clear wavy boundary.

C—33 to 60 inches; yellowish brown (10YR 5/6) and light yellowish brown (10YR 6/4), stratified loamy fine sand and fine sand; single grain; loose; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Thickness of the solum: 27 to 50 inches

Ap and A horizons:

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—4 or 5
 Chroma—3 to 6
 Texture—fine sandy loam, loam, or sandy loam

C horizon:

Hue—7.5YR or 10YR
 Value—4 to 6
 Chroma—4 to 6
 Texture—stratified loamy fine sand, fine sand, fine sandy loam, loamy sand, sand, or sandy loam

150B—Onarga fine sandy loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on landform: Summits and backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have slopes of less than 2 percent
- Soils that are moderately eroded
- Soils that have less clay in the subsoil
- Soils that have gravel in the lower part
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:

- The somewhat poorly drained Ridgeville soils on summits and footslopes
- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Onarga Soil

Parent material: Eolian deposits and/or outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low

Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Onarga—2e
Prime farmland status: Onarga—prime farmland in all areas
Hydric soil status: Onarga—not hydric

150C2—Onarga fine sandy loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on landform: Backslopes and shoulders

Map Unit Composition

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

Minor Components

Similar soils:

- Soils with slopes of less than 5 percent
- Soils with less clay in the subsoil
- Soils with gravel in the lower part
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:

- The somewhat poorly drained Ridgeville soils on summits and footslopes
- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Onarga Soil

Parent material: Eolian deposits and/or outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None

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

Potential for frost action: Moderate

Corrosivity: Low for steel and high for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Onarga—3e

Prime farmland status: Onarga—prime farmland in all areas

Hydric soil status: Onarga—not hydric

805B—Orthents, clayey, undulating

These soils are in areas of disturbed soil material. They are fine, mixed, active, nonacid, mesic Aquic Udorthents. The surface layer is very dark gray, firm silty clay about 6 inches thick. The upper part of the underlying material is brown and yellowish brown, firm silty clay. The lower part to a depth of 60 inches is mottled olive brown, light olive brown, and grayish brown, firm silty clay and silty clay loam.

Setting

Landform: Lake plains, ground moraines, and leveled land

Position on landform: Summits and backslopes

Slope range: 1 to 6 percent

Map Unit Composition

Orthents, clayey, and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have more sand and less clay
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have carbonates at or near the surface

Dissimilar soils:

- The poorly drained Ashkum soils on toeslopes
- The very poorly drained Houghton and Peotone soils on toeslopes

Properties and Qualities of the Orthents

Parent material: Earthy fill

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Very slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 4.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: High

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Very high

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Orthents, clayey—3e

Prime farmland status: Orthents, clayey—not prime farmland

Hydric soil status: Orthents, clayey—not hydric

802B—Orthents, loamy, undulating

These soils are in areas of disturbed soil material. They are 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 silty clay loam. The lower part to a depth of 60 inches is mottled yellowish brown and brown, firm loam.

Setting

Landform: Outwash plains, ground moraines and leveled land

Position on landform: Summits and backslopes

Slope range: 1 to 6 percent

Map Unit Composition

Orthents, loamy, and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have more silt and less sand
- Soils that have more gravel in the lower one-half of the profile
- Soils that have a seasonal high water table at a depth of less than 3.5 feet
- Soils that have carbonates at or near the surface

Dissimilar soils:

- The poorly drained Drummer 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 9.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 3.5 to 5.0 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Orthents, loamy—2e

Prime farmland status: Orthents, loamy—not prime farmland

Hydric soil status: Orthents, loamy—not hydric

802D—Orthents, loamy, rolling

These soils are in areas of disturbed soil material. They are 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 silty clay loam. The lower part to a depth of 60 inches is mottled yellowish brown and brown, firm loam.

Setting

Landform: Ground moraines and outwash plains

Position on landform: Backslopes

Slope range: 6 to 12 percent

Map Unit Composition

Orthents, loamy, and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have slopes of less than 6 percent

- Soils that have more gravel in the lower one-half of the profile
- Soils that have a seasonal high water table at a depth of less than 3.5 feet
- Soils that have carbonates at or near the surface

Dissimilar soils:

- The poorly drained Drummer 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 9.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 3.5 to 5.0 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Orthents, loamy—3e

Prime farmland status: Orthents, loamy—not prime farmland

Hydric soil status: Orthents, loamy—not hydric

Ozaukee Series

Drainage class: Moderately well drained

Permeability: Slow

Landform: Ground moraines and end moraines

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

Slope range: 2 to 30 percent

Taxonomic classification: Fine, illitic, mesic Oxyaquic Hapludalfs

Typical Pedon

Ozaukee silt loam, 2 to 4 percent slopes; at an elevation of 780 feet; 2,540 feet north and 2,200 feet east of the southwest corner of sec. 31, T. 39 N., R. 10

E.; Du Page County, Illinois; USGS Naperville topographic quadrangle; lat. 41 degrees 49 minutes 14 seconds N. and long. 88 degrees 08 minutes 18 seconds W., NAD 27:

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine granular structure; friable; many very fine and fine roots; neutral; clear smooth boundary.

BE—4 to 10 inches; brown (10YR 4/3) silt loam; weak thick platy structure parting to moderate fine subangular blocky; friable; many very fine roots; few distinct dark grayish brown (10YR 4/2) coatings on faces of peds; moderately acid; clear smooth boundary.

2Bt1—10 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many distinct brown (10YR 4/3) clay films on faces of peds; 1 percent gravel; slightly acid; abrupt smooth boundary.

2Bt2—16 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films and brown (10YR 4/3) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; 5 percent gravel; neutral; clear smooth boundary.

2Bt3—21 to 27 inches; light olive brown (2.5Y 5/3) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Bt4—27 to 33 inches; light olive brown (2.5Y 5/3) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; few distinct very dark

grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concentrations throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 8 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.

2BCt—33 to 39 inches; light olive brown (2.5Y 5/3) silty clay loam; weak fine and medium subangular blocky structure; firm; common very fine roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concentrations throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 6 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2Cd—39 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; few very fine roots; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium white (10YR 8/1) carbonate concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 6 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 18 inches

Depth to carbonates: 15 to 40 inches

Thickness of the solum: 20 to 40 inches

Ap or A horizon:

Hue—10YR

Value—3 or 4

Chroma—1 to 3

Texture—silt loam

E horizon (where present):

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

2Bt horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silty clay

Content of gravel—1 to 10 percent

2Cd horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—silty clay loam or clay loam

Content of gravel—3 to 15 percent

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

Setting

Landform: End moraines and ground moraines

Position on landform: Backslopes and summits

Map Unit Composition

Ozaukee and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that are moderately eroded
- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have more sand and less silt in the lower part

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Ozaukee 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 (dense material): 20 to 45 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 3.0 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ozaukee—2e

Prime farmland status: Ozaukee—prime farmland in all areas

Hydric soil status: Ozaukee—not hydric

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

Setting

Landform: Ground moraines and end moraines

Position on landform: Backslopes and shoulders

Map Unit Composition

Ozaukee and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have more sand and less silt in the lower part
- Soils that are severely eroded

Dissimilar soils:

- The nearly level, somewhat poorly drained Blount soils on summits and footslopes
- The calcareous, moderately well drained Chatsworth soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Ozaukee 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 (dense material): 20 to 45 inches
Available water capacity: About 7.2 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
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Corrosivity: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ozaukee—2e
Prime farmland status: Ozaukee—prime farmland in all areas
Hydric soil status: Ozaukee—not hydric

530C3—Ozaukee silty clay loam, 4 to 6 percent slopes, severely eroded

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that are moderately eroded
- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have more sand and less silt in the lower part

Dissimilar soils:

- The calcareous, moderately well drained Chatsworth soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Ozaukee 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 (dense material): 20 to 45 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 1.0 percent
Shrink-swell potential: Moderate
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Corrosivity: High for steel and low for concrete
Surface runoff class: Very high
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Ozaukee—3e
Prime farmland status: Ozaukee—not prime farmland
Hydric soil status: Ozaukee—not hydric

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

Setting

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

Map Unit Composition

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

Minor Components

Similar soils:

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

Dissimilar soils:

- The calcareous, moderately well drained Chatsworth soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Ozaukee 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 (dense material): 20 to 45 inches

Available water capacity: About 7.2 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

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ozaukee—3e

Prime farmland status: Ozaukee—not prime farmland

Hydric soil status: Ozaukee—not hydric

530D3—Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded**Setting**

Landform: Ground moraines and end moraines

Position on landform: Backslopes

Map Unit Composition

Ozaukee and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components*Similar soils:*

- Soils that are moderately eroded
- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet

- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that have more sand and less silt in the lower part

Dissimilar soils:

- The calcareous, moderately well drained Chatsworth soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Ozaukee 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 (dense material): 20 to 45 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 1.0 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: Very high

Susceptibility to water erosion: High

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Ozaukee—4e

Prime farmland status: Ozaukee—not prime farmland

Hydric soil status: Ozaukee—not hydric

530E2—Ozaukee silt loam, 12 to 20 percent slopes, eroded**Setting**

Landform: End moraines and ground moraines

Position on landform: Backslopes

Map Unit Composition

Ozaukee and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components*Similar soils:*

- Soils that are severely eroded

- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have more sand and less silt in the lower part

Dissimilar soils:

- The calcareous, moderately well drained Chatsworth soils on backslopes

Properties and Qualities of the Ozaukee 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 (dense material): 20 to 45 inches

Available water capacity: About 7.4 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

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ozaukee—4e

Prime farmland status: Ozaukee—not prime farmland

Hydric soil status: Ozaukee—not hydric

530F—Ozaukee silt loam, 20 to 30 percent slopes**Setting**

Landform: Ground moraines and end moraines

Position on landform: Backslopes

Map Unit Composition

Ozaukee and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components*Similar soils:*

- Soils that are moderately eroded or severely eroded
- Soils with slopes of less than 20 percent or more than 30 percent
- Soils that have more sand and less clay in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet

Dissimilar soils:

- The calcareous, moderately well drained Chatsworth soils on backslopes

Properties and Qualities of the Ozaukee 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 (dense material): 20 to 45 inches

Available water capacity: About 7.7 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

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and low for concrete

Surface runoff class: Very high

Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ozaukee—6e

Prime farmland status: Ozaukee—not prime farmland

Hydric soil status: Ozaukee—not hydric

Pella Series

Drainage class: Poorly drained

Permeability: Moderate

Landform: Outwash plains and ground moraines

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

Slope range: 0 to 2 percent

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

Typical Pedon

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 25 seconds N. and long. 88 degrees 09 minutes 14 seconds W., NAD 27:

Ap—0 to 7 inches; black (N 2.5/0) silty clay loam, dark gray (N 4/0) dry; moderate very fine and fine granular structures; friable; slightly acid; abrupt smooth boundary.

A—7 to 12 inches; black (N 2.5/0) silty clay loam, dark gray (N 4/0) 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; 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 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 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 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 in the matrix; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 22 inches

Thickness of the loess or other silty material: 20 to 40 inches

Depth to carbonates: 16 to 40 inches

Thickness of the solum: 30 to 50 inches

Ap and A horizons:

Hue—10YR, 2.5Y, or neutral

Value—2 or 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

Content of gravel—1 to 10 percent

2Bg or 2BCg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—5 or 6

Chroma—1 to 6

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

2Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—5 or 6

Chroma—1 to 8

Texture—silt loam, loam, sandy loam, or clay loam

Content of gravel—less than 15 percent

153A—Pella silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains

Position on landform: Toeslopes

Map Unit Composition

Pella and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have outwash beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have more gravel in the lower part
- Soils that have till in the lower part
- Soils that have a thicker surface layer and are darker in the upper part of the subsoil

Dissimilar soils:

- The somewhat poorly drained Brenton soils on summits and footslopes

- The poorly drained, calcareous Harpster 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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Pella—2w

Prime farmland status: Pella—prime farmland where drained

Hydric soil status: Pella—hydric

Peotone Series

Drainage class: Very poorly drained

Permeability: Moderately slow

Landform: Ground moraines

Parent material: Colluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine, smectitic, mesic
Cumulic Vertic Endoaquolls

Typical Pedon

Peotone silty clay loam, 0 to 2 percent slopes; at an elevation of 707 feet; 315 feet south and 2,233 feet east of the northwest corner of sec. 21, T. 29 N., R. 9 E.; Ford County, Illinois; USGS Cabery topographic quadrangle; lat. 40 degrees 58 minutes 49 seconds N. and long. 88 degrees 12 minutes 00 seconds W., NAD 27:

Ap—0 to 7 inches; black (N 2.5/0) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

A—7 to 13 inches; black (N 2.5/0) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

Bg1—13 to 27 inches; black (N 2.5/0) silty clay loam, dark gray (10YR 4/1) dry; moderate medium angular blocky structure; friable; common very fine roots; neutral; clear smooth boundary.

Bg2—27 to 41 inches; dark gray (10YR 4/1) silty clay; moderate fine prismatic structure; firm; common very fine roots; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.

Bg3—41 to 50 inches; dark gray (10YR 4/1) silty clay; moderate medium prismatic structure; firm; few very fine roots; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.

Cg—50 to 60 inches; dark gray (10YR 4/1) silty clay loam; massive; firm; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Depth to carbonates: More than 28 inches

Thickness of the solum: 38 to 60 inches

Ap and A horizons:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—2 or 3

Chroma—0 or 1

Texture—silty clay loam

Bg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—2 to 6

Chroma—0 to 2

Texture—silty clay loam or silty clay

Cg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—4 to 6

Chroma—0 to 2

Texture—silty clay loam or silt loam

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

Setting

Landform: Ground moraines

Position on landform: Toeslopes

Map Unit Composition

Peotone and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are overlain by light colored recent deposits
- Soils that have less clay in the subsurface layer and subsoil
- Soils that are lighter colored in the upper one-half of the subsoil

Dissimilar soils:

- The somewhat poorly drained Elliott soils on summits and footslopes
- The very poorly drained, organic Houghton soils on toeslopes

Properties and Qualities of the Peotone Soil

Parent material: Colluvium

Drainage class: Very poorly drained

Slowest permeability within a depth of 40 inches:
Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.3 inches to a depth of 60 inches

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

Shrink-swell potential: High

Apparent seasonal high water table: Within a depth of 1.0 foot, Jan-Jun

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Peotone—2w

Prime farmland status: Peotone—prime farmland where drained

Hydric soil status: Peotone—hydric

865—Pits, gravel

This map unit is in nearly level to gently sloping areas from which gravel has been extracted (fig. 4). 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

Minor Components

Dissimilar components:

- Well drained, loamy Orthents on summits and backslopes
- The poorly drained Drummer soils on toeslopes

Interpretive Groups

Land capability classification: Pits, gravel—none assigned

Prime farmland status: Pits, gravel—not prime farmland

Hydric soil status: Pits, gravel—unranked

864—Pits, quarry

This map unit is in nearly level to gently sloping areas from which limestone has been extracted. The pits have nearly vertical sidewalls. Some pits are active, and others have been abandoned. Some contain water. Some of the larger abandoned pits are used as recreational areas.

Map Unit Composition

Pits, quarry: 92 percent

Dissimilar components: 8 percent

Minor Components

Dissimilar components:

- Well drained, loamy Orthents on summits and backslopes
- The poorly drained Romeo soils on toeslopes

Interpretive Groups

Land capability classification: Pits, quarry—none assigned

Prime farmland status: Pits, quarry—not prime farmland

Hydric soil status: Pits, quarry—unranked



Figure 4.—An area along the East Branch of the DuPage River where gravel and dolomite are mined.

Plattville Series

Drainage class: Well drained

Permeability: Moderate

Landform: Stream terraces

Parent material: Drift over dolostone

Slope range: 4 to 6 percent

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

Taxadjunct Feature

Plattville silt loam, 4 to 6 percent slopes, eroded, has a mollic epipedon that is less than 10 inches thick. It is a fine-loamy, mixed, active, mesic Mollic Hapludalf.

Typical Pedon

Plattville silt loam, 4 to 6 percent slopes, eroded; at an elevation of 550 feet; 1,100 feet north and 100 feet east of the southwest corner of sec. 26, T. 33 N., R. 9 E.; Will County, Illinois; USGS Channahon topographic quadrangle; lat. 41 degrees 29 minutes 03 seconds N.

and long. 88 degrees 10 minutes 38 seconds W., NAD 27:

Ap—0 to 9 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak medium granular structure; friable; many very fine to medium roots; neutral; gradual wavy boundary.

Bt1—9 to 12 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure parting to weak fine and medium granular; friable; many very fine to medium roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; neutral; gradual wavy boundary.

Bt2—12 to 19 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; many very fine to medium roots; few distinct dark brown (10YR 3/3) organo-clay films on faces of peds and in pores; 1 percent gravel; slightly alkaline; gradual wavy boundary.

Bt3—19 to 26 inches; dark yellowish brown (10YR 4/4) loam; moderate medium subangular blocky structure; friable; common very fine and fine roots;

few distinct dark brown (10YR 3/3) organo-clay films on surfaces along pores; common fine distinct brownish yellow (10YR 6/6) weakly cemented iron oxide concretions throughout; 2 percent gravel; slightly alkaline; clear wavy boundary.

Bt4—26 to 30 inches; yellowish brown (10YR 5/4) loam; weak fine and medium subangular blocky structure; very friable; common very fine and fine roots; few prominent black (10YR 2/1) organo-clay films on surfaces along pores; common medium distinct olive yellow (2.5Y 6/6) weakly cemented iron oxide concretions throughout; 5 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

Bt5—30 to 35 inches; light olive brown (10YR 5/4) loam; weak fine subangular blocky structure; very friable; common very fine and fine roots at the top of the horizon; few prominent very dark brown (10YR 2/2) organo-clay films on faces of peds and in pores; common medium prominent olive yellow (2.5Y 6/6) weakly cemented iron oxide concretions throughout; common fine distinct black (10YR 2/1) strongly cemented manganese oxide concretions throughout; 10 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

BC—35 to 42 inches; 70 percent light yellowish brown (10YR 6/4) and 30 percent light greenish gray (5GY 8/1) loam; weak medium and coarse subangular blocky structure; friable; common fine prominent black (10YR 2/1) strongly cemented manganese oxide concretions throughout; 3 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2R—42 inches; very pale brown (10YR 7/4), unweathered limestone bedrock; strongly effervescent.

Range in Characteristics

Thickness of the solum: 40 to 60 inches

Depth to lithic contact: 40 to 60 inches

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam or loam

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

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

Content of gravel—less than 7 percent

BC horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 or 4

Texture—loam, clay loam, or silty clay loam

240C2—Plattville silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Stream terraces

Position on landform: Backslopes

Map Unit Composition

Plattville and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have more clay in the subsoil
- Soils that are severely eroded

Dissimilar soils:

- The shallow, well drained Channahon soils on shoulders and backslopes

Properties and Qualities of the Plattville Soil

Parent material: Drift over dolostone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches:

Moderate

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

Depth to restrictive feature (lithic bedrock): 40 to 60 inches

Available water capacity: About 7.2 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

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Plattville—3e

Prime farmland status: Plattville—prime farmland in all areas

Hydric soil status: Plattville—not hydric

Rantoul Series

Drainage class: Very poorly drained

Permeability: Very slow

Landform: Ground moraines and lake plains

Parent material: Colluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine, smectitic, mesic

Cumulic Vertic Endoaquolls

Typical Pedon

Rantoul silty clay, 0 to 2 percent slopes; at an elevation of 653 feet; 111 feet south and 1,612 feet east of the northwest corner of sec. 29, T. 30 N., R. 7 E.; Livingston County, Illinois; USGS Dwight topographic quadrangle; lat. 41 degrees 02 minutes 58 seconds N. and long. 88 degrees 27 minutes 3 seconds W., NAD 27:

Ap—0 to 8 inches; black (N 2.5/0) silty clay, dark gray (10YR 4/1) dry; moderate fine granular structure; firm; few very fine roots; neutral; abrupt smooth boundary.

A—8 to 17 inches; black (N 2.5/0) silty clay, dark gray (10YR 4/1) dry; moderate medium granular structure; firm; few very fine roots; few fine very dark brown (7.5YR 2/2) very weakly cemented iron and manganese oxide nodules throughout; neutral; clear smooth boundary.

Bg1—17 to 26 inches; very dark gray (10YR 3/1) silty clay, gray (10YR 5/1) dry; strong medium prismatic structure parting to strong fine and medium subangular blocky; firm; few very fine roots; many distinct black (N 2.5/0) organic coatings on faces of peds; few fine very dark brown (7.5YR 2/2) very weakly cemented iron and manganese oxide nodules throughout; few coarse prominent olive (5Y 4/3) and common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 2 percent gravel; neutral; clear smooth boundary.

Bg2—26 to 31 inches; dark gray (5Y 4/1) silty clay; strong medium prismatic structure parting to strong medium subangular blocky; firm; few very fine roots; many distinct very dark gray (5Y 3/1)

organic coatings on faces of peds; few fine very dark brown (7.5YR 2/2) very weakly cemented iron and manganese oxide nodules throughout; common fine and medium prominent light olive brown (2.5Y 5/6) and yellowish brown (10YR 5/6) masses of iron in the matrix; 2 percent gravel; neutral; clear smooth boundary.

Bg3—31 to 40 inches; gray (5Y 5/1) silty clay; strong medium prismatic structure parting to strong medium angular blocky; firm; few very fine roots; common distinct dark gray (5Y 4/1) slickensides on faces of peds; few fine very dark brown (7.5YR 2/2) very weakly cemented iron and manganese oxide nodules throughout; few fine prominent light olive brown (2.5Y 5/6) masses of iron in the matrix; 2 percent gravel; neutral; clear smooth boundary.

Bg4—40 to 47 inches; 60 percent gray (5Y 5/1) and 40 percent dark gray (5Y 4/1) silty clay; moderate medium and coarse prismatic structure parting to moderate medium and coarse angular blocky; firm; few very fine roots; common faint dark gray (5Y 4/1) slickensides on faces of peds; few fine very dark brown (7.5YR 2/2) very weakly cemented iron and manganese oxide nodules throughout; common fine prominent yellowish brown (10YR 5/6 and 5/8) masses of iron in the matrix; 3 percent gravel; slightly alkaline; abrupt smooth boundary.

BCg—47 to 60 inches; 75 percent gray (5Y 5/1) and 25 percent yellowish brown (10YR 5/6) silty clay; weak coarse prismatic structure parting to weak coarse angular blocky; very firm; common faint dark gray (5Y 4/1) slickensides on vertical faces of peds; few fine very dark brown (7.5YR 2/2) very weakly cemented iron and manganese oxide nodules throughout; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Depth to carbonates: 34 to 60 inches

Thickness of the solum: 36 to 70 inches

Ap and A horizons:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3

Chroma—0 or 1

Texture—silty clay

Bg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—2 to 5

Chroma—0 to 2

Texture—silty clay or clay

BCg or Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 6

Texture—silty clay, silty clay loam, or clay

238A—Rantoul silty clay, 0 to 2 percent slopes**Setting***Landform:* Ground moraines and lake plains*Position on landform:* Toeslopes**Map Unit Composition**

Rantoul and similar soils: 94 percent

Dissimilar soils: 6 percent

Minor Components*Similar soils:*

- Soils that have less clay in the subsoil
- Soils that are overlain by light colored recent deposits
- Soils that are lighter colored in the upper part of the subsoil

Dissimilar soils:

- The somewhat poorly drained Swygart soils on footslopes and summits
- The very poorly drained, organic Houghton soils on toeslopes

Properties and Qualities of the Rantoul Soil*Parent material:* Colluvium*Drainage class:* Very poorly drained*Slowest permeability within a depth of 40 inches:* Very slow*Permeability below a depth of 60 inches:* Very 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:* 4.0 to 7.0 percent*Shrink-swell potential:* High*Apparent seasonal high water table:* Within a depth of 1.0 foot, Jan-Jun*Ponding:* 0.5 foot above the surface during wet periods*Flooding:* None*Accelerated erosion:* None*Potential for frost action:* High*Corrosivity:* High for steel and low for concrete*Surface runoff class:* Negligible*Susceptibility to water erosion:* Slight*Susceptibility to wind erosion:* Moderate**Interpretive Groups***Land capability classification:* Rantoul—3w*Prime farmland status:* Rantoul—not prime farmland*Hydric soil status:* Rantoul—hydric**Reddick Series***Drainage class:* Poorly drained*Permeability:* Moderate in the upper part of the profile, slow in the lower part*Landform:* Ground moraines and lake plains*Parent material:* Outwash and the underlying till or lacustrine deposits*Slope range:* 0 to 2 percent*Taxonomic classification:* Fine-loamy, mixed, superactive, mesic Typic Endoaquolls**Typical Pedon**

Reddick clay loam, 0 to 2 percent slopes; at an elevation of 657 feet; 2,616 feet south and 27 feet east of the northwest corner of sec. 34, T. 30 N., R. 9 E.; Kankakee County, Illinois; USGS Buckingham topographic quadrangle; lat. 41 degrees 02 minutes 02 seconds N. and long. 88 degrees 11 minutes 24 seconds W., NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) clay loam, dark gray (10YR 4/1) dry; moderate fine and very fine granular structure; friable; slightly alkaline; abrupt smooth boundary.

A—10 to 13 inches; very dark gray (10YR 3/1) clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; slightly alkaline; clear smooth boundary.

Bg—13 to 19 inches; dark gray (10YR 4/1) clay loam; weak fine prismatic structure parting to moderate very fine subangular blocky; firm; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—19 to 25 inches; gray (5Y 5/1) clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; common faint dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/4) masses of iron in the matrix; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.

Btg2—25 to 32 inches; gray (10YR 5/1) clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; few faint dark gray (10YR 4/1) clay films faces of peds; many fine and medium prominent light olive brown

(2.5Y 5/4) masses of iron in the matrix; 2 percent gravel; slightly alkaline; abrupt smooth boundary.

2Btg3—32 to 47 inches; gray (5Y 6/1) silty clay loam; moderate medium prismatic structure parting to weak medium and coarse subangular blocky; firm; few faint gray (5Y 5/1) clay films on vertical faces of peds; many medium prominent yellowish brown (10YR 5/8) masses of iron in the matrix; common medium faint light gray (5Y 7/1) iron depletions in the matrix; 3 percent gravel; slightly effervescent; moderately alkaline; gradual wavy boundary.

2Cg—47 to 60 inches; 70 percent gray (5Y 6/1) and 30 percent light gray (5Y 7/1) silty clay loam; many medium prominent yellowish brown (10YR 5/6 and 5/8) masses of iron in the matrix; massive; firm; 4 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to till or lacustrine deposits: 30 to 50 inches
Depth to carbonates: 24 to 53 inches
Thickness of the solum: 35 to 55 inches

Ap and A horizons:

Hue—10YR or neutral
 Value—2 or 3
 Chroma—0 to 2
 Texture—loam, clay loam, or silty clay loam

Bg and Btg horizons:

Hue—2.5Y or 5Y
 Value—4 to 6
 Chroma—1 or 2
 Content of gravel—less than 5 percent

2Bg or 2Btg horizon:

Hue—2.5Y or 5Y
 Value—4 to 6
 Chroma—1 or 2
 Content of gravel—less than 10 percent

2Cg horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 to 6
 Chroma—1 to 6
 Texture—silty clay loam, silty clay, or clay
 Content of gravel—less than 15 percent

594A—Reddick clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and lake plains
Position on landform: Toeslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have a thicker surface layer and are darker in the upper part of the subsoil
- Soils that have more silt and less sand in the upper part
- Soils that have less clay in the lower part
- Soils that are overlain by light colored recent deposits

Dissimilar soils:

- The somewhat poorly drained Andres soils on summits and footslopes

Properties and Qualities of the Reddick Soil

Parent material: Outwash and the underlying till or lacustrine deposits
Drainage class: 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 9.8 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: Within a depth of 1.0 foot, Jan-May
Ponding: 0.5 foot above the surface during wet periods
Flooding: None
Accelerated erosion: Negligible
Potential for frost action: High
Corrosivity: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Reddick—2w
Prime farmland status: Reddick—prime farmland where drained
Hydric soil status: Reddick—hydric

Ridgeville Series

Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part of the profile, rapid in the lower part
Landform: Stream terraces and outwash plains

Parent material: Eolian deposits and/or outwash

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Ridgeville fine sandy loam, 0 to 2 percent slopes; at an elevation of 653 feet; 2,084 feet south and 30 feet east of the northwest corner of sec. 19, T. 26 N., R. 12 W.; Iroquois County, Illinois; USGS Woodworth topographic quadrangle; lat. 40 degrees 43 minutes 24 seconds N. and long. 87 degrees 45 minutes 54 seconds W., NAD 27:

Ap—0 to 8 inches; very dark brown (10YR 2/2) fine sandy loam, dark grayish brown (10YR 4/2) dry; weak fine and medium granular structure; very friable; slightly acid; gradual smooth boundary.

A—8 to 16 inches; very dark gray (10YR 3/1) fine sandy loam, dark grayish brown (10YR 4/2) dry; weak fine and medium granular structure; very friable; moderately acid; clear wavy boundary.

BA—16 to 25 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure in the upper 4 inches grading to weak very fine and fine subangular blocky in the lower part; friable; common fine faint brown (10YR 5/3) masses of iron and dark gray (10YR 4/1) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt1—25 to 32 inches; grayish brown (10YR 5/2) sandy clay loam; moderate fine and medium subangular blocky structure; firm; few distinct gray (10YR 5/1) clay films on faces of peds; few fine dark brown (7.5YR 3/2) iron and manganese oxide concretions throughout; many fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

Bt2—32 to 40 inches; grayish brown (10YR 5/2) fine sandy loam; weak medium subangular blocky structure; friable; common distinct gray (10YR 5/1) clay films on faces of peds; many fine dark brown (7.5YR 3/2) iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/8) masses of iron in the matrix; slightly acid; clear wavy boundary.

BC—40 to 47 inches; yellowish brown (10YR 5/8) loamy fine sand; weak medium subangular blocky structure; very friable; few fine dark brown (7.5YR 3/2) iron and manganese oxide concretions throughout; many medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; neutral; clear wavy boundary.

Cg—47 to 60 inches; light brownish gray (10YR 6/2) fine sand; single grain; loose; common fine

prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches

Thickness of the solum: 35 to 55 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam or loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—sandy loam, loam, sandy clay loam, or fine sandy loam

Cg horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—2 to 8

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

Content of gravel—less than 7 percent

151A—Ridgeville fine sandy loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Summits and footslopes

Map Unit Composition

Ridgeville and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils with a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have carbonates in the lower part
- Soils that have sandy and gravelly outwash in the lower part
- Soils with slopes of more than 2 percent

Dissimilar soils:

- The well drained Onarga soils on backslopes and summits
- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Ridgeville Soil

Parent material: Eolian deposits and/or outwash

Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches:
 Moderate
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 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
Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: Moderate for steel and concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Ridgeville—2s
Prime farmland status: Ridgeville—prime farmland in all areas
Hydric soil status: Ridgeville—not hydric

Ritchey Series

Drainage class: Well drained
Permeability: Moderate
Landform: Stream terraces
Parent material: Till over dolostone
Slope range: 4 to 12 percent
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Hapludalfs

Typical Pedon

Ritchey silt loam, 6 to 12 percent slopes; at an elevation of 590 feet; 1,160 feet north and 3,340 feet east of the southwest corner of sec. 32, T. 32 N., R. 11 E.; Kankakee County, Illinois; USGS Bourbonnais topographic quadrangle; lat. 41 degrees 12 minutes 31 seconds N. and long. 87 degrees 58 minutes 50 seconds W., NAD 27:

A—0 to 4 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; neutral; clear smooth boundary.
 E—4 to 8 inches; brown (10YR 5/3) silt loam, very

pale brown (10YR 7/3) dry; weak thin platy structure; friable; common very fine roots; many prominent dark grayish brown (10YR 3/2) organic coatings on faces of pedis; 2 percent gravel; slightly alkaline; clear smooth boundary.
 Bt—8 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common very fine and fine roots; common prominent very dark grayish brown (10YR 3/2) organic coatings on faces of pedis; many discontinuous faint brown (10YR 4/3) clay films on faces of pedis and in pores; common fine faint brown (7.5YR 4/4) weakly cemented iron oxide concretions; few fine prominent black (7.5YR 2.5/1) weakly cemented manganese oxide concretions; 4 percent gravel; slightly alkaline; abrupt smooth boundary.
 2R—16 inches; yellow (10YR 8/6), unweathered limestone bedrock; slightly effervescent.

Range in Characteristics

Thickness of the solum: 10 to 20 inches
Depth to lithic contact: 10 to 20 inches

A or Ap horizon:
 Hue—10YR
 Value—2 to 4
 Chroma—2 or 3
 Texture—silt loam or loam

E horizon:
 Hue—10YR
 Value—4 or 5
 Chroma—2 to 4
 Texture—silt loam or loam

Bt horizon:
 Hue—5YR, 7.5YR, or 10YR
 Value—4 to 6
 Chroma—3 to 5
 Texture—loam, clay loam, silt loam, or silty clay loam
 Content of gravel—1 to 10 percent

311C—Ritchey silt loam, 4 to 6 percent slopes

Setting

Landform: Stream terraces
Position on landform: Backslopes and shoulders

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have bedrock beginning at a depth of more than 20 inches
- Soils that are moderately eroded
- Soils that have slopes of less than 4 percent or more than 6 percent

Dissimilar soils:

- The very shallow, somewhat excessively drained Elizabeth soils on backslopes

Properties and Qualities of the Ritchey Soil

Parent material: Till over dolostone

Drainage class: 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 (lithic bedrock): 10 to 20 inches

Available water capacity: About 3.7 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

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ritchey—3e

Prime farmland status: Ritchey—not prime farmland

Hydric soil status: Ritchey—not hydric

311D—Ritchey silt loam, 6 to 12 percent slopes

Setting

Landform: Stream terraces

Position on landform: Backslopes

Map Unit Composition

Ritchey and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that are moderately eroded

- Soils that have bedrock beginning at a depth of more than 20 inches
- Soils that have slopes of less than 6 percent or more than 12 percent

Dissimilar soils:

- The very shallow, somewhat excessively drained Elizabeth soils on backslopes

Properties and Qualities of the Ritchey Soil

Parent material: Till over dolostone

Drainage class: 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 (lithic bedrock): 10 to 20 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 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ritchey—4e

Prime farmland status: Ritchey—not prime farmland

Hydric soil status: Ritchey—not hydric

Roby Series

Drainage class: Somewhat poorly drained

Permeability: Moderately rapid

Landform: Outwash plains and stream terraces

Parent material: Outwash

Slope range: 0 to 2 percent

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

Typical Pedon

Roby fine sandy loam, 0 to 2 percent slopes; at an elevation of 543 feet; 1,152 feet south and 2,079 feet east of the northwest corner of sec. 30, T. 33 N., R. 8 E.; Grundy County, Illinois; USGS Coal City topographic quadrangle; lat. 41 degrees 18 minutes 44 seconds N. and long. 88 degrees 21 minutes 18 seconds W., NAD 27:

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

E—6 to 10 inches; pale brown (10YR 6/3) fine sand; weak medium platy structure; very friable; many dark grayish brown (10YR 4/2) silt coatings on faces of peds; few medium and fine distinct very dark gray (10YR 3/1) iron and manganese oxide accumulations on faces of peds; moderately acid; abrupt smooth boundary.

BE—10 to 15 inches; pale brown (10YR 6/3) loamy fine sand; weak medium subangular blocky structure; very friable; common fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

Btg1—15 to 25 inches; light brownish gray (10YR 6/2) fine sandy loam; weak medium subangular blocky structure; very friable; few faint grayish brown (10YR 5/2) clay films on faces of peds; many medium and fine prominent yellowish red (5YR 4/6) weakly cemented iron and manganese oxide nodules throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; moderately acid; abrupt smooth boundary.

Btg2—25 to 32 inches; light brownish gray (10YR 6/2) fine sandy loam; weak medium subangular blocky structure; very friable; few faint grayish brown (10YR 5/2) clay films on faces of peds and as coatings on sand grains; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

Cg—32 to 60 inches; stratified light brownish gray (10YR 6/2) loamy fine sand and yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) fine sandy loam; single grain in the loamy fine sand and massive in the fine sandy loam; loose in the loamy fine sand and very friable in the fine sandy loam; few fine prominent dark brown (7.5YR 3/2) masses of iron and manganese in the matrix; moderately acid.

Range in Characteristics

Thickness of the solum: 30 to 60 inches

Ap or A horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—fine sandy loam, loam, or sandy loam

E horizon:

Hue—10YR

Value—4 to 6

Chroma—3 or 4

Texture—loamy fine sand or fine sandy loam

Btg or Bt horizon:

Hue—10YR

Value—4 to 6

Chroma—2 to 6

Texture—fine sandy loam, sandy loam, or loam

Cg horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—2 to 8

Texture—stratified sand to loam

Content of gravel—less than 7 percent

184A—Roby fine sandy loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Footslopes and summits

Map Unit Composition

Roby and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more gravel in the lower part
- Soils with a seasonal high water table beginning at a depth of more than 2 feet
- Soils with carbonates in the lower part
- Soils with a thicker, darker surface layer

Dissimilar soils:

- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Roby 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: Moderately rapid or rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 7.7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Low

Depth to apparent seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight
Potential for frost action: High
Corrosivity: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Roby—2s
Prime farmland status: Roby—prime farmland in all areas
Hydric soil status: Roby—not hydric

Rodman Series

Drainage class: Excessively drained
Permeability: Very rapid
Landform: Outwash plains and end moraines
Parent material: Sandy and gravelly glaciofluvial deposits
Slope range: 4 to 30 percent
Taxonomic classification: Sandy-skeletal, mixed, mesic Typic Hapludolls

Typical Pedon

Rodman gravelly loam, 6 to 12 percent slopes, eroded; at an elevation of 530 feet; 2,120 feet south and 740 feet west of the northeast corner of sec. 9, T. 33 N., R. 9 E.; Will County, Illinois; USGS Wilmington topographic quadrangle; lat. 41 degrees 21 minutes 25 seconds N. and long. 88 degrees 11 minutes 43 seconds W., NAD 27:

A—0 to 8 inches; very dark grayish brown (10YR 3/2) gravelly loam, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; many very fine and common fine roots; 15 percent gravel; neutral; clear smooth boundary.

Bw—8 to 12 inches; dark brown (10YR 3/3) gravelly loam; weak fine subangular blocky structure parting to weak fine granular; very friable; common very fine roots; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; 15 percent gravel; slightly alkaline; abrupt smooth boundary.

C1—12 to 18 inches; brown (10YR 4/3) very gravelly loamy sand; single grain; loose; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on sand grains and pebbles; 40 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

C2—18 to 60 inches; dark yellowish brown (10YR 4/4) very gravelly sand; single grain; loose; few very fine roots; 45 percent gravel and 15

percent cobbles; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 6 to 15 inches

Depth to carbonates: 10 to 15 inches

Thickness of the solum: 10 to 15 inches

A or Ap horizon:

Hue—7.5YR or 10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam, sandy loam, or the gravelly analogs of those textures

Content of gravel—10 to 25 percent

Bw horizon:

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 or 3

Texture—loam, sandy loam, or the gravelly analogs of those textures

Content of gravel—10 to 35 percent

C horizon:

Hue—10YR

Value—3 to 5

Chroma—1 to 4

Texture—the very gravelly or extremely gravelly analogs of loamy sand, sand, loamy coarse sand, or coarse sand

Content of gravel—35 to 70 percent

93C2—Rodman gravelly loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains and end moraines

Position on landform: Backslopes and shoulders

Map Unit Composition

Rodman and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have slopes of less than 4 percent
- Soils that formed in loamy outwash and cobbles
- Soils that have carbonates at or near the surface
- Soils that are severely eroded
- Soils with a light colored surface layer

Dissimilar soils:

- The somewhat poorly drained Kane soils on footslopes and summits

- The poorly drained Will soils on toeslopes

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 3.2 inches to a depth of 60 inches

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

Shrink-swell potential: Low

Ponding: None

Flooding: None

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

Potential for frost action: Low

Corrosivity: Low for steel and concrete

Surface runoff class: Very low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Negligible

Interpretive Groups

Land capability classification: Rodman—4s

Prime farmland status: Rodman—not prime farmland

Hydric soil status: Rodman—not hydric

93D2—Rodman gravelly loam, 6 to 12 percent slopes, eroded

Setting

Landform: Outwash plains and end moraines

Position on landform: Backslopes

Map Unit Composition

Rodman and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are severely eroded
- Soils with a light colored surface layer
- Soils that formed in loamy outwash and cobbles
- Soils with slopes of less than 6 percent
- Soils that have carbonates at or near the surface

Dissimilar soils:

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

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 2.7 inches to a depth of 60 inches

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

Shrink-swell potential: Low

Ponding: None

Flooding: None

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

Potential for frost action: Low

Corrosivity: Low for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Negligible

Interpretive Groups

Land capability classification: Rodman—4s

Prime farmland status: Rodman—not prime farmland

Hydric soil status: Rodman—not hydric

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

Setting

Landform: End moraines and outwash plains

Position on landform: Backslopes

Map Unit Composition

Casco and similar soils: 50 percent

Rodman and similar soils: 40 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that are only slightly eroded
- 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

Dissimilar soils:

- The somewhat poorly drained Kane soils on summits and 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
Corrosivity: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

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
Corrosivity: 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 status: Casco and Rodman—not prime farmland
Hydric soil status: Casco and Rodman—not hydric

969F—Casco-Rodman complex, 20 to 30 percent slopes

Setting

Landform: End moraines and outwash plains
Position on landform: Backslopes

Map Unit Composition

Casco and similar soils: 45 percent
 Rodman and similar soils: 40 percent
 Dissimilar soils: 15 percent

Minor Components

Similar soils:

- Soils that have carbonates at or near the surface
- Soils that have sandy and gravelly deposits beginning at a depth of more than 20 inches
- Soils that have slopes of less than 20 percent or more than 30 percent
- Soils that are moderately eroded

Dissimilar soils:

- The somewhat poorly drained Kane soils on summits and 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 3.8 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
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

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 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Low
Corrosivity: 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—7e; Rodman—7s
Prime farmland status: Casco and Rodman—not prime farmland
Hydric soil status: Casco and Rodman—not hydric

Romeo Series

Drainage class: Poorly drained
Permeability: Moderate
Landform: Stream terraces and flood plains
Parent material: Drift or alluvium over dolostone
Slope range: 0 to 2 percent
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Endoaquolls

Typical Pedon

Romeo silt loam, 0 to 2 percent slopes; at an elevation of 585 feet; 150 feet south and 1,280 feet east of the northwest corner of sec. 25, T. 37 N., R. 10 E.; Will County, Illinois; USGS Romeoville topographic quadrangle; lat. 41 degrees 40 minutes 13 seconds N. and long. 88 degrees 02 minutes 27 minutes W., NAD 27:

A—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; many very fine to coarse roots; 3 percent gravel; neutral; abrupt smooth boundary.
 R—8 inches; light gray (2.5Y 7/1), unweathered limestone bedrock; slightly effervescent.

Range in Characteristics

Depth to lithic contact: 2 to 10 inches
Thickness of the solum: 2 to 10 inches

A horizon:
 Hue—7.5YR, 10YR, or 2.5Y
 Value—2 or 3
 Chroma—1 or 2
 Texture—loam, clay loam, silt loam, or silty clay loam
 Content of gravel—less than 15 percent

316A—Romeo silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces (fig. 5)
Position on landform: Toeslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have bedrock beginning at depth of more than 10 inches

Dissimilar soils:

- The shallow, well drained Channahon soils on summits
- The moderately deep, very poorly drained Millsdale soils on toeslopes

Properties and Qualities of the Romeo Soil

Parent material: Drift over dolostone
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature (lithic bedrock): 2 to 10 inches
Available water capacity: About 1.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Low
Perched seasonal high water table: Within a depth of 0.5 foot, Jan-May
Ponding: 0.5 foot above the surface during wet periods
Flooding: None
Accelerated erosion: Negligible
Potential for frost action: High
Corrosivity: High for steel and low for concrete
Surface runoff class: Low



Figure 5.—A dolomite prairie along the Des Plaines River. The soils in this area are dominantly shallow, or less than 10 inches deep over bedrock. An example is Romeo silt loam, 0 to 2 percent slopes.

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Romeo—6s

Prime farmland status: Romeo—not prime farmland

Hydric soil status: Romeo—hydric

3316A—Romeo silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Romeo and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have bedrock beginning at a depth of more than 10 inches

Dissimilar soils:

- Soils that are not subject to flooding

Properties and Qualities of the Romeo Soil

Parent material: Alluvium over dolostone

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Slow

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

Depth to restrictive feature (lithic bedrock): 2 to 10 inches

Available water capacity: About 2.2 inches to a depth of 60 inches

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

Shrink-swell potential: Low

Perched seasonal high water table: Within a depth of 0.5 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: Frequent, Nov-Jun

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Romeo—6s

Prime farmland status: Romeo—not prime farmland

Hydric soil status: Romeo—hydric

Sawmill Series

Drainage class: Poorly drained

Permeability: Moderate

Landform: Flood plains

Parent material: Alluvium

Slope range: 0 to 2 percent

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

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 636 feet; 1,350 feet south and 140 feet west of the northeast corner of sec. 31, T. 30 N., R. 3 E.; Livingston County, Illinois; USGS Long Point topographic quadrangle; lat. 41 degrees 01 minute 37 seconds N. and long. 88 degrees 54 minutes 42 seconds W., NAD 27:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

A1—9 to 17 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A2—17 to 24 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; few very fine roots; 1 percent gravel; neutral; clear smooth boundary.

A3—24 to 29 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; 1 percent gravel; neutral; clear smooth boundary.

Bg1—29 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of ped; few fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

Bg2—36 to 41 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of ped; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish

brown (10YR 5/6) masses of iron in the matrix; few fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

BCg—41 to 48 inches; dark gray (5Y 4/1) silty clay loam; very weak medium prismatic structure; firm; few very fine roots; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/4) masses of iron in the matrix; common fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; abrupt smooth boundary.

Cg—48 to 60 inches; 60 percent gray (10YR 5/1) and 40 percent brownish yellow (10YR 6/6) silt loam; massive; firm; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 1 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Depth to carbonates: More than 48 inches

Thickness of the solum: 36 to 60 inches

Ap and A horizons:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—2 or 3

Chroma—0 to 2

Texture—silty clay loam

Bg and BCg horizons:

Hue—10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—silty clay loam, clay loam, or loam

Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silty clay loam or clay loam with strata of loam, silt loam, or sandy loam

Content of gravel—less than 10 percent

3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a thinner subsurface layer
- Soils that have less clay
- Soils that are overlain by light colored recent deposits
- Soils that have more gravel in the lower part

Dissimilar soils:

- The poorly drained, calcareous Millington soils on toeslopes

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches:
Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.6 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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: Frequent, Nov-Jun

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Sawmill—3w

Prime farmland status: Sawmill—prime farmland where drained and either protected from flooding or not frequently flooded during the growing season

Hydric soil status: Sawmill—hydric

Selma Series

Drainage class: Poorly drained

Permeability: Moderate

Landform: Outwash plains and stream terraces

Parent material: Outwash

Slope range: 0 to 2 percent

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

Typical Pedon

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 NE topographic quadrangle; lat. 40 degrees 54 minutes 35 seconds N. and long. 88 degrees 06 minutes 43 seconds W., NAD 27:

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 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 nodules throughout; common medium distinct olive brown (2.5Y 4/4) masses of iron 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; black (N 2.5/0) krotovina at a depth of 30 to 39 inches; few fine prominent dark yellowish brown (10YR 4/6) iron and manganese nodules throughout; few fine prominent light olive brown (2.5Y 5/6) masses of iron 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 nodules throughout; few fine prominent light olive brown (2.5Y 5/6) masses of iron 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

Thickness of the solum: 35 to 55 inches

Ap and A horizons:

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 neutral

Value—4 to 6

Chroma—0 to 2

Texture—loam, clay loam, silt 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 2

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

Content of gravel—less than 15 percent

125A—Selma loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Toeslopes

Map Unit Composition

Selma and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more gravel in the lower part

- Soils that have till in the lower part
- Soils that have less sand and more silt in the upper two-thirds of the profile

Dissimilar soils:

- The somewhat poorly drained La Hogue soils on footslopes and summits
- The very poorly drained, organic 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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Selma—2w

Prime farmland status: Selma—prime farmland where drained

Hydric soil status: Selma—hydric

Sparta Series

Drainage class: Excessively drained

Permeability: Rapid

Landform: Outwash plains and stream terraces

Parent material: Eolian deposits and/or outwash

Slope range: 6 to 12 percent

Taxonomic classification: Sandy, mixed, mesic Entic Hapludolls

Typical Pedon

Sparta loamy fine sand, 6 to 12 percent slopes; at an elevation of 525 feet; 1,600 feet north and 380 feet east of the southwest corner of sec. 25, T. 33 N., R. 9

E.; Will County, Illinois; USGS Wilmington topographic quadrangle; lat. 41 degrees 18 minutes 35 seconds N. and long. 88 degrees 09 minutes 00 seconds W., NAD 27:

A—0 to 11 inches; very dark brown (10YR 2/2) loamy fine sand, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure; friable; common very fine and fine roots; neutral; gradual wavy boundary.

AB—11 to 15 inches; 70 percent very dark brown (10YR 2/2) and 30 percent dark yellowish brown (10YR 3/4) loamy sand, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; friable; common very fine roots; neutral; clear smooth boundary.

Bw1—15 to 24 inches; brown (7.5YR 4/4) loamy sand; weak medium subangular blocky structure; very friable; common very fine roots; neutral; gradual wavy boundary.

Bw2—24 to 36 inches; brown (7.5YR 4/4) loamy sand; weak fine and medium subangular blocky structure; very friable; common very fine roots; neutral; gradual wavy boundary.

C1—36 to 67 inches; yellowish brown (10YR 5/4) sand; single grain; loose; 1 percent gravel; slightly alkaline; gradual wavy boundary.

C2—67 to 80 inches; 60 percent pale brown (10YR 6/3) and 40 percent yellowish brown (10YR 5/6) sand; single grain; loose; 1 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Depth to carbonates: More than 80 inches

A or Ap horizon:

Hue—7.5YR or 10YR

Value—2 or 3

Chroma—1 or 2

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

AB horizon:

Hue—7.5YR or 10YR

Value—2 or 3

Chroma—2 or 3

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

Bw horizon:

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—3 to 6

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

Content of gravel—less than 10 percent

C horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—sand or fine sand

Content of gravel—less than 10 percent

88D—Sparta loamy fine sand, 6 to 12 percent slopes

Setting

Landform: Outwash plains and stream terraces

Position on landform: Backslopes

Map Unit Composition

Sparta and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have a seasonal high water table beginning at a depth of less than 6 feet
- Soils with slopes of less than 6 percent
- Soils that have less sand and more clay
- Soils that have more than 10 percent gravel

Dissimilar soils:

- The somewhat poorly drained Watseka soils on footslopes and summits

Properties and Qualities of the Sparta Soil

Parent material: Eolian deposits and/or outwash

Drainage class: Excessively 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 4.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Low

Corrosivity: Low for steel and high for concrete

Surface runoff class: Very low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Sparta—6s

Prime farmland status: Sparta—not prime farmland

Hydric soil status: Sparta—not hydric

St. Clair Series

Drainage class: Moderately well drained

Permeability: Very slow

Landform: Ground moraines and end moraines

Slope range: 6 to 20 percent

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

Taxonomic classification: Fine, illitic, mesic Oxyaquic Hapludalfs

Typical Pedon

St. Clair silty clay loam, 12 to 20 percent slopes; at an elevation of 614 feet; 320 feet north and 80 feet west of the center of sec. 34, T. 30 N., R. 4 E.; Livingston County, Illinois; USGS Blackstone topographic quadrangle; lat. 41 degrees 01 minute 33 seconds N. and long. 88 degrees 44 minutes 55 seconds W., NAD 27:

A—0 to 5 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

Bt1—5 to 12 inches; brown (10YR 4/3) silty clay; moderate fine subangular blocky structure; very firm; few very fine roots; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear smooth boundary.

Bt2—12 to 18 inches; brown (10YR 4/3) silty clay; moderate fine subangular blocky structure; very firm; few very fine roots; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common medium faint yellowish brown (10YR 5/4) masses of iron in the matrix; 1 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

BC—18 to 26 inches; grayish brown (10YR 5/2) silty clay; moderate fine subangular blocky structure; very firm; few very fine roots; common fine distinct light olive brown (2.5Y 5/4) masses of iron in the matrix; 3 percent gravel; violently effervescent; moderately alkaline; clear smooth boundary.

2Cd—26 to 60 inches; 70 percent grayish brown (10YR 5/2) and 30 percent light olive brown (2.5Y

5/4) silty clay; massive; very firm; few very fine roots; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; violently effervescent; moderately alkaline.

Range in Characteristics

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

Depth to carbonates: 10 to 30 inches

Thickness of the solum: 20 to 48 inches

A horizon:

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 or 3

Texture—silty clay loam or silt loam

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay or clay

Content of gravel—less than 15 percent

2Cd horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—1 to 4

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

Content of gravel—1 to 15 percent

560D2—St. Clair silty clay loam, 6 to 12 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines

Position on landform: Backslopes

Map Unit Composition

St. Clair and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils with slopes of less than 6 percent or more than 12 percent
- Soils with less clay in the middle and lower parts
- Soils that have a seasonal high water table beginning at a depth of less than 2 feet
- Soils that are severely eroded

Dissimilar soils:

- The gently sloping, somewhat poorly drained Nappanee soils on footslopes and backslopes

Properties and Qualities of the St. Clair 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: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature (dense material): 20 to 48 inches
Available water capacity: About 5.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: St. Clair—4e
Prime farmland status: St. Clair—not prime farmland
Hydric soil status: St. Clair—not hydric

560E—St. Clair silty clay loam, 12 to 20 percent slopes

Setting

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

Map Unit Composition

St. Clair and similar soils: 92 percent
 Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils with slopes of less than 12 percent or more than 20 percent
- Soils with less clay in the middle and lower parts
- Soils that are moderately eroded or severely eroded

Dissimilar soils:

- The gently sloping, somewhat poorly drained Nappanee soils on footslopes and backslopes

Properties and Qualities of the St. Clair 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: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature (dense material): 20 to 48 inches
Available water capacity: About 4.1 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
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: St. Clair—6e
Prime farmland status: St. Clair—not prime farmland
Hydric soil status: St. Clair—not hydric

Starks Series

Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Starks silt loam, 0 to 2 percent slopes; at an elevation of 610 feet; 30 feet south and 600 feet east of the northwest corner of sec. 33, T. 30 N., R. 4 E.; Livingston County, Illinois; USGS Streator South topographic quadrangle; lat. 41 degrees 01 minute 57 seconds N. and long. 88 degrees 46 minutes 29 seconds W., NAD 27:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

- E—10 to 14 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate fine subangular blocky structure; friable; few very fine roots; many distinct white (10YR 8/1 dry) silt coatings on faces of peds; common fine faint brown (10YR 5/3) masses of iron in the matrix; neutral; abrupt smooth boundary.
- BE—14 to 17 inches; 80 percent brown (10YR 4/3) and 20 percent grayish brown (10YR 5/2) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct white (10YR 8/1 dry) silt coatings on faces of peds; common fine faint yellowish brown (10YR 5/4) masses of iron in the matrix; neutral; abrupt smooth boundary.
- Bt—17 to 21 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.
- Btg1—21 to 25 inches; gray (10YR 5/1) silty clay loam; weak 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 distinct black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine prominent brown (7.5YR 4/4) masses of iron in the matrix; slightly acid; clear smooth boundary.
- Btg2—25 to 31 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly acid; clear smooth boundary.
- 2Btg3—31 to 43 inches; grayish brown (2.5Y 5/2), stratified silt loam and sandy loam; weak medium prismatic structure parting to weak fine angular blocky; friable; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions

throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.

- 2Cg—43 to 60 inches; grayish brown (2.5Y 5/2) sandy loam with thin strata of loamy sand; massive; very friable; many coarse prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral.

Range in Characteristics

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

Depth to carbonates: 40 to 70 inches

Thickness of the solum: 35 to more than 60 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—1 to 3

Texture—silt loam

E horizon:

Hue—10YR

Value—5 or 6

Chroma—2 or 3

Texture—silt loam

Bt and Btg horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay loam

2Btg or 2BCg horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—1 to 6

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

Content of gravel—less than 5 percent

2Cg horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—1 to 6

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

Content of gravel—less than 15 percent

132A—Starks silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces

Position on landform: Footslopes and summits

Map Unit Composition

Starks and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have more than 15 percent gravel in the lower part
- Soils that have slopes of more than 2 percent
- Soils that have till in the lower part
- Soils that have a thicker, darker surface layer

Dissimilar soils:

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

Properties and Qualities of the Starks 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 10.7 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

Depth to apparent seasonal high water table: 0.5 foot to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Starks—2w

Prime farmland status: Starks—prime farmland where drained

Hydric soil status: Starks—not hydric

Swygert Series

Drainage class: Somewhat poorly drained

Permeability: Slow in the upper part of the profile, very slow in the lower part

Landform: Ground moraines

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

Slope range: 0 to 6 percent

Taxonomic classification: Fine, mixed, active, mesic Aquic Argiudolls

Taxadjunct Feature

Swygert silty clay loam, 2 to 4 percent slopes, eroded, and Swygert silty clay loam, 4 to 6 percent slopes, eroded, have a mollic epipedon that is less than 10 inches thick. They are fine, mixed, active, mesic Aquollic Hapludalfs.

Typical Pedon

Swygert silty clay loam, 0 to 2 percent slopes; at an elevation of 675 feet; 339 feet south and 66 feet east of the northwest corner of sec. 7, T. 25 N., R. 13 W.; Iroquois County, Illinois; USGS Onarga East topographic quadrangle; lat. 40 degrees 38 minutes 36 seconds N. and long. 87 degrees 53 minutes 02 seconds W., NAD 27:

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

A—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak medium angular blocky structure parting to weak fine subangular blocky; friable; many fine roots; common black (N 2.5/0) krotovinas; slightly acid; abrupt smooth boundary.

Bt1—12 to 18 inches; very dark grayish brown (10YR 3/2) silty clay, gray (10YR 5/1) dry; moderate fine subangular blocky structure; friable; many fine roots; many distinct black (10YR 2/1) and very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine faint brown (10YR 4/3) masses of iron in the matrix; slightly acid; clear wavy boundary.

Bt2—18 to 26 inches; brown (10YR 4/3) silty clay; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent strong brown (7.5YR 5/6) masses of iron in the matrix; few fine distinct olive gray (5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—26 to 31 inches; yellowish brown (10YR 5/4) silty clay; moderate medium prismatic structure parting

to weak medium and fine angular blocky; firm; common fine roots; common distinct very dark gray (10YR 3/1) organo-clay films in root channels; common very dark gray (10YR 3/1) krotovinas; common distinct dark gray (10YR 4/1) and gray (10YR 5/1) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine prominent gray (5Y 5/1) iron depletions in the matrix; slightly effervescent (7 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

2Bt4—31 to 41 inches; light olive brown (2.5Y 5/4) silty clay; moderate medium prismatic structure parting to weak coarse angular blocky; very firm; few fine roots; common prominent very dark gray (10YR 3/1) organo-clay films and gray (5Y 5/1) clay films on faces of peds; common medium prominent gray (5Y 5/1) iron depletions in the matrix; slightly effervescent (16 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

2Bt5—41 to 51 inches; light olive brown (2.5Y 5/4) silty clay; weak coarse prismatic structure; very firm; few fine roots; common distinct very dark gray (5Y 3/1) organo-clay films in root channels; many distinct dark gray (5Y 4/1) clay films on faces of peds; common fine black (10YR 2/1) iron and manganese oxide concretions throughout; few fine distinct olive (5Y 5/6) and few fine prominent strong brown (7.5YR 5/6) masses of iron in the matrix; common fine prominent gray (5Y 5/1) iron depletions in the matrix; strongly effervescent (18 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

2Cd—51 to 60 inches; brown (10YR 5/3) silty clay; massive; very firm; many distinct gray (5Y 6/1) pressure faces; common fine black (10YR 2/1) iron and manganese oxide concretions throughout; few coarse prominent strong brown (7.5YR 5/6 and 5/8) masses of iron in the matrix; strongly effervescent (19 percent calcium carbonate equivalent); moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Depth to till: Less than 45 inches

Depth to carbonates: 20 to 50 inches

Thickness of the solum: 35 to 55 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silty clay loam

Bt and 2Bt horizons:

Hue—10YR, 2.5Y, or 5Y

Value—4 or 5

Chroma—2 to 6

Texture—silty clay or clay

2Cd horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 6

Texture—silty clay, silty clay loam, or clay

91A—Swygert silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines

Position on landform: Footslopes and summits

Map Unit Composition

Swygert and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have a seasonal high water table within a depth of 2 feet
- Soils that have slopes of more than 2 percent
- Soils that have more than 50 percent clay in the subsoil

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Swygert Soil

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

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature (dense material): 35 to 55 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: High

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Swygert—2w
Prime farmland status: Swygert—prime farmland in all areas
Hydric soil status: Swygert—not hydric

91B2—Swygert silty clay loam, 2 to 4 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Foothills and backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils with slopes of less than 2 percent
- Soils that have more than 50 percent clay in the subsoil
- Soils that are only slightly eroded

Dissimilar soils:

- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Swygert Soil

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

Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature (dense material): 35 to 55 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: High

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Swygert—2e
Prime farmland status: Swygert—prime farmland in all areas
Hydric soil status: Swygert—not hydric

91C2—Swygert silty clay loam, 4 to 6 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes and shoulders

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that are severely eroded
- Soils that have more than 50 percent clay in the subsoil
- 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 20 inches
- Soils that have slopes of less than 4 percent

Dissimilar soils:

- The moderately drained Chatsworth soils on backslopes
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Swygert Soil

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

Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow

Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature (dense material): 35 to 55 inches

Available water capacity: About 6.5 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

Depth to perched seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Swygart—3e

Prime farmland status: Swygart—prime farmland in all areas

Hydric soil status: Swygart—not hydric

Symerton Series

Drainage class: Moderately well drained

Permeability: Moderate in the upper part of the profile, slow in the lower part

Landform: Ground moraines and lake plains

Parent material: Outwash and the underlying till with or without an overlying thin mantle of loess or other silty material

Slope range: 0 to 10 percent

Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaquic Argiudolls

Taxadjunct Feature

Symerton fine sandy loam, 5 to 10 percent slopes, eroded, and Symerton silt loam, 5 to 10 percent slopes, eroded, have a mollic epipedon that is less than 10 inches thick. They are Oxyaquic Hapludalfs.

Typical Pedon

Symerton silt loam, 2 to 5 percent slopes; at an elevation of 714 feet; 102 feet north and 1,806 feet west of the southeast corner of sec. 33, T. 24 N., R. 12 W.; Iroquois County, Illinois; USGS Hoopston topographic quadrangle; lat. 40 degrees 29 minutes 17 seconds N. and long. 87 degrees 42 minutes 43 seconds W., NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; weak very fine granular structure; firm; slightly acid; abrupt smooth boundary.

A—10 to 15 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine granular structure; friable; moderately acid; clear smooth boundary.

AB—15 to 19 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2)

dry; moderate very fine granular structure; friable; many distinct black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.

2Bt1—19 to 25 inches; brown (10YR 4/3) gravelly clay loam; moderate very fine subangular blocky structure; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide nodules throughout; about 18 percent gravel; moderately acid; clear smooth boundary.

2Bt2—25 to 31 inches; brown (10YR 4/3) gravelly clay loam; moderate fine subangular blocky structure; firm; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide nodules throughout; about 18 percent gravel; neutral; clear smooth boundary.

2Bt3—31 to 35 inches; yellowish brown (10YR 5/4) gravelly loam; weak fine and medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide nodules throughout; few fine prominent yellowish red (5YR 5/8) masses of iron in the matrix; about 18 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

3Bt4—35 to 39 inches; brown (10YR 5/3) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; few distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent yellowish red (5YR 5/8) masses of iron in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

3C—39 to 60 inches; light olive brown (2.5Y 5/4) and light yellowish brown (2.5Y 6/4) silt loam; massive; firm; few fine prominent yellowish red (5YR 4/8) masses of iron in the matrix; few fine prominent gray (10YR 5/1) iron depletions in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Depth to till: 22 to 50 inches

Depth to carbonates: 24 to 55 inches

Thickness of the solum: 30 to 50 inches

Ap, A, and AB horizons:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam, loam, or fine sandy loam

2Bt horizon:

Hue—7.5YR or 10YR
 Value—4 or 5
 Chroma—3 to 6
 Texture—clay loam, silty clay loam, sandy clay, loam, or the gravelly analogs of those textures
 Content of gravel—less than 20 percent

3Bt or 3BC horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 or 5
 Chroma—3 or 4
 Texture—silty clay loam or silt loam

3C horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 to 6
 Chroma—3 or 4
 Texture—silty clay loam or silt loam

719A—Symerton fine sandy loam, 0 to 2 percent slopes**Setting**

Landform: Lake plains and ground moraines

Position on landform: Summits

Map Unit Composition

Symerton and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components*Similar soils:*

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

Dissimilar soils:

- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Outwash 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: Slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 7.6 inches to a depth of 60 inches

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

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Symerton—1

Prime farmland status: Symerton—prime farmland in all areas

Hydric soil status: Symerton—not hydric

719B—Symerton fine sandy loam, 2 to 5 percent slopes**Setting**

Landform: Ground moraines and lake plains

Position on landform: Summits and backslopes

Map Unit Composition

Symerton and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components*Similar soils:*

- Soils that have less sand and more silt in the upper part
- Soils with slopes of less than 2 percent or more than 5 percent
- Soils that are moderately eroded
- Soils that have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:

- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Outwash 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: 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: 1.5 to 3.5 percent

Shrink-swell potential: Moderate
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: Slight
Potential for frost action: Moderate
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Symerton—2e
Prime farmland status: Symerton—prime farmland in all areas
Hydric soil status: Symerton—not hydric

719C2—Symerton fine sandy loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and lake plains
Position on landform: Backslopes and shoulders

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have slopes of less than 5 percent or more than 10 percent

Dissimilar soils:

- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Outwash 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: 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: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None

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

Potential for frost action: Moderate
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Symerton—3e
Prime farmland status: Symerton—prime farmland in all areas
Hydric soil status: Symerton—not hydric

294A—Symerton silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and lake plains
Position on landform: Summits

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have less sand and more clay in the upper one-half of the profile
- Soils that have a seasonal high water table at a depth of less than 2 feet
- Soils with slopes of more than 2 percent

Dissimilar soils:

- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Slow
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: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: Slight

Potential for frost action: Moderate
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Symerton—1
Prime farmland status: Symerton—prime farmland in all areas
Hydric soil status: Symerton—not hydric

294B—Symerton silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and lake plains
Position on landform: Summits and backslopes

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have less sand and more clay in the upper one-half of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that are moderately eroded
- Soils that have a thinner subsoil
- Soils with slopes of less than 2 percent or more than 5 percent

Dissimilar soils:

- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and 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: 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: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: Slight

Potential for frost action: Moderate
Corrosivity: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Symerton—2e
Prime farmland status: Symerton—prime farmland in all areas
Hydric soil status: Symerton—not hydric

294C2—Symerton silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Lake plains and ground moraines
Position on landform: Backslopes and shoulders

Map Unit Composition

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

Minor Components

Similar soils:

- Soils that have less sand and more clay in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have a thinner subsoil
- Soils with slopes of less than 5 percent

Dissimilar soils:

- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Drainage class: Moderately well 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 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: Moderate
Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate
Corrosivity: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Symerton—3e
Prime farmland status: Symerton—prime farmland in all areas
Hydric soil status: Symerton—not hydric

Thorp Series

Drainage class: Poorly drained
Permeability: Slow
Landform: Outwash plains and ground moraines
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon

Thorp silt loam, 0 to 2 percent slopes; at an elevation of 615 feet; 750 feet south and 1,935 feet east of the northwest corner of sec. 30, T. 30 N., R. 4 E.; Livingston County, Illinois; USGS Streator South topographic quadrangle; lat. 41 degrees 02 minutes 47 seconds N. and long. 88 degrees 48 minutes 25 seconds W., NAD 27:

Ap—0 to 11 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; moderately acid; abrupt smooth boundary.

Eg—11 to 15 inches; gray (10YR 6/1) silt loam, light brownish gray (10YR 6/2) dry; weak thin platy structure; friable; few very fine roots; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

Btg1—15 to 22 inches; gray (10YR 5/1) silty clay loam; weak 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; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

Btg2—22 to 30 inches; gray (10YR 5/1) silty 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; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

Btg3—30 to 36 inches; gray (10YR 6/1) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 2 percent gravel; moderately acid; clear smooth boundary.

Btg4—36 to 41 inches; gray (10YR 6/1) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; few faint light brownish gray (10YR 6/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 2 percent gravel; moderately acid; gradual smooth boundary.

2Btg5—41 to 49 inches; gray (10YR 6/1) sandy clay loam; weak fine prismatic structure; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 2 percent gravel; moderately acid; clear smooth boundary.

2Cg—49 to 60 inches; gray (10YR 6/1), stratified sandy loam and silty clay loam; massive; friable; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; 2 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 14 inches

Thickness of the loess or other silty material: 30 to 54 inches

Depth to carbonates: More than 40 inches

Thickness of the solum: 40 to 65 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 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, or 5Y
 Value—4 to 6
 Chroma—1 to 6
 Texture—clay loam, loam, silt loam, sandy loam,
 or sandy clay loam

2Cg horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 to 6
 Chroma—1 to 8
 Texture—loam, silt loam, sandy loam, sandy clay
 loam, or clay loam with strata of loamy sand

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

Setting

Landform: Outwash plains and ground moraines

Position on landform: Toeslopes

Map Unit Composition

Thorp and similar soils: 94 percent

Dissimilar soils: 6 percent

Minor Components

Similar soils:

- Soils that have carbonates at a depth of less than 40 inches
- Soils that have till in the lower part
- Soils that have a thinner surface layer
- Soils that have a darker subsurface layer

Dissimilar soils:

- The moderately well drained Waupecan soils on summits and backslopes
- The somewhat poorly drained Grundelein soils on footslopes and summits

Properties and Qualities of the Thorp Soil

Parent material: Loess or other silty material and the underlying 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 10.5 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: Within a depth of 1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: None

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Thorp—2w

Prime farmland status: Thorp—prime farmland where drained

Hydric soil status: Thorp—hydric

Troxel Series

Drainage class: Well drained

Permeability: Moderate

Landform: Ground moraines and outwash plains

Parent material: Colluvium and the underlying 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 598 feet; 2,220 feet north and 2,460 feet east of the southwest corner of sec. 23, T. 35 N., R. 9 E.; Will County, Illinois; USGS Channahon topographic quadrangle; lat. 41 degrees 29 minutes 29 seconds N. and long. 88 degrees 10 minutes 09 seconds W., NAD 27:

Ap—0 to 7 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.

A1—7 to 23 inches; black (N 2.5/0) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common very fine roots; neutral; gradual smooth boundary.

A2—23 to 32 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.

BA—32 to 38 inches; brown (10YR 4/3) silt loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct black

(10YR 2/1) organic coatings on all faces of peds; slightly acid; clear smooth boundary.

Bt1—38 to 50 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 all faces of peds; common fine distinct very dark gray (10YR 3/1) strongly cemented manganese oxide concretions throughout; moderately acid; clear smooth boundary.

Bt2—50 to 62 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on all faces of peds; common fine prominent very dark gray (10YR 3/1) strongly cemented manganese oxide concretions throughout; moderately acid; clear smooth boundary.

2Bt3—62 to 70 inches; dark brown (7.5YR 3/4) loam; moderate coarse subangular blocky structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on all faces of peds; common discontinuous distinct dark brown (10YR 3/3) organo-clay films on all faces of peds and in pores; 1 percent gravel; slightly acid; clear smooth boundary.

2Bt4—70 to 83 inches; brown (7.5YR 4/4), stratified loam and silt loam; weak coarse prismatic structure parting to weak coarse subangular blocky; friable; 1 percent gravel; moderately acid; abrupt smooth boundary.

2BC—83 to 97 inches; dark brown (7.5YR 3/4) gravelly clay loam; weak coarse subangular blocky structure; friable; 19 percent gravel; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 20 to 45 inches

Thickness of the solum: 5 to more than 10 feet

Ap and A horizons:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3

Chroma—0 to 3

Texture—silt loam or silty clay loam

BA and Bt horizons:

Hue—10YR

Value—3 to 5

Chroma—3 to 6

Texture—silt loam or silty clay loam

2Bt and 2BC horizons:

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 6

Texture—clay loam, loam, sandy clay loam, or the gravelly analogs of those textures
Content of gravel—less than 20 percent

197A—Troxel silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains

Position on landform: Footslopes

Map Unit Composition

Troxel and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils with a dark surface soil that is less than 20 inches thick
- Soils with a seasonal high water table within a depth of 4 feet

Dissimilar soils:

- The somewhat poorly drained Brenton soils on summits and footslopes

Properties and Qualities of the Troxel Soil

Parent material: Colluvium and the underlying 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 12.4 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

Depth to apparent seasonal high water table: 4.0 to 6.0 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: Moderate for steel and concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Troxel—1

Prime farmland status: Troxel—prime farmland in all areas

Hydric soil status: Troxel—not hydric

Varna Series

Drainage class: Moderately well drained

Permeability: Slow

Landform: End moraines and ground moraines

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

Slope range: 2 to 12 percent

Taxonomic classification: Fine, illitic, mesic Oxyaquic Argiudolls

Taxadjunct Feature

Varna silt loam, 4 to 6 percent slopes, eroded, and Varna silt loam, 6 to 12 percent slopes, eroded, have a mollic epipedon that is less than 10 inches thick. They are fine, illitic, mesic Oxyaquic Hapludalfs.

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 54 seconds N. and long. 88 degrees 00 minutes 50 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable, neutral; abrupt smooth boundary.

A—8 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; slightly acid; clear smooth boundary.

2Bt1—12 to 18 inches; brown (10YR 4/3) silty clay loam; moderate very fine subangular blocky structure; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; 5 percent fine gravel; moderately acid; clear smooth boundary.

2Bt2—18 to 24 inches; dark yellowish brown (10YR 4/4) silty clay; weak fine prismatic structure parting to moderate very fine and fine subangular blocky; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 5 percent fine gravel; moderately acid; clear smooth boundary.

2Bt3—24 to 30 inches; light olive brown (2.5Y 5/4) silty clay; weak fine prismatic structure parting to moderate fine angular and subangular blocky; firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine distinct yellowish brown (10YR 5/6) masses of iron 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

Thickness of the solum: 24 to 60 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

2Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—silty clay loam or silty clay

2Cd horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 6

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

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

Setting

Landform: Ground moraines and end moraines

Position on landform: Backslopes and summits

Map Unit Composition

Varna and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components*Similar soils:*

- Soils that are moderately eroded
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have less clay in the subsoil
- Soils with slopes of less than 2 percent or more than 4 percent

Dissimilar soils:

- Moderately well drained, clayey Orthents on summits and backslopes
- The poorly drained Ashkum 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 (dense material): 24 to 60 inches

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

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Varna—2e

Prime farmland status: Varna—prime farmland in all areas

Hydric soil status: Varna—not hydric

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

Landform: End moraines and ground moraines

Position on landform: Shoulders and backslopes

Map Unit Composition

Varna and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components*Similar soils:*

- Soils that are severely eroded
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils with less clay in the subsoil

Dissimilar soils:

- The calcareous, moderately well drained Chatsworth soils on backslopes
- The nearly level, somewhat poorly drained Elliott soils on summits and footslopes
- The poorly drained Ashkum 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 (dense material): 24 to 60 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 3.0 percent

Shrink-swell potential: Moderate

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Varna—3e

Prime farmland status: Varna—prime farmland in all areas

Hydric soil status: Varna—not hydric

223D2—Varna silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines

Position on landform: Backslopes

Map Unit Composition

Varna and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils with slopes of less than 6 percent
- Soils that are severely eroded
- Soils that have less clay in the subsoil

Dissimilar soils:

- The calcareous, moderately well drained Chatsworth soils on backslopes
- The poorly drained Ashkum 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 (dense material): 24 to 60 inches

Available water capacity: About 7.8 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

Depth to perched seasonal high water table: 2.0 to 3.5 feet, Feb-Apr

Ponding: None

Flooding: None

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

Potential for frost action: Moderate

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Very high

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Varna—4e

Prime farmland status: Varna—not prime farmland

Hydric soil status: Varna—not hydric

Warsaw Series

Drainage class: Well drained

Permeability: Moderate in the upper part of the profile, very rapid in the lower part

Landform: Outwash plains and stream terraces

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

Slope range: 0 to 6 percent

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

Taxadjunct Features

Warsaw silt loam, 4 to 6 percent slopes, eroded, has a mollic epipedon that is less than 10 inches thick. It is a fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Warsaw silt loam, 0 to 2 percent slopes; at an elevation of 535 feet; 1,800 feet south and 620 feet west of the northeast corner of sec. 9, T. 33 N., R. 9 E.; Will County, Illinois; USGS Wilmington topographic quadrangle; lat. 41 degrees 21 minutes 25 seconds N. and long. 88 degrees 11 minutes 42 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many very fine roots; 2 percent gravel; slightly acid; clear smooth boundary.

A—7 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure; friable; many very fine roots; common distinct black (10YR 2/1) organic coatings on faces of peds; 2 percent gravel; slightly acid; clear smooth boundary.

2BA—11 to 17 inches; brown (10YR 4/3) loam; moderate fine subangular blocky structure; friable; many very fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on

faces of peds; 5 percent gravel; moderately acid; clear smooth boundary.

2Bt1—17 to 28 inches; dark yellowish brown (10YR 4/4) 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; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 5 percent gravel; moderately acid; clear wavy boundary.

3Bt2—28 to 32 inches; dark yellowish brown (10YR 4/4) gravelly sandy clay loam; weak fine and medium subangular blocky structure; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 20 percent gravel; neutral; clear wavy boundary.

3C1—32 to 44 inches; yellowish brown (10YR 5/4) gravelly loamy sand; massive; very friable; few very fine roots; 20 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

3C2—44 to 80 inches; light yellowish brown (10YR 6/4) very gravelly sand; single grain; loose; 40 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

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

Depth to carbonates: 24 to 40 inches

Thickness of the solum: 24 to 40 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or loam

2Bt and 3Bt horizons:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

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

Content of gravel—0 to 35 percent

3C horizon:

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—3 to 6

Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand

Content of gravel—15 to 70 percent

290A—Warsaw silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Summits

Map Unit Composition

Warsaw and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- 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 seasonal high water table at a depth of less than 6 feet
- Soils that have slopes of more than 2 percent

Dissimilar soils:

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

Properties and Qualities of the Warsaw 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 6.8 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

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Warsaw—2s

Prime farmland status: Warsaw—prime farmland in all areas

Hydric soil status: Warsaw—not hydric

290B—Warsaw silt loam, 2 to 4 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Backslopes and summits

Map Unit Composition

Warsaw and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that are moderately eroded
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have carbonates at a depth of less than 24 inches

Dissimilar soils:

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

Properties and Qualities of the Warsaw 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 6.8 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

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Warsaw—2e

Prime farmland status: Warsaw—prime farmland in all areas

Hydric soil status: Warsaw—not hydric

290C2—Warsaw silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains

Position on landform: Shoulders and backslopes

Map Unit Composition

Warsaw and similar soils: 92 percent

Dissimilar soils: 8 percent

Minor Components

Similar soils:

- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have carbonates at a depth of less than 24 inches
- Soils with slopes of less than 4 percent or more than 6 percent
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:

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

Properties and Qualities of the Warsaw 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 5.6 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
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Corrosivity: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Warsaw—2e
Prime farmland status: Warsaw—prime farmland in all areas
Hydric soil status: Warsaw—not hydric

W—Water

This map unit consists of natural bodies of water, such as ponds, lakes, and rivers.

Watseka Series

Drainage class: Somewhat poorly drained
Permeability: Rapid
Landform: Outwash plains and stream terraces
Parent material: Eolian deposits and/or outwash
Slope range: 0 to 2 percent
Taxonomic classification: Sandy, mixed, mesic Aquic Hapludolls

Typical Pedon

Watseka loamy fine sand, 0 to 2 percent slopes; at an elevation of 653 feet; 450 feet south and 55 feet west of the northeast corner of sec. 6, T. 30 N., R. 10 W.; Kankakee County, Illinois; Leesville topographic quadrangle; lat. 41 degrees 07 minutes 14 seconds N. and long. 87 degrees 31 minutes 37 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) loamy fine sand, dark gray (10YR 4/1) dry; weak medium granular structure; very friable; neutral; abrupt smooth boundary.

A—8 to 10 inches; very dark gray (10YR 3/1) loamy fine sand, gray (10YR 5/1) dry; weak medium

granular structure; very friable; slightly acid; clear smooth boundary.

Bw1—10 to 24 inches; dark grayish brown (10YR 4/2) sand; weak coarse subangular blocky structure; very friable; common dark gray (10YR 4/1) streaks; common medium distinct yellowish brown (10YR 5/4) masses of iron in the matrix; slightly acid; gradual irregular boundary.

Bw2—24 to 32 inches; light brownish gray (10YR 6/2) fine sand; weak coarse subangular blocky structure; very friable; common large splotches of dark gray (10YR 4/1) and very dark gray (10YR 3/1) material; moderately acid; clear wavy boundary.

C—32 to 60 inches; light gray (10YR 7/2) fine sand; single grain; loose; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Depth to carbonates: More than 50 inches

Thickness of the solum: 24 to 40 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—loamy fine sand, fine sand, or sand

Bw or Bg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 7

Chroma—1 to 4

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

Content of gravel—less than 10 percent

C or Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 7

Chroma—1 to 4

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

Content of gravel—less than 10 percent

49A—Watseka loamy fine sand, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces (fig. 6)

Position on landform: Footslopes and summits

Map Unit Composition

Watseka and similar soils: 90 percent



Figure 6.—A terrace landscape along the Kankakee River. Watseka loamy fine sand, 0 to 2 percent slopes, is in the foreground. A ridge of Oakville fine sand, 1 to 6 percent slopes, is in the background.

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have more than 10 percent gravel
- Soils that have more clay in the upper part of the subsoil

Dissimilar soils:

- The somewhat excessively drained Ade soils on backslopes
- The poorly drained Granby soils on toeslopes

Properties and Qualities of the Watseka Soil

Parent material: Eolian deposits and/or outwash

Drainage class: Somewhat poorly 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 5.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.5 percent

Shrink-swell potential: Low

Depth to apparent seasonal high water table: 1.0 to 2.0 feet, Jan-May

Ponding: None

Flooding: None

Accelerated erosion: Slight

Potential for frost action: Moderate

Corrosivity: Low for steel and high for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: Watseka—3s

Prime farmland status: Watseka—not prime farmland

Hydric soil status: Watseka—not hydric

Waupecan Series

Drainage class: Well drained

Permeability: Moderate in the upper part of the profile, very rapid in the lower part

Landform: Outwash plains and stream terraces

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

Slope range: 0 to 4 percent

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

Typical Pedon

Waupecan silt loam, 2 to 4 percent slopes; at an elevation of 775 feet; 2,120 feet south and 720 feet west of the northeast corner of sec. 20, T. 40 N., R. 9 E.; USGS West Chicago topographic quadrangle; lat. 41 degrees 56 minutes 16 seconds N. and long. 88 degrees 13 minutes 38 seconds W., NAD 27:

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; slightly acid; clear smooth boundary.

A—7 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to moderate very fine and fine granular; friable; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bt1—11 to 14 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—14 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common distinct dark brown (10YR 3/3) organo-clay films and many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; gradual smooth boundary.

Bt3—24 to 35 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common distinct dark brown (10YR 3/3) organo-clay films and brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt4—35 to 39 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine and fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films and few distinct brown (10YR 4/3) clay films on faces of peds; 2 percent gravel; neutral; clear wavy boundary.

2Bc—39 to 45 inches; brown (10YR 4/3) gravelly loam; weak medium subangular blocky structure; friable; few distinct dark brown (10YR 3/3) organo-clay films on faces of peds; 25 percent gravel and 5 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

3C—45 to 60 inches; dark yellowish brown (10YR 4/4) very gravelly loamy sand; single grain; loose; 45 percent gravel and 10 percent cobbles; strongly 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 48 inches

Depth to sandy and gravelly deposits: 40 to 60 inches

Depth to carbonates: 24 to 48 inches

Thickness of the solum: 40 to 72 inches

Ap and A horizons:

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

2Bc horizon:

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—3 to 6

Texture—clay loam, sandy clay loam, loam, sandy loam, loamy sand, or the gravelly analogs of those textures

Content of gravel—0 to 35 percent

3C horizon:

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—3 to 6

Texture—gravelly loamy sand to extremely gravelly coarse sand

Content of gravel—15 to 70 percent

Content of cobbles—5 to 35 percent

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

Setting

Landform: Stream terraces and outwash plains

Position on landform: Summits

Map Unit Composition

Waupecan and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

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 at a depth of less than 6 feet

- Soils that have no subsurface layer
- Soils with slopes of more than 2 percent

Dissimilar soils:

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

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 9.6 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

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Waupecan—1

Prime farmland status: Waupecan—prime farmland in all areas

Hydric soil status: Waupecan—not hydric

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

Setting

Landform: Outwash plains and stream terraces

Position on landform: Backslopes and summits

Map Unit Composition

Waupecan and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have sandy and gravelly deposits beginning at a depth of less than 40 inches or more than 60 inches
- Soils with slopes of less than 2 percent or more than 4 percent

- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:

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

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 9.3 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

Accelerated erosion: Slight

Potential for frost action: High

Corrosivity: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Waupecan—2e

Prime farmland status: Waupecan—prime farmland in all areas

Hydric soil status: Waupecan—not hydric

Will Series

Drainage class: Poorly drained

Permeability: Moderate in the upper part of the profile, very rapid in the lower part

Landform: Outwash plains and stream terraces

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 Typic Endoaquolls

Typical Pedon

Will silty clay loam, 0 to 2 percent slopes; at an elevation of 605 feet; 2,260 feet south and 1,660 feet

west of the northeast corner of sec. 14, T. 35 N., R. 9 E.; Will County, Illinois; USGS Plainfield topographic quadrangle; lat. 41 degrees 36 minutes 13 seconds N. and long. 88 degrees 10 minutes 06 seconds W., NAD 27:

Ap—0 to 6 inches; black (N 2.5/0) silty clay loam, very dark gray (10YR 3/1) dry; weak medium and coarse granular structure; friable; common very fine and fine roots; 2 percent gravel; neutral; gradual wavy boundary.

A1—6 to 11 inches; black (N 2.5/0) silty clay loam, very dark gray (10YR 3/1) dry; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; 2 percent gravel; neutral; gradual wavy boundary.

A2—11 to 16 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium subangular blocky structure; friable; common very fine and fine roots; few fine prominent olive yellow (2.5Y 6/6) weakly cemented iron and manganese oxide nodules throughout; 5 percent gravel; slightly alkaline; gradual smooth boundary.

Bg—16 to 20 inches; dark grayish brown (2.5Y 4/2) loam; moderate medium subangular blocky structure; friable; common prominent black (10YR 2/1) organic coatings on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) weakly cemented iron and manganese oxide nodules throughout; 5 percent gravel; slightly alkaline; gradual wavy boundary.

BCg—20 to 24 inches; 60 percent dark gray (2.5Y 4/1) and 40 percent dark grayish brown (2.5Y 4/2) loam; weak medium and coarse subangular blocky structure; friable; common distinct black (10YR 2/1) organic coatings on vertical faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron and manganese in the matrix; common medium distinct pale yellow (2.5Y 7/3) carbonate concretions throughout; 9 percent gravel; very slightly effervescent; moderately alkaline; clear smooth boundary.

2Cg—24 to 60 inches; dark gray (2.5Y 4/1) gravelly loamy sand with a few strata of gravelly sandy loam; single grain; loose; common coarse distinct pale yellow (2.5Y 7/3) carbonate concretions throughout; 30 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Depth to sandy and gravelly glaciofluvial deposits: 20 to 40 inches

Depth to carbonates: 20 to 40 inches

Thickness of the solum: 24 to 40 inches

Ap and A horizons:

Hue—10YR, 2.5Y, or neutral

Value—2 or 3

Chroma—0 to 2

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

Bg and BCg horizons:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—3 to 6

Chroma—0 to 2

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

Content of gravel—less than 15 percent

2Cg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—4 to 6

Chroma—0 to 8

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 silty clay loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on landform: Toeslopes

Map Unit Composition

Will and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:

- Soils that have sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils with no subsurface layer
- Soils that have less sand and more clay in the upper one-half of the profile

Dissimilar soils:

- The somewhat poorly drained Kane soils on summits and footslopes
- The very poorly drained, organic Houghton soils on toeslopes

Properties and Qualities of the Will 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: 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 5.7 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: Within a depth of
1.0 foot, Jan-May

Ponding: 0.5 foot above the surface during wet periods

Flooding: None

Accelerated erosion: Negligible

Potential for frost action: High

Corrosivity: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Slight

Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Will—2w

Prime farmland status: Will—prime farmland where
drained

Hydric soil status: Will—hydric

Use and Management of the Soils

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

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

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

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

Contractors can use this survey to locate sources of sand, gravel, 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. Many of the tables identify the limitations that affect specified

uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *well suited*, *moderately suited*, *poorly suited*, and *unsuited* or as *good*, *fair*, and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

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

In 2002, Will County had 250,590 acres of cropland (USDA, Farm Service Agency, 2002). The major row crops are corn and soybeans. The major small grain crop is wheat. Alfalfa is the major forage crop. Some areas are used for vegetable or nursery crops.

The soils in Will 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 approximately 56 percent of the cropland in the county. Erosion can be a problem on soils with slopes of more than 2 percent, such as Beecher, Elliott, and Frankfort soils. It also is a hazard in areas where slopes are less than 2 percent but 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 intake. 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 water quality 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. These 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 Jasper and Varna soils. Another cultural practice is a crop rotation that includes 1 or more years of close-growing grasses or legumes. If slopes are smooth and uniform, terraces and contour farming also are effective in controlling erosion.

Structural practices are needed in drainageways where concentrated runoff flows overland. Establishing grassed waterways or constructing erosion-control structures reduces the hazard of erosion.

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 amount of runoff, and the rate of water infiltration. Soils that have good tilth are granular and porous and have a high content of organic matter.

Poor tilth is a problem on soils that have a surface layer of silty clay loam or silty clay. If such soils as Ashkum, Bryce, and Pella soils are plowed when wet, their 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 work well on these soils.

Crusting can be a problem in areas of Camden and Nappanee soils, which have a surface layer of silt loam that is low in content of organic matter. Generally, the structure of these soils is weak, and a crust forms on the surface during periods of intense rainfall. This crust is hard when dry. It inhibits seedling emergence, reduces the 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.

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 in the county. Measures that maintain the drainage system are needed. A subsurface drainage system has been installed in poorly drained soils, such as Drummer, Elpaso, and Selma soils. Some areas of poorly drained and very poorly drained soils, such as Bryce, Peotone, and Rantoul soils, require surface tile inlets or shallow surface ditches to remove excess water. In some areas 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 the somewhat poorly drained Blount, Elliott, and Swygert soils.

Contamination of ground water is a hazard in areas of excessively permeable soils, such as Waupecan and Dresden soils. These soils have sandy and gravelly deposits within a depth of 60 inches and are very rapidly permeable in the lower part.

Several measures help to prevent deep leaching of nutrients and pesticides. Applications of fertilizer should be based on the results of soil tests. The local office of the Cooperative Extension Service can help in determining the kinds and amounts of nutrients

needed. Chemicals should be selected on the basis of their solubility in water, their ability to bind with the soil, and the rate of their breakdown in the soil. Splitting chemical applications, particularly nitrogen, is beneficial. This practice reduces the chance for excessive leaching, which can result from a one-time application. Another measure is planting legumes in a crop rotation or as a cover crop. The legumes add nitrogen to the soil, thereby reducing the amount of nitrogen needed in chemical applications. Crop rotations are effective in limiting the buildup of weed and insect populations. Limiting this buildup, in turn, reduces the amount of herbicides and insecticides needed per application. Growing small grain cover crops after fertilized corn is grown can be effective in taking up some residual nitrogen from the soil.

Restricted permeability can increase the susceptibility of a soil to erosion. As water movement slows within a soil, the hazard of runoff increases. The slowly permeable Frankfort soils are more susceptible to erosion than the moderately permeable Jasper soils. The effect that restricted permeability has on the erosion hazard can be reduced by applying a cropping system that leaves crop residue on the surface after planting, by incorporating green manure crops or crop residue into the soil, and by using conservation cropping systems.

Restricted permeability can limit the effectiveness of drainage systems. To be effective in lowering the seasonal high water table, tile must be more closely spaced in the slowly permeable Elliott soils than in the moderately permeable Brenton soils.

A root-restrictive layer limits the available water capacity of soils. Frankfort, Varna, and Swygart soils are moderately deep to layers that restrict the penetration of plant roots. Increasing the rate of water infiltration, reducing the runoff rate, or planting drought-tolerant species can minimize the effect of this limitation. 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 and reduce the runoff rate. Planting drought-tolerant species, such as soybeans and winter wheat, is beneficial because these crops make the most efficient use of the limited amount of water.

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 to 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 soils, such as Graymont and Symerton 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 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. Deferred 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.

Management Considerations on Cropland

The management concerns affecting the use of the soils in Will County for crops and pasture are shown in the table 6. The main concerns in managing nonirrigated cropland are water erosion, crusting, poor tilth, wetness, ponding, excessive permeability, restricted permeability, depth to bedrock, and a root-restrictive layer. Excess lime, flooding, a limited available water capacity, and wind erosion are additional management concerns.

Generally, a combination of several practices is needed to control *water erosion*. Conservation tillage, strip cropping, field windbreaks, contour farming, conservation cropping systems, crop residue management, terraces, diversions, grassed filter strips, and grassed waterways help to prevent excessive soil loss.

Measures that minimize *crusting* and improve *poor tilth* include incorporating green manure crops, manure, or crop residue into the soil and applying a system of conservation tillage. Avoiding tillage when the soil is too wet can minimize surface cloddiness.

In some areas of cropland, *wetness* is a limitation and *ponding* is a hazard. Drainage systems consist of

subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these. Measures that maintain the drainage system are needed.

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.

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 and by applying conservation tillage and conservation cropping systems. Narrowing the spacing of tile improves the ability of the drainage system to lower the seasonal high water table.

Bedrock within a depth of 10 inches can limit the rooting depth and the amount of available moisture in the soil. This limitation cannot be easily overcome. Applying conservation tillage and conservation cropping systems and leaving crop residue on the surface conserve moisture.

A *root-restrictive layer* in a soil limits the total amount of water available to plants. 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 and reduce the runoff rate. Also, planting drought-tolerant crop species makes the most efficient use of the limited supply of available water in the soil.

Excess lime can be overcome by incorporating green manure crops, manure, or crop residue into the soil and by applying 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.

Flooding cannot be easily overcome. Winter small grains can be damaged by floodwater. Tilling and planting should be delayed in the spring until flooding is no longer a hazard. Dikes and diversions can reduce the extent of the crop damage caused by floodwater.

The effects of a *limited available water capacity* can be minimized by reducing the evaporation and runoff rates and increasing the water intake rate. 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 keeping the surface rough.

Explanation of Criteria

Crusting.—In the surface layer, the average content of organic matter is 2.5 percent or less and the content of clay is between 20 and 35 percent.

Depth to bedrock.—Bedrock is within 10 inches of the surface.

Excess lime.—A calcium carbonate equivalent of 15 percent or more is within a depth of 16 inches.

Excessive permeability.—The lower limit of the permeability rate is 6.0 or more inches per hour within the soil profile.

Flooding.—The soil is occasionally flooded or frequently flooded.

Limited available water capacity.—The weighted average of the available water capacity between depths of 0 and 40 inches is 0.1 inch or less.

Ponding.—The seasonal high water table is above the surface.

Poor tilth.—The content of clay in the surface layer is 27 percent or more.

Water erosion.—The Kw factor of the surface layer multiplied by the slope is more than 0.8, and the slope is 3 percent or more.

Wetness.—The seasonal high water table is within a depth of 1.5 feet.

Management Considerations on Pasture

The management concerns affecting the use of the soils in the county for pasture are shown in the table 6. The main management concerns are frost heave, water erosion, wetness, ponding, low pH, a root-restrictive layer, a limited available water capacity, an equipment limitation, flooding, wind erosion, depth to bedrock, excess lime, low fertility, and rock fragments on the surface.

Frost heave is a limitation in soils that 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 with a low content of sand have small pores that hold water and enable ice lenses to form. Selecting adapted forage and hay varieties helps to reduce 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.

Water erosion is a hazard in pastured areas where the value of the Kw factor multiplied by 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. Overgrazing or grazing when the soil is wet reduces the extent of the plant cover, results in surface compaction and poor tilth, and thus increases the susceptibility to erosion. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition. Properly locating livestock watering facilities helps to prevent surface compaction or the formation of ruts by making it unnecessary for cattle to travel long distances up and down the steeper slopes.

Wetness and *ponding* are management concerns in some areas of pasture or hayland. Wetness occurs when the seasonal high water table is within 1.5 feet of the surface, 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.

Soils that have *low pH* or low reaction have a pH value of 5.5 or less within 40 inches of the surface. Low pH inhibits the uptake of certain nutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of 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.

Soils that have a *root-restrictive layer* have a dense layer of till within 40 inches of the surface. 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.

Limited available water capacity occurs in areas

where the weighted average of the available water capacity between depths of 0 and 40 inches is 0.1 inch or less. Available water capacity refers to the capacity of soils to hold water available for use by most plants. The quality and quantity of the pasture 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.

An *equipment limitation* occurs in areas where slopes are more than 10 percent. It can cause rapid wear of equipment and can hinder fertilization, harvest, pasture renovation, and seedbed preparation. This limitation cannot be easily overcome.

Frequent *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.

Organic and sandy soils that have a wind erodibility group (WEG) of 1 or 2 are susceptible to *wind erosion*. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, 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.

Soils in which the *depth to bedrock* is 30 inches or less have a restricted root zone and a limited amount of available moisture. Planting adapted forage and hay varieties minimizes 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.

Excess lime occurs in soils that have a calcium carbonate equivalent of 15 percent or more within 16 inches of the surface. The high pH associated with this limitation 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 help to lower the pH. Selecting species of grasses and legumes that are tolerant of high pH improves forage production.

Low fertility occurs in areas where the average content of organic matter in the surface layer is less than 1 percent 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.

In areas where *rock fragments* cover more than 15 percent of the surface, seedbed preparation and renovation may be hindered. This limitation causes rapid wear of tillage equipment. It cannot be easily overcome. The cobbles and stones can be removed or piled in a corner of the field.

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 (Fehrenbacher and others, 1978).

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared

with that of other soils, however, is not likely to change.

Crops other than those shown in 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 of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Pasture and Hay Yields

Soils are assigned to pasture and hayland groups according to their suitability for the production of forage. The soils in each group are similar enough to be suited to the same species of grasses or legumes, have similar limitations and hazards, require similar management, and have similar productivity levels and other responses to management.

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps the plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often given in animal unit months (AUMs), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields other than those shown in table 7.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops, including corn, small grain, and hay. 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 woodland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit

(USDA, 1961). Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have 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, wildlife habitat, or recreation.

The capability classification of map units in this survey area is given in the section "Soil Series and Detailed Soil Map Units" and in table 7.

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.

In the last two decades, a trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

About 404,640 acres, or nearly 75 percent of the county, meets the requirements for prime farmland.

The map units in the county 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 and

wetness, 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. 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 each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field

Indicators of Hydric Soils in the United States" (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are made up mainly of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up mainly of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Table 9 indicates the hydric and nonhydric soils identified in the names of the detailed map units in the county. The table also identifies the included soils that are considered hydric. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

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. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

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 trees perform on such land can be gained only by observing and recording the performance 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 the 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 various soils. The estimates in table 10 are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

Forestland

Paul M. Deizman, district forester, Illinois Department of Natural Resources, helped prepare this section.

Forest once covered nearly 13 percent of the land in Will County. Little of the presettlement forestland has been untouched or properly managed. Presently, about 30,000 acres, or 5.5 percent of the total land area in the county, is forested. An 9,200 additional acres, or about 2 percent of the total land area, is considered new tree-covered land or brushland.

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 10 percent of the present forestland is under proper timber management. Areas of grazed forestland are slowly recovering but may require many decades or a full forest generation in order to become productive without management.

The principal forest types in Will County are oak-hickory (12,000 acres), maple-beech (11,500 acres), elm-ash-soft maple (4,800 acres), and cottonwood (1,000 acres). At least 88 different tree species and 92 shrub species are evident in the county.

Two sawmills operate within the borders of Will County. The number of sawmills has been gradually declining. The sawmills in and around the county borders adequately meet the local needs for custom

sawing. Nearly a dozen small, portable mills are in the county or serve county landowners. The current hardwood markets are globally oriented. Any owner with quality forest products has reasonable access to commercial markets through interested buyers, forest operators, State foresters, and forestry consultants within this part of the Midwest. The demand for standing timber from Will County is moderate. At last count, 38 firms, employing nearly 19,000 individuals, manufacture or use wood products and paper products in Will County. These include primarily millwork, container and pallet, building material, furniture, and paper firms.

Will County has tremendous potential for establishing additional productive forestland. The highly erodible land (HEL) in the county includes nearly 43,100 acres that would be especially well suited to hardwood forest. Forestry in Will County not only is potentially profitable but also serves to enhance watershed quality, recreational uses, and wildlife habitat. Interest in forest management and establishment in the county is moderate. The average forest holding per landowner is 12.9 acres. Even parcels as small as 5 acres can be effectively managed for both timber production and multiple-resource conservation.

Assistance in establishing, improving, or managing forestland is available from foresters or natural resource specialists.

Forest Management

Information about the hazards and limitations that should be considered in areas used as forestland is given in tables 11, 12, 13, and 14.

Features Affecting Use of Tree-Harvesting Equipment

Table 11 provides information regarding the use of tree-harvesting equipment. On most soils spring is the most limiting season because of alternate thawing and freezing during periods of snowmelt. The freezing and thawing result in saturation and low strength in 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 depressional soils. The degree of wetness generally is determined by depth to the water table and the length of the period when the water table is high. The water table generally is lower in summer, when soil moisture is heavily used by vegetation, and is closer to the surface during periods when absorbed precipitation is greater than the vegetative requirements. Harvesting

during periods of saturation usually results in severe soil damage, except when the soil is frozen. The preferred season for timber harvesting on many soils is winter, when wetness and low soil strength can be overcome by freezing.

The features shown in table 11 are as follows:

Slope.—The upper slope limit 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 seasonal high water table (any drainage class).

Depth to hard bedrock.—The depth to hard bedrock is less than 10 inches.

Susceptibility 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.

Features Affecting Forest Haul Roads

Table 12 provides information regarding the use of the soils as haul roads. Haul roads serve as transportation routes from log landings to primary roads. Generally, the haul roads are unpaved, but some are graveled.

The features shown in table 12 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 seasonal high water table (any drainage class).

Depth to hard bedrock.—The depth to hard bedrock is less than 20 inches.

Low bearing strength.—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

Features Affecting Log Landings

Table 13 provides information regarding the use of the soils as 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.

The features shown in table 13 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 seasonal high water table (any drainage class).

Susceptibility 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.

Features Affecting Site Preparation and Planting

Table 14 shows the hazards and limitations affecting site preparation and tree planting.

The features shown table 14 are as follows:

Slope.—The upper slope limit 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 seasonal high water table (any drainage class).

Depth to hard bedrock.—The depth to hard bedrock is less than 20 inches.

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.

Forest Productivity

In table 15, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

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

Recreation

Will County has a wide variety of recreational areas, including the Midewin National Tall Grass Prairie, the Des Plaines Conservation Area, Kankakee River State Park, the Illinois and Michigan Canal Corridor (fig. 7),



Figure 7.—The Channahon lock house on the historic Illinois and Michigan Canal. The Illinois and Michigan Canal Corridor is now used for recreational purposes, such as hiking, biking, and boating.

and several county-owned forest preserves. An assortment of outdoor activities is available to the public, including boating, fishing, hiking, biking, horseback riding, camping, and picnicking. Also, most municipalities offer a variety of recreational facilities, such as playgrounds, swimming pools, and golf courses. Several private recreational facilities and sportsmen's clubs are in areas of mine spoil, where numerous lakes have been created.

The soils of the survey area are rated in tables 16a and 16b 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 16a and 16b 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, Will 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.

The upland areas, which range from steep to gently sloping hillsides and ridges to nearly level 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, conversion of land for agriculture and urbanization altered these natural communities and the wildlife populations associated with them. The landscape in Will 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 months 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.

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 17, 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 brome grass, 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, blackberry, ragweed, wheatgrass, and nightshade.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, boxelder, birch, maple, green ash, willow, and American elm. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are 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, 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, cordgrass,

rushes, sedges, wild rice, arrowhead, waterplantain, cattail, 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 waterfowl feeding areas, wildlife watering developments, marshes, and 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, tree squirrels, raccoon, and white-tailed deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas (fig. 8). Some of the wildlife attracted to such areas are ducks, geese, herons, bitterns, rails, kingfishers, muskrat, otter, mink, beaver, 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, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

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



Figure 8.—A pothole of Houghton muck, undrained, 0 to 2 percent slopes. This soil provides good habitat for a wide a variety of wetland wildlife species.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 18a and 18b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special

planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration,

whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 19a and 19b 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 20a and 20b 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.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 20a, 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.

The soils are rated *good*, *fair*, or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, or topsoil. 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 21a and 21b give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; grassed waterways and surface drains; terraces and diversions; tile drains and underground outlets; and sprinkler irrigation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be

overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

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 table 21a, 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.

Grassed waterways and surface drains are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Tile drains and underground outlets remove excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur.

Sprinkler irrigation is the controlled application of

water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Waste Management

Soil properties are important when organic waste is applied as fertilizer and wastewater is applied in irrigated areas. They also are important when the soil is used as a medium for the treatment and disposal of the organic waste and wastewater. Unfavorable soil properties can result in environmental damage.

The use of organic waste and wastewater as production resources results in energy and resource conservation and minimizes the problems associated with waste disposal. If disposal is the goal, applying a maximum amount of the organic waste or the wastewater to a minimal area holds costs to a minimum and environmental damage is the main hazard. If reuse is the goal, a minimum amount should be applied to a maximum area and environmental damage is unlikely.

Interpretations developed for waste management may include ratings for manure, food-processing waste, municipal sewage sludge, use of wastewater for irrigation, and treatment of wastewater by slow rate, overland flow, and rapid infiltration processes.

Specific information regarding waste management is available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 22 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. 9). "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

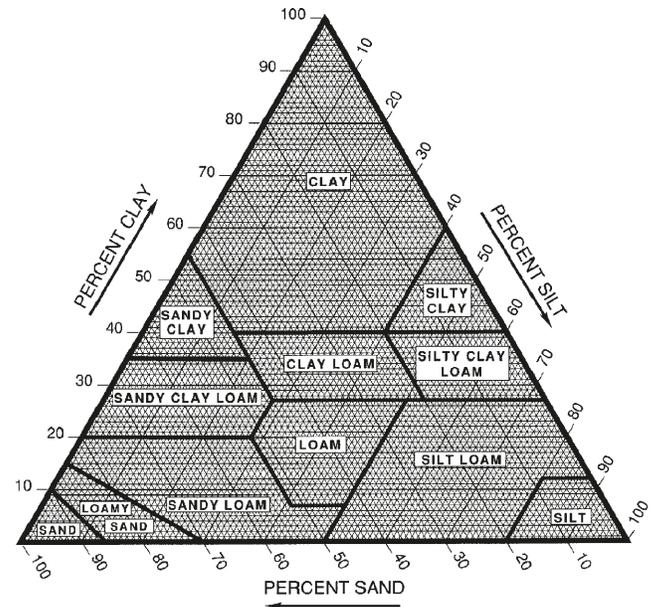


Figure 9.—Percentages of clay, silt, and sand in the basic USDA soil texture classes.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an 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 23 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.

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 major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine 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 earth-moving 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 table 23, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in table 23 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 table 23 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 23, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 23 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 several 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" (USDA, NRCS).

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 24 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.

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.

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.

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 25 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist

mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

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

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

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

The *months* in table 25 indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 25 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

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 25 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short

periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 26 gives estimates of 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 and thickness of the restrictive layer, both of which significantly affect 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

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

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

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In

profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on the contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bog. Waterlogged, spongy ground consisting primarily of mosses and supporting acidic, decaying vegetation (such as sphagnum, sedges, and heaths) that develops into peat.

Bottom land. The normal flood plain of a stream, subject to flooding.

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 but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil. A soil that is, by volume, more than 15 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches 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. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the

surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

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.

Closed depression. A low area completely surrounded by higher ground and having no natural outlet.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobby 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 cobby soil material has 35 to 60 percent of these rock fragments, and extremely cobby soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

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. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system

include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping (or contour farming).

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). Fecal material deposited in water by aquatic organisms.

Cord. A unit of measurement of stacked wood. A standard cord is 128 cubic feet with dimensions of 4 feet by 4 feet by 8 feet.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

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.

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. A relatively sunken, low area surrounded by higher ground. Unlike an open depression, a closed depression has no natural outlet for surface water.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A relatively small, linear depression that at some time moves concentrated water and either has no defined channel or has a small defined channel.

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.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another

within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

- End moraine.** A ridgelike accumulation produced at the outer margin of an actively flowing glacier at any given time.
- Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
- Eolian soil material.** Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.
- Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.
- Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.
- Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.
- Erosion pavement.** A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.
- Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.
- Fan terrace.** A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.
- 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*.
- 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 fire fighters and equipment. Designated roads also serve as firebreaks.
- First bottom.** The normal flood plain of a stream, subject to frequent or occasional flooding.
- Flaggy soil material.** Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is 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.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.
- Footslope.** The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).
- Forb.** Any herbaceous plant not a grass or a sedge.
- Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.
- Forest habitat type.** An association of dominant tree and ground flora species in a climax community.
- Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.
- Frost action (in tables).** Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.
- Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.
- Geomorphology.** The science that treats the general configuration of the earth's surface; specifically, the study of the classification, description, nature,

origin, and development of landforms and their relationships to underlying structures and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.

- Glacial drift.** Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.
- Glacial outwash.** Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.
- Glaciofluvial deposits.** Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.
- Glaciolacustrine deposits.** Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.
- Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.
- Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.
- Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.
- Gravelly soil material.** Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.
- Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.
- Ground moraine.** An extensive, fairly even layer of till having an uneven or undulating surface; a deposit of rock and mineral debris dragged along in, on, or beneath a glacier.
- Ground water.** Water filling all the unblocked pores of the material below the water table.
- Gully.** A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.
- 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.** 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 a 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 natural elevation 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; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.
- Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:
- O horizon.*—An organic layer of fresh and decaying plant residue.
- A horizon.*—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.
- E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
- B horizon.*—The mineral horizon below an A

horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluv. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron concentrations. High-chroma zones having a high content of iron and manganese oxide because of chemical oxidation and accumulation, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic concentration.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Krotovinas. Irregular, tubular streaks in a soil horizon that are created when tunnels made by a burrowing animal are filled with material from another horizon.

K_{sat} . 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.

Lakebed. 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.

Lamella. A thin (commonly less than 1 centimeter thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).

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

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

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 amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat. Unconsolidated soil material consisting primarily of organic matter that is at an intermediate stage of decomposition (a significant part of the material can be recognized, and a significant part 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.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Parts per million (ppm). The concentration of a substance in the soil, such as phosphorus or potassium, in one million parts of air-dried soil on a weight per weight basis.

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 thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

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.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poletimber. Hardwood trees ranging from 5 to 11 inches and conifers ranging from 5 to 9 inches in diameter at breast height.

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.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated,

weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Rise. A slight increase in elevation of the land surface, typically with a broad summit and gently sloping sides.

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.

Rock outcrop. Exposures of bare bedrock other than rock-lined pits.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

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.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

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.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief

kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seedling. A tree less than 1 inch in diameter at breast height.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average

height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

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.

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 over periods of time.

Soil quality. The fitness of a specific kind of soil to function within its surroundings, support plant and animal life, maintain or enhance water and air quality, and support human health and habitation.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies

material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Steam terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It is originally formed near the level of the stream and consists of the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsidence. The potential decrease in surface elevation caused by the drainage of wet soils that have organic layers or semifluid, mineral layers. Subsidence is attributed to (1) shrinkage as the material dries, (2) consolidation resulting from the loss of ground-water buoyancy, (3) compaction resulting 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.
- 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. On an undulating ground moraine, a shallow depression 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.** A belt of thick glacial drift that generally marks the termination of important glacial advances.
- Terrace.** An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.
- Terrace (geologic).** An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.
- Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”
- Thin layer (in tables).** Otherwise suitable soil material that is too thin for the specified use.
- Till.** Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.
- Till plain.** An extensive area of nearly level to undulating soils underlain by glacial till.
- Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
- Toeslope.** The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.
- Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.
- Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- Understory.** Any plants in a forest community that grow to a height of less than 5 feet.
- Upland (geology).** Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.
- Variation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.
- Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.
- Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.
- Wilting point (or permanent wilting point).** The moisture content of soil, on an 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.

Tables

Table 1.--Temperature and Precipitation
(Recorded in the period 1971-2000 at Joliet, Illinois)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	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-----	29.6	13.2	21.4	56	-17	0	1.58	0.65	2.52	4	4.7
February-----	35.5	18.6	27.1	64	-11	1	1.64	.77	2.41	4	2.2
March-----	47.0	28.5	37.7	78	6	26	2.46	1.14	3.72	5	.6
April-----	59.7	38.6	49.2	86	20	102	3.75	1.99	5.44	7	.0
May-----	71.6	48.9	60.2	91	32	328	3.85	2.12	5.47	7	.0
June-----	81.3	58.7	70.0	97	42	602	4.25	1.96	6.37	7	.0
July-----	84.7	63.7	74.2	99	51	752	4.34	1.87	6.69	6	.0
August-----	82.4	61.6	72.0	95	48	681	3.74	1.77	5.57	5	.0
September---	76.0	53.4	64.7	93	36	441	3.11	1.37	4.66	5	.0
October-----	63.8	41.4	52.6	85	24	148	2.69	1.35	3.83	5	.0
November----	48.5	31.3	39.9	74	10	29	3.00	1.36	4.41	6	.0
December----	35.1	19.3	27.2	61	-9	4	2.43	1.18	3.58	5	2.7
Yearly:											
Average---	59.6	39.8	49.7	---	---	---	---	---	---	---	---
Extreme---	104	-26	---	100	-18	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,114	36.84	30.26	42.16	66	10.2

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

Table 2.--Freeze Dates in Spring and Fall
(Recorded in the period 1971-2000 at Joliet, Illinois)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than-----	April 10	April 18	May 7
2 years in 10 later than-----	April 5	April 15	May 2
5 years in 10 later than-----	March 26	April 8	April 21
First freezing temperature in fall:			
1 year in 10 earlier than---	Oct. 24	Oct. 19	Oct. 3
2 years in 10 earlier than---	Oct. 29	Oct. 23	Oct. 8
5 years in 10 earlier than---	Nov. 8	Nov. 1	Oct. 17

Table 3.--Growing Season
(Recorded in the period 1971-2000 at Joliet, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	<i>Days</i>	<i>Days</i>	<i>Days</i>
9 years in 10	206	193	151
8 years in 10	213	197	160
5 years in 10	226	206	178
2 years in 10	240	215	195
1 year in 10	247	220	204

Table 4.--Classification of the Soils

(An asterisk in the first column indicates that the soils in some or all map units are taxadjuncts 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
Ade-----	Coarse-loamy, mixed, superactive, mesic Lamellic Argiudolls
Andres-----	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Ashkum-----	Fine, mixed, superactive, mesic Typic Endoaquolls
Beecher-----	Fine, illitic, mesic Udollic Epiaqualfs
Blount-----	Fine, illitic, mesic Aeric Epiaqualfs
Bowes-----	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Braidwood-----	Coarse-loamy, mixed, subactive, calcareous, mesic Typic Udorthents
Brenton-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Bryce-----	Fine, mixed, superactive, mesic Vertic Endoaquolls
Camden-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Casco-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Inceptic Hapludalfs
Channahon-----	Loamy, mixed, superactive, mesic Lithic Argiudolls
Chatsworth-----	Fine, illitic, mesic Oxyaquic Eutrudepts
Chenoa-----	Fine, illitic, mesic Aquic Argiudolls
Darroch-----	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Dresden-----	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs
Drummer-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Du Page-----	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
Dunham-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Elizabeth-----	Loamy-skeletal, mixed, superactive, mesic Lithic Hapludolls
*Elliott-----	Fine, illitic, mesic Aquic Argiudolls
Elpaso-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Fieldon-----	Coarse-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls
Fox-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs
Frankfort-----	Fine, illitic, mesic Udollic Epiaqualfs
Gilford-----	Coarse-loamy, mixed, superactive, mesic Typic Endoaquolls
Granby-----	Sandy, mixed, mesic Typic Endoaquolls
*Graymont-----	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Grundelein-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Harpster-----	Fine-silty, mixed, superactive, mesic Typic Calcicquolls
Houghton-----	Euic, mesic Typic Haplosaprists
*Jasper-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Joliet-----	Loamy, mixed, superactive, mesic Lithic Endoaquolls
Kane-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Aquic Argiudolls
Kankakee-----	Loamy-skeletal, mixed, superactive, mesic Typic Hapludolls
La Hogue-----	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Lawson-----	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Lorenzo-----	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Typic Argiudolls
Markham-----	Fine, illitic, mesic Oxyaquic Hapludalfs
Martinsville-----	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Martinton-----	Fine, illitic, mesic Aquic Argiudolls
Milford-----	Fine, mixed, superactive, mesic Typic Endoaquolls
Millbrook-----	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Millington-----	Fine-loamy, mixed, superactive, calcareous, mesic Cumulic Endoaquolls
Millsdale-----	Fine, mixed, active, mesic Typic Argiaquolls
Mokena-----	Fine-loamy, mixed, active, mesic Aquic Argiudolls
Muskego-----	Coprogenous, euic, mesic Limnic Haplosaprists
Nappanee-----	Fine, illitic, mesic Aeric Epiaqualfs
Oakville-----	Mixed, mesic Typic Udipsammments
Ockley-----	Fine-loamy, mixed, active, mesic Typic Hapludalfs
*Onarga-----	Coarse-loamy, mixed, superactive, mesic Typic Argiudolls
Orthents, clayey	Fine, mixed, active, nonacid, mesic Aquic Udorthents
Orthents, loamy--	Fine-loamy, mixed, active, nonacid, mesic Oxyaquic Udorthents
Ozaukee-----	Fine, illitic, mesic Oxyaquic Hapludalfs
Pella-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Peotone-----	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
*Plattville-----	Fine-loamy, mixed, active, mesic Mollic Hapludalfs
Rantoul-----	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
Reddick-----	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
Ridgeville-----	Coarse-loamy, mixed, superactive, mesic Aquic Argiudolls

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Ritchey-----	Loamy, mixed, superactive, mesic Lithic Hapludalfs
Roby-----	Coarse-loamy, mixed, superactive, mesic Aquic Hapludalfs
Rodman-----	Sandy-skeletal, mixed, mesic Typic Hapludolls
Romeo-----	Loamy, mixed, superactive, mesic Lithic Endoaquolls
Sawmill-----	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Selma-----	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
Sparta-----	Sandy, mixed, mesic Entic Hapludolls
St. Clair-----	Fine, illitic, mesic Oxyaquic Hapludalfs
Starks-----	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
*Swygert-----	Fine, mixed, active, mesic Aquic Argiudolls
*Symerton-----	Fine-loamy, mixed, active, mesic Oxyaquic Argiudolls
Thorp-----	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Troxel-----	Fine-silty, mixed, superactive, mesic Pachic Argiudolls
*Varna-----	Fine, illitic, mesic Oxyaquic Argiudolls
*Warsaw-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls
Watseka-----	Sandy, mixed, mesic Aquic Hapludolls
Waupecan-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Will-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Endoaquolls

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
23A	Blount silt loam, 0 to 2 percent slopes-----	988	0.2
23B	Blount silt loam, 2 to 4 percent slopes-----	12,492	2.3
49A	Watseka loamy fine sand, 0 to 2 percent slopes-----	5,153	0.9
67A	Harpster silty clay loam, 0 to 2 percent slopes-----	899	0.2
69A	Milford silty clay loam, 0 to 2 percent slopes-----	818	0.2
88D	Sparta loamy fine sand, 6 to 12 percent slopes-----	70	*
91A	Swygert silty clay loam, 0 to 2 percent slopes-----	8	*
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded-----	619	0.1
91C2	Swygert silty clay loam, 4 to 6 percent slopes, eroded-----	412	*
93C2	Rodman gravelly loam, 4 to 6 percent slopes, eroded-----	663	0.1
93D2	Rodman gravelly loam, 6 to 12 percent slopes, eroded-----	455	*
98B	Ade loamy fine sand, 1 to 6 percent slopes-----	2,507	0.5
102A	La Hogue loam, 0 to 2 percent slopes-----	2,789	0.5
103A	Houghton muck, 0 to 2 percent slopes-----	1,572	0.3
125A	Selma loam, 0 to 2 percent slopes-----	581	0.1
132A	Starks silt loam, 0 to 2 percent slopes-----	697	0.1
134A	Camden silt loam, 0 to 2 percent slopes-----	60	*
134B	Camden silt loam, 2 to 5 percent slopes-----	811	0.1
134C2	Camden silt loam, 5 to 10 percent slopes, eroded-----	258	*
146A	Elliott silt loam, 0 to 2 percent slopes-----	11,650	2.1
146B	Elliott silt loam, 2 to 4 percent slopes-----	72,025	13.2
146B2	Elliott silty clay loam, 2 to 4 percent slopes, eroded-----	5,893	1.1
149A	Brenton silt loam, 0 to 2 percent slopes-----	3,227	0.6
150B	Onarga fine sandy loam, 2 to 5 percent slopes-----	1,077	0.2
150C2	Onarga fine sandy loam 5 to 10 percent slopes, eroded-----	179	*
151A	Ridgeville fine sandy loam, 0 to 2 percent slopes-----	2,543	0.5
152A	Drummer silty clay loam, 0 to 2 percent slopes-----	6,399	1.2
153A	Pella silty clay loam, 0 to 2 percent slopes-----	8,626	1.6
184A	Roby fine sandy loam, 0 to 2 percent slopes-----	788	0.1
189A	Martinton silt loam, 0 to 2 percent slopes-----	333	*
197A	Troxel silt loam, 0 to 2 percent slopes-----	1,335	0.2
201A	Gilford fine sandy loam, 0 to 2 percent slopes-----	3,146	0.6
206A	Thorp silt loam, 0 to 2 percent slopes-----	120	*
219A	Millbrook silt loam, 0 to 2 percent slopes-----	526	*
223B	Varna silt loam, 2 to 4 percent slopes-----	150	*
223C2	Varna silt loam, 4 to 6 percent slopes, eroded-----	18,295	3.4
223D2	Varna silt loam, 6 to 12 percent slopes, eroded-----	1,065	0.2
228B	Nappanee silt loam, 2 to 4 percent slopes-----	468	*
228C2	Nappanee silty clay loam, 4 to 6 percent slopes, eroded-----	721	0.1
232A	Ashkum silty clay loam, 0 to 2 percent slopes-----	84,375	15.5
235A	Bryce silty clay, 0 to 2 percent slopes-----	8,429	1.6
238A	Rantoul silty clay, 0 to 2 percent slopes-----	254	*
240C2	Plattville silt loam, 4 to 6 percent slopes, eroded-----	109	*
241C3	Chatsworth silty clay, 4 to 6 percent slopes, severely eroded-----	60	*
241D3	Chatsworth silty clay, 6 to 12 percent slopes, severely eroded-----	761	0.1
241E3	Chatsworth silty clay, 12 to 20 percent slopes, severely eroded-----	69	*
241F	Chatsworth silty clay loam, 20 to 30 percent slopes----- eroded-----	54	*
290A	Warsaw silt loam, 0 to 2 percent slopes-----	1,650	0.3
290B	Warsaw silt loam, 2 to 4 percent slopes-----	7,028	1.3
290C2	Warsaw silt loam, 4 to 6 percent slopes, eroded-----	1,770	0.3
293A	Andres silt loam, 0 to 2 percent slopes-----	2,894	0.5
293B	Andres silt loam, 2 to 5 percent slopes-----	1,059	0.2
294A	Symerton silt loam, 0 to 2 percent slopes-----	318	*
294B	Symerton silt loam, 2 to 5 percent slopes-----	6,883	1.3
294C2	Symerton silt loam, 5 to 10 percent slopes, eroded-----	935	0.2
295A	Mokena silt loam, 0 to 2 percent slopes-----	119	*
295B	Mokena silt loam, 2 to 4 percent slopes-----	535	*
298A	Beecher silt loam, 0 to 2 percent slopes-----	958	0.2
298B	Beecher silt loam, 2 to 4 percent slopes-----	28,718	5.3
298B2	Beecher silt loam, 2 to 4 percent slopes, eroded-----	2,262	0.4
311C	Ritchey silt loam, 4 to 6 percent slopes-----	85	*

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
311D	Ritchey silt loam, 6 to 12 percent slopes-----	154	*
314A	Joliet silt loam, 0 to 2 percent slopes-----	3,034	0.6
315A	Channahon silt loam, 0 to 2 percent slopes-----	1,454	0.3
315B	Channahon silt loam, 2 to 4 percent slopes-----	922	0.2
315C2	Channahon silt loam, 4 to 6 percent slopes, eroded-----	381	*
316A	Romeo silt loam, 0 to 2 percent slopes-----	5,112	0.9
317A	Millsdale silty clay loam, 0 to 2 percent slopes-----	1,916	0.4
318A	Lorenzo loam, 0 to 2 percent slopes-----	1,575	0.3
318B	Lorenzo loam, 2 to 4 percent slopes-----	2,657	0.5
318C2	Lorenzo loam, 4 to 6 percent slopes, eroded-----	986	0.2
318D2	Lorenzo loam, 6 to 12 percent slopes, eroded-----	429	*
320A	Frankfort silt loam, 0 to 2 percent slopes-----	824	0.2
320B	Frankfort silt loam, 2 to 4 percent slopes-----	8,519	1.6
320B2	Frankfort silty clay loam, 2 to 4 percent slopes, eroded-----	530	*
320C2	Frankfort silty clay loam, 4 to 6 percent slopes, eroded-----	7,195	1.3
325A	Dresden silt loam, 0 to 2 percent slopes-----	189	*
325B	Dresden silt loam, 2 to 4 percent slopes-----	710	0.1
325C2	Dresden silt loam, 4 to 6 percent slopes, eroded-----	27	*
327A	Fox silt loam, 0 to 2 percent slopes-----	359	*
327B	Fox silt loam, 2 to 4 percent slopes-----	1,246	0.2
327C2	Fox silt loam, 4 to 6 percent slopes, eroded-----	103	*
329A	Will silty clay loam, 0 to 2 percent slopes-----	2,548	0.5
330A	Peotone silty clay loam, 0 to 2 percent slopes-----	2,507	0.5
343A	Kane silt loam, 0 to 2 percent slopes-----	671	0.1
356A	Elpaso silty clay loam, 0 to 2 percent slopes-----	14,766	2.7
369A	Waupecan silt loam, 0 to 2 percent slopes-----	2,048	0.4
369B	Waupecan silt loam, 2 to 4 percent slopes-----	2,013	0.4
380A	Fieldon loam, 0 to 2 percent slopes-----	533	*
387B	Ockley loam, 2 to 4 percent slopes-----	887	0.2
403D	Elizabeth silt loam, 6 to 12 percent slopes-----	148	*
403E	Elizabeth silt loam, 12 to 20 percent slopes-----	301	*
403F	Elizabeth silt loam, 20 to 30 percent slopes-----	393	*
440A	Jasper loam, 0 to 2 percent slopes-----	499	*
440B	Jasper loam, 2 to 5 percent slopes-----	2,314	0.4
440C2	Jasper loam, 5 to 10 percent slopes, eroded-----	649	0.1
494B	Kankakee fine sandy loam, 2 to 4 percent slopes-----	1,310	0.2
513A	Granby fine sandy loam, 0 to 2 percent slopes-----	6,571	1.2
523A	Dunham silty clay loam, 0 to 2 percent slopes-----	7,978	1.5
526A	Grundelein silt loam, 0 to 2 percent slopes-----	2,625	0.5
530B	Ozaukee silt loam, 2 to 4 percent slopes-----	1,861	0.3
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded-----	16,599	3.1
530C3	Ozaukee silty clay loam, 4 to 6 percent slopes, severely eroded-----	842	0.2
530D2	Ozaukee silt loam, 6 to 12 percent slopes, eroded-----	8,007	1.5
530D3	Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded-----	2,946	0.5
530E2	Ozaukee silt loam, 12 to 20 percent slopes, eroded-----	3,259	0.6
530F	Ozaukee silt loam, 20 to 30 percent slopes-----	2,276	0.4
531B	Markham silt loam, 2 to 4 percent slopes-----	1,297	0.2
531C2	Markham silt loam, 4 to 6 percent slopes, eroded-----	22,030	4.1
531D2	Markham silt loam, 6 to 12 percent slopes, eroded-----	745	0.1
541A	Graymont silt loam, 0 to 2 percent slopes-----	515	*
541B	Graymont silt loam, 2 to 5 percent slopes-----	15,688	2.9
541C2	Graymont silt loam, 5 to 10 percent slopes, eroded-----	534	*
560D2	St. Clair silty clay loam, 6 to 12 percent slopes, eroded-----	163	*
560E	St. Clair silty clay loam, 12 to 20 percent slopes-----	34	*
570B	Martinsville loam, 2 to 4 percent slopes-----	1,650	0.3
570C2	Martinsville loam, 4 to 6 percent slopes, eroded-----	530	*
570D2	Martinsville loam, 6 to 12 percent slopes, eroded-----	304	*
570E2	Martinsville loam, 12 to 20 percent slopes, eroded-----	93	*
570F	Martinsville loam, 20 to 30 percent slopes-----	62	*
594A	Reddick clay loam, 0 to 2 percent slopes-----	48	*
614A	Chenoa silty clay loam, 0 to 2 percent slopes-----	7,445	1.4
614B	Chenoa silty clay loam, 2 to 5 percent slopes-----	446	*

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
688B	Braidwood loam, 1 to 7 percent slopes-----	1,225	0.2
688D	Braidwood loam, 7 to 20 percent slopes-----	602	0.1
688G	Braidwood loam, 20 to 70 percent slopes-----	3,210	0.6
719A	Symerton fine sandy loam, 0 to 2 percent slopes-----	141	*
719B	Symerton fine sandy loam, 2 to 5 percent slopes-----	190	*
719C2	Symerton fine sandy loam, 5 to 10 percent slopes, eroded-----	204	*
740A	Darroch silt loam, 0 to 2 percent slopes-----	131	*
741B	Oakville fine sand, 1 to 6 percent slopes-----	3,112	0.6
741D	Oakville fine sand, 6 to 12 percent slopes-----	1,230	0.2
741E	Oakville fine sand, 12 to 20 percent slopes-----	264	*
741F	Oakville fine sand, 20 to 30 percent slopes-----	104	*
792A	Bowes silt loam, 0 to 2 percent slopes-----	645	0.1
792B	Bowes silt loam, 2 to 4 percent slopes-----	371	*
802B	Orthents, loamy, undulating-----	7,191	1.3
802D	Orthents, loamy, rolling-----	672	0.1
805B	Orthents, clayey, undulating-----	728	0.1
830	Landfills-----	170	*
864	Pits, quarry-----	1,130	0.2
865	Pits, gravel-----	1,306	0.2
903A	Muskego and Houghton mucks, 0 to 2 percent slopes-----	23	*
969E2	Casco-Rodman complex, 12 to 20 percent slopes, eroded-----	203	*
969F	Casco-Rodman complex, 20 to 30 percent slopes-----	301	*
1067A	Harpster silty clay loam, undrained, 0 to 2 percent slopes-----	37	*
1082A	Millington silt loam, undrained, 0 to 2 percent slopes, frequently flooded-----	261	*
1103A	Houghton muck, undrained, 0 to 2 percent slopes-----	638	0.1
1201A	Gilford fine sandy loam, undrained, 0 to 2 percent slopes-----	179	*
1903A	Muskego and Houghton mucks, undrained, 0 to 2 percent slopes-----	2	*
3082A	Millington silt loam, 0 to 2 percent slopes, frequently flooded-----	482	*
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded-----	1,831	0.3
3314A	Joliet silt loam, 0 to 2 percent slopes, frequently flooded-----	492	*
3316A	Romeo silt loam, 0 to 2 percent slopes, frequently flooded-----	981	0.2
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded-----	575	0.1
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded-----	192	*
8321A	Du Page silt loam, 0 to 2 slopes, occasionally flooded-----	1,380	0.3
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded-----	5,669	1.0
W	Water-----	13,563	2.5
	Total-----	543,635	100.0

* Less than 0.1 percent.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture

(See text for a description of the limitations and hazards listed in this table. Miscellaneous map units and map units generally not available for crop or pasture production are excluded from the table. Absence of an entry indicates that the map unit is generally unsuited to crops or pasture.)

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
23A: Blount-----	Wetness, root-restrictive layer, crusting, restricted permeability	Wetness, root-restrictive layer
23B: Blount-----	Wetness, root-restrictive layer, crusting, water erosion, restricted permeability	Wetness, root-restrictive layer, water erosion
49A: Watseka-----	Wetness, wind erosion, limited available water capacity, excessive permeability	Wetness, wind erosion, limited available water capacity, excessive permeability
67A: Harpster-----	Ponding, poor tilth, excess lime	Ponding, excess lime, frost heave
69A: Milford-----	Ponding, poor tilth, restricted permeability	Ponding, frost heave
88D: Sparta-----	---	Wind erosion, limited available water capacity, low fertility, excessive permeability
91A: Swygert-----	Wetness, root-restrictive layer, poor tilth, restricted permeability	Wetness, root-restrictive layer
91B2: Swygert-----	Wetness, root-restrictive layer, poor tilth, restricted permeability water erosion	Wetness, root-restrictive layer, poor tilth, water erosion
91C2: Swygert-----	Wetness, root-restrictive layer, poor tilth, water erosion, restricted permeability	Wetness, root-restrictive layer, poor tilth, water erosion
93C2: Rodman-----	Excess lime, crusting, water erosion, limited available water capacity, excessive permeability	Limited available water capacity, excess lime, excessive permeability, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
93D2: Rodman-----	Excess lime, crusting, water erosion, limited available water capacity, excessive permeability	Water erosion, limited available water capacity, excess lime, excessive permeability
98B: Ade-----	Wind erosion, excessive permeability	Wind erosion, excessive permeability
102A: La Hogue-----	Wetness	Wetness
103A: Houghton-----	Ponding, wind erosion, subsidence	Ponding, wind erosion, frost heave
125A: Selma-----	Ponding	Ponding, frost heave
132A: Starks-----	Wetness, crusting	Wetness
134A: Camden-----	Crusting	None
134B, 134C2: Camden-----	Crusting, water erosion	Water erosion
146A: Elliott-----	Wetness, root-restrictive layer, restricted permeability	Wetness, root-restrictive layer
146B: Elliott-----	Wetness, root-restrictive layer, water erosion, restricted permeability	Wetness, root-restrictive layer, water erosion
146B2: Elliott-----	Wetness, root-restrictive layer, poor tilth, water erosion, restricted permeability	Wetness, root-restrictive layer, poor tilth, water erosion
149A: Brenton-----	Wetness	Wetness
150B: Onarga-----	None*	None**
150C2: Onarga-----	Water erosion	Water erosion
151A: Ridgeville-----	Wetness	Wetness
152A: Drummer-----	Ponding	Ponding, frost heave
153A: Pella-----	Ponding	Ponding, frost heave

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
184A: Roby-----	Wetness	Wetness
189A: Martinton-----	Wetness, restricted permeability	Wetness
197A: Troxel-----	None*	None**
201A: Gilford-----	Ponding, excessive permeability	Ponding, frost heave, excessive permeability
206A: Thorp-----	Ponding, restricted permeability	Ponding, frost heave
219A: Millbrook-----	Wetness	Wetness
223B: Varna-----	Root restrictive layer, restricted permeability, water erosion	Root restrictive layer, water erosion
223C2: Varna-----	Root restrictive layer, high pH, crusting, water erosion, restricted permeability	Root restrictive layer, water erosion
223D2: Varna-----	Root restrictive layer, crusting, water erosion, restricted permeability	Root restrictive layer, water erosion
228B: Nappanee-----	Wetness, root-restrictive layer, crusting, water erosion, restricted permeability	Wetness, root-restrictive layer, water erosion
228C2: Nappanee-----	Wetness, root-restrictive layer, poor tilth, water erosion, limited available water capacity, restricted permeability	Wetness, root-restrictive layer, poor tilth, water erosion, limited available water capacity
232A: Ashkum-----	Ponding, poor tilth, restricted permeability	Ponding, frost heave
235A: Bryce-----	Ponding, poor tilth, restricted permeability	Ponding, frost heave
238A: Rantoul-----	Ponding, poor tilth, restricted permeability	Ponding, frost heave

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
240C2: Plattville-----	Depth to bedrock, crusting, water erosion	Depth to bedrock, water erosion
241C3: Chatsworth-----	---	Root restrictive layer, poor tilth, water erosion, limited available water capacity, low fertility, excess lime
241D3, 241E3, 241F: Chatsworth.		
290A: Warsaw-----	Excessive permeability	Excessive permeability
290B: Warsaw-----	Excessive permeability, water erosion	Excessive permeability, water erosion
290C2: Warsaw-----	Crusting, water erosion limited available water capacity, excessive permeability	Water erosion, limited available water capacity, excessive permeability
293A: Andres-----	Wetness, restricted permeability	Wetness
293B: Andres-----	Wetness, water erosion, restricted permeability	Wetness
294A: Symerton-----	None*	None**
294B: Symerton-----	Water erosion, restricted permeability	Water erosion
294C2: Symerton-----	Crusting, water erosion, restricted permeability	Water erosion
295A: Mokena-----	Wetness, root-restrictive layer, restricted permeability	Wetness, root-restrictive layer
295B: Mokena-----	Wetness, root-restrictive layer, restricted permeability, water erosion	Wetness, root-restrictive layer, water erosion
298A: Beecher-----	Wetness, root-restrictive layer, restricted permeability	Wetness, root-restrictive layer

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
298B: Beecher-----	Wetness, root-restrictive layer, water erosion, restricted permeability	Wetness, root-restrictive layer, water erosion
298B2: Beecher-----	Wetness, root-restrictive layer, crusting, water erosion, restricted permeability	Wetness, root-restrictive layer, water erosion
311C, 311D: Ritchey-----	Depth to bedrock, excess lime, crusting, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, water erosion, limited available water capacity, excess lime
314A: Joliet-----	Ponding, depth to bedrock, excess lime, limited available water capacity, restricted permeability	Ponding, depth to bedrock, limited available water capacity, excess lime, frost heave
315A: Channahon-----	Depth to bedrock, excess lime, limited available water capacity, restricted permeability	Depth to bedrock, limited available water capacity, excess lime
315B: Channahon-----	Depth to bedrock, excess lime, limited available water capacity, restricted permeability, water erosion	Depth to bedrock, limited available water capacity, excess lime, water erosion
315C2: Channahon-----	Depth to bedrock, excess lime, crusting, water erosion, limited available water capacity, restricted permeability	Depth to bedrock, water erosion, limited available water capacity, excess lime
316A: Romeo-----	---	Ponding, depth to bedrock, limited available water capacity, excess lime, frost heave
317A: Millsdale-----	Ponding, depth to bedrock, restricted permeability	Ponding, depth to bedrock, frost heave
318A: Lorenzo-----	Excess lime, limited available water capacity, excessive permeability	Limited available water capacity, excess lime, excessive permeability

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
318B: Lorenzo-----	Excess lime, limited available water capacity, excessive permeability, water erosion	Limited available water capacity, excess lime, excessive permeability, water erosion
318C2, 318D2: Lorenzo-----	Excess lime, crusting, water erosion, limited available water capacity, excessive permeability	Water erosion, limited available water capacity, excess lime, excessive permeability
320A: Frankfort-----	Wetness, root-restrictive layer, limited available water capacity, restricted permeability	Wetness, root-restrictive layer, limited available water capacity
320B: Frankfort-----	Wetness, root-restrictive layer, water erosion, limited available water capacity, restricted permeability	Wetness, root-restrictive layer, limited available water capacity, water erosion
320B2: Frankfort-----	Wetness, root-restrictive layer, poor tilth, excess lime, crusting, limited available water capacity restricted permeability, water erosion	Wetness, root-restrictive layer, poor tilth, limited available water capacity water erosion
320C2: Frankfort-----	Wetness, root-restrictive layer, poor tilth, crusting, water erosion, limited available water capacity, restricted permeability	Wetness, root-restrictive layer, poor tilth, water erosion, limited available water capacity
325A: Dresden-----	Excessive permeability	Excessive permeability
325B: Dresden-----	Water erosion, limited available water capacity, excessive permeability	Limited available water capacity, excessive permeability, water erosion
325C2: Dresden-----	Crusting, water erosion, excessive permeability	Water erosion, excessive permeability
327A: Fox-----	Crusting, excessive permeability	Excessive permeability
327B: Fox-----	Crusting, water erosion, excessive permeability, excess lime	Excessive permeability, water erosion, excess lime

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
327C2: Fox-----	Excess lime, crusting, water erosion, limited available water capacity, excessive permeability	Water erosion, limited available water capacity, excess lime, excessive permeability
329A: Will-----	Ponding, limited available water capacity, excessive permeability	Ponding, limited available water capacity, frost heave, excessive permeability
330A: Peotone-----	Ponding, restricted permeability	Ponding, frost heave
343A: Kane-----	Wetness, excessive permeability	Wetness, excessive permeability
356A: Elpaso-----	Ponding	Ponding, frost heave
369A: Waupecan-----	Excessive permeability	Excessive permeability
369B: Waupecan-----	Water erosion, excessive permeability	Excessive permeability, water erosion
380A: Fieldon-----	Ponding, excess lime, excessive permeability	Ponding, excess lime, frost heave, excessive permeability
387B: Ockley-----	Crusting, excessive permeability, water erosion	Excessive permeability, water erosion
403D: Elizabeth-----	---	Water erosion, limited available water capacity, excess lime
403E, 403F: Elizabeth.		
440A: Jasper-----	None*	None**
440B, 440C2: Jasper-----	Water erosion	Water erosion
494B: Kankakee-----	None*	None**
513A: Granby-----	Ponding, limited available water capacity, excessive permeability	Ponding, limited available water capacity, frost heave, excessive permeability

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
523A: Dunham-----	Ponding, excessive permeability	Ponding, frost heave, excessive permeability
526A: Grundelein-----	Wetness, excessive permeability	Wetness, excessive permeability
530B, 530C2: Ozaukee-----	Root restrictive layer, crusting, water erosion, restricted permeability	Root restrictive layer, water erosion
530C3: Ozaukee-----	Root restrictive layer, poor tilth, water erosion, restricted permeability	Root restrictive layer, poor tilth, water erosion, low fertility
530D2: Ozaukee-----	Root restrictive layer, crusting, water erosion, restricted permeability	Root restrictive layer, water erosion
530D3: Ozaukee-----	Root restrictive layer, poor tilth, water erosion, restricted permeability	Root restrictive layer, poor tilth, water erosion, low fertility
530E2: Ozaukee-----	Root restrictive layer, crusting, water erosion, restricted permeability	Equipment limitation, root restrictive layer, water erosion
530F: Ozaukee-----	---	Equipment limitation, root restrictive layer, water erosion
531B: Markham-----	Root restrictive layer, water erosion, restricted permeability	Root restrictive layer, water erosion
531C2, 531D2: Markham-----	Root restrictive layer, crusting, water erosion, restricted permeability	Root restrictive layer, water erosion
541A: Graymont-----	Restricted permeability	None**
541B, 541C2: Graymont-----	Water erosion, restricted permeability	Water erosion
560D2: St. Clair-----	Root restrictive layer, poor tilth, water erosion, limited available water capacity, restricted permeability	Root restrictive layer, poor tilth, water erosion, limited available water capacity

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
560E: St. Clair-----	---	Equipment limitation, root restrictive layer, poor tilth, water erosion, limited available water capacity, excess lime
570B, 570C2, 570D2: Martinsville-----	Water erosion	Water erosion
570E2: Martinsville-----	Water erosion	Equipment limitation, water erosion
570F: Martinsville-----	---	Equipment limitation, water erosion
594A: Reddick-----	Ponding, restricted permeability	Ponding, frost heave
614A: Chenoa-----	Wetness, poor tilth, restricted permeability	Wetness
614B: Chenoa-----	Wetness, poor tilth, water erosion, restricted permeability	Wetness, water erosion
688B: Braidwood-----	Excess lime, crusting, water erosion	Water erosion, low fertility, excess lime
688D: Braidwood-----	---	Water erosion, low fertility, excess lime
688G: Braidwood.		
719A: Symerton-----	None*	None**
719B, 719C2: Symerton-----	Restricted permeability water erosion	Water erosion
740A: Darroch-----	Wetness	Wetness
741B: Oakville-----	Wind erosion, limited available water capacity, excessive permeability	Wind erosion, limited available water capacity, low fertility, excessive permeability
741D: Oakville-----	---	Wind erosion, limited available water capacity, low fertility, excessive permeability

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
741E: Oakville-----	---	Equipment limitation, wind erosion, limited available water capacity, low fertility, excessive permeability
741F: Oakville.		
792A: Bowes-----	Excessive permeability	Excessive permeability
792B: Bowes-----	Water erosion, excessive permeability	Water erosion, excessive permeability
802B, 802D: Orthents, loamy-----	Crusting, water erosion, restricted permeability	Water erosion
805B: Orthents, clayey-----	Poor tilth, poor tilth, water erosion, limited available water capacity, restricted permeability	Poor tilth, water erosion limited available water capacity
830: Landfills-----	Nonsoil material	Nonsoil material
864: Pits, quarry-----	Nonsoil material	Nonsoil material
865: Pits, gravel-----	Nonsoil material	Nonsoil material
903A: Muskego-----	Ponding, wind erosion, restricted permeability	Ponding, wind erosion, frost heave
Houghton-----	Ponding, wind erosion, subsidence	Ponding, wind erosion, frost heave
969E2: Casco-----	---	Equipment limitation, water erosion, limited available water capacity, excessive permeability
Rodman-----	---	Equipment limitation, water erosion, limited available water capacity, excess lime, excessive permeability
969F: Casco.		
Rodman.		

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
1067A: Harpster-----	---	Ponding, excess lime, frost heave
1082A: Millington-----	---	Flooding, ponding, excess lime, frost heave
1103A: Houghton-----	---	Ponding, wind erosion, frost heave
1201A: Gilford-----	---	Ponding, frost heave, excessive permeability
1903A: Muskego-----	---	Ponding, wind erosion, frost heave
Houghton-----	---	Ponding, wind erosion, frost heave
3082A: Millington-----	Flooding, ponding, excess lime	Flooding, ponding, excess lime, frost heave
3107A: Sawmill-----	Flooding, ponding	Flooding, ponding, frost heave
3314A: Joliet-----	Flooding, ponding, depth to bedrock, excess lime, limited available water capacity, restricted permeability	Flooding, ponding, depth to bedrock, limited available water capacity, excess lime, frost heave
3316A: Romeo-----	---	Flooding, ponding, depth to bedrock, limited available water capacity, excess lime, frost heave
3451A: Lawson-----	Flooding, wetness	Flooding, wetness
8082A: Millington-----	Flooding, ponding, excess lime	Flooding, ponding, excess lime, frost heave
8321A: Du Page-----	Flooding, excess lime	Flooding, excess lime
8451A: Lawson-----	Flooding, wetness	Flooding, wetness

* This soil is well suited to crops.

** This soil is well suited to pasture.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM
23A: Blount-----	2w	106	35	48	64	4.3	7.2
23B: Blount-----	2e	105	35	47	63	4.3	7.1
49A: Watseka-----	3s	92	31	43	62	3.7	6.2
67A: Harpster-----	2w	136	44	52	74	5.0	8.3
69A: Milford-----	2w	131	48	56	81	5.2	8.7
88D: Sparta-----	6s	---	---	---	---	3.1	5.2
91A: Swygert-----	2w	114	39	51	73	4.5	7.5
91B2: Swygert-----	2e	107	37	48	69	4.2	7.1
91C2: Swygert-----	3e	106	36	47	68	4.2	7.0
93C2: Rodman-----	4s	50	20	22	31	2.2	3.7
93D2: Rodman-----	4s	48	20	21	29	2.1	3.6
98B: Ade-----	3s	90	31	41	56	3.7	6.1
102A: La Hogue-----	1	129	43	56	80	5.2	8.7
103A: Houghton-----	3w	129	44	---	---	---	7.3
125A: Selma-----	2w	136	44	53	76	5.0	8.3
132A: Starks-----	2w	129	40	55	72	5.1	8.5
134A: Camden-----	1	125	39	55	72	5.0	8.3
134B: Camden-----	2e	124	39	54	71	5.0	8.2
134C2: Camden-----	3e	118	37	52	68	4.7	7.8

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
146A: Elliott-----	2w	128	45	55	79	5.1	8.5
146B: Elliott-----	2e	127	45	54	78	5.1	8.5
146B2: Elliott-----	2e	123	43	53	76	4.9	8.2
149A: Brenton-----	1	160	47	62	91	5.9	9.8
150B: Onarga-----	2e	109	36	48	73	4.2	6.9
150C2: Onarga-----	3e	103	34	45	70	3.9	6.6
151A: Ridgeville-----	2s	115	40	53	75	4.6	7.7
152A: Drummer-----	2w	154	51	61	83	5.5	9.1
153A: Pella-----	2w	140	48	56	78	5.2	8.7
184A: Roby-----	2s	98	36	45	73	4.0	6.7
189A: Martinton-----	2w	135	45	57	84	5.3	8.8
197A: Troxel-----	1	148	45	55	79	5.4	9.0
201A: Gilford-----	2w	110	39	46	68	4.1	6.8
206A: Thorp-----	2w	126	42	51	69	4.6	7.7
219A: Millbrook-----	1	144	43	59	81	5.4	9.0
223B: Varna-----	2e	122	41	52	74	4.8	7.9
223C2: Varna-----	3e	117	39	50	71	4.6	7.6
223D2: Varna-----	4e	114	38	49	70	4.5	7.4
228B: Nappanee-----	3e	86	31	40	55	3.4	5.6
228C2: Nappanee-----	3e	81	29	37	51	3.1	5.2
232A: Ashkum-----	2w	130	47	54	79	5.0	8.3

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
235A: Bryce-----	2w	120	43	48	70	4.4	7.3
238A: Rantoul-----	3w	99	35	36	50	3.2	5.3
240C2: Plattville-----	3e	111	40	50	71	4.4	7.3
241C3: Chatsworth-----	6e	---	---	---	---	1.6	2.7
241D3: Chatsworth-----	7e	---	---	---	---	---	2.6
241E3: Chatsworth-----	7e	---	---	---	---	---	2.4
241F: Chatsworth-----	7e	---	---	---	---	---	2.5
290A: Warsaw-----	2s	115	40	53	74	4.6	7.7
290B: Warsaw-----	2e	114	40	53	73	4.6	7.6
290C2: Warsaw-----	2e	109	38	50	70	4.4	7.3
293A: Andres-----	1	145	48	61	88	5.5	9.2
293B: Andres-----	2e	144	48	60	87	5.4	9.1
294A: Symerton-----	1	136	44	59	83	5.4	9.0
294B: Symerton-----	2e	135	44	58	82	5.3	8.9
294C2: Symerton-----	3e	128	41	56	78	5.1	8.5
295A: Mokena-----	2w	126	41	55	77	4.7	7.8
295B: Mokena-----	2e	125	41	55	76	4.7	7.8
298A: Beecher-----	2w	116	39	51	72	4.5	7.5
298B: Beecher-----	2e	115	39	50	71	4.4	7.4
298B2: Beecher-----	2e	111	37	49	69	4.3	7.2
311C: Ritchey-----	3e	68	24	35	47	2.9	4.9

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
311D: Ritchey-----	4e	66	24	34	45	2.8	4.7
314A: Joliet-----	3w	83	32	39	54	3.3	5.5
315A: Channahon-----	3s	75	29	40	55	3.2	5.3
315B: Channahon-----	3e	74	29	40	55	3.2	5.3
315C2: Channahon-----	4e	70	27	37	51	3.0	5.0
316A: Romeo-----	6s	---	---	---	---	1.0	1.7
317A: Millsdale-----	3w	113	41	47	65	4.4	7.3
318A: Lorenzo-----	3s	92	30	44	61	3.6	6.0
318B: Lorenzo-----	3s	91	30	44	60	3.6	5.9
318C2: Lorenzo-----	3e	86	28	41	57	3.3	5.6
318D2: Lorenzo-----	3e	83	27	40	55	3.2	5.4
320A: Frankfort-----	3w	95	33	45	59	3.7	6.2
320B: Frankfort-----	3e	94	33	45	58	3.7	6.1
320B2: Frankfort-----	3e	89	31	42	56	3.4	5.8
320C2: Frankfort-----	4e	88	31	42	55	3.4	5.7
325A: Dresden-----	2s	110	36	49	69	4.5	7.5
325B: Dresden-----	2e	109	36	49	68	4.5	7.4
325C2: Dresden-----	2e	104	34	47	66	4.3	7.1
327A: Fox-----	2s	106	33	46	64	4.3	7.2
327B: Fox-----	2e	105	35	42	70	4.3	7.1
327C2: Fox-----	2e	100	33	40	65	4.1	6.8

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
329A: Will-----	2w	117	43	53	73	4.7	7.8
330A: Peotone-----	2w	123	42	43	58	4.2	7.0
343A: Kane-----	2s	122	43	55	76	4.8	8.0
356A: Elpaso-----	2w	146	49	58	82	5.4	9.0
369A: Waupecan-----	1	149	50	62	81	5.3	8.8
369B: Waupecan-----	2e	148	49	61	80	5.2	8.8
380A: Fieldon-----	2w	80	28	37	72	3.9	6.5
387B: Ockley-----	2e	125	42	50	74	5.0	8.2
403D: Elizabeth-----	6s	---	---	---	---	2.0	3.3
403E: Elizabeth-----	7s	---	---	---	---	---	3.1
403F: Elizabeth-----	7s	---	---	---	---	---	2.6
440A: Jasper-----	1	138	42	57	88	5.3	8.8
440B: Jasper-----	2e	137	42	56	87	5.2	8.8
440C2: Jasper-----	3e	130	39	54	83	5.0	8.3
494B: Kankakee-----	2e	111	40	51	69	4.6	7.6
513A: Granby-----	3w	92	30	38	57	3.3	5.5
523A: Dunham-----	2w	144	46	59	81	5.3	8.9
526A: Grundelein-----	1	150	46	60	89	5.7	9.5
530B: Ozaukee-----	2e	105	32	47	75	4.3	7.1
530C2: Ozaukee-----	2e	101	30	45	72	4.1	6.8
530C3: Ozaukee-----	3e	91	31	41	56	3.8	6.3

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
530D2: Ozaukee-----	3e	99	30	44	71	4.0	6.7
530D3: Ozaukee-----	4e	91	28	41	55	3.7	6.2
530E2: Ozaukee-----	4e	91	28	40	51	3.7	6.2
530F: Ozaukee-----	6e	---	---	---	---	3.3	5.6
531B: Markham-----	2e	111	37	49	68	4.4	7.2
531C2: Markham-----	3e	106	35	46	65	4.1	6.9
531D2: Markham-----	3e	104	34	45	64	4.1	6.8
541A: Graymont-----	1	136	41	57	80	5.4	9.0
541B: Graymont-----	2e	135	41	56	79	5.3	8.9
541C2: Graymont-----	3e	128	39	54	75	5.1	8.5
560D2: St. Clair-----	4e	69	28	37	47	3.0	5.0
560E: St. Clair-----	6e	---	---	---	---	3.0	4.9
570B: Martinsville-----	2e	120	37	50	65	4.8	7.9
570C2: Martinsville-----	2e	115	35	48	63	4.6	7.6
570D2: Martinsville-----	3e	111	34	47	61	4.4	7.4
570E2: Martinsville-----	4e	105	32	44	57	4.2	7.0
570F: Martinsville-----	6e	---	---	---	---	3.7	6.1
594A: Reddick-----	2w	141	48	56	81	5.3	8.8
614A: Chenoa-----	2w	132	44	56	81	5.3	8.8
614B: Chenoa-----	2e	131	44	55	80	5.2	8.7
688B: Braidwood-----	2e	75	23	26	46	3.2	5.3

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
688D: Braidwood-----	6e	---	---	---	---	3.0	5.0
688G: Braidwood-----	7e	---	---	---	---	---	2.4
719A: Symerton-----	1	132	42	57	81	5.2	8.7
719B: Symerton-----	2e	131	42	56	80	5.2	8.7
719C2: Symerton-----	3e	124	40	54	76	5.0	8.2
740A: Darroch-----	2w	152	46	56	83	4.7	7.8
741B: Oakville-----	4s	61	23	32	47	2.9	4.8
741D: Oakville-----	6s	---	---	---	---	2.8	4.6
741E: Oakville-----	6s	---	---	---	---	2.6	4.3
741F: Oakville-----	7s	---	---	---	---	---	3.6
792A: Bowes-----	1	141	46	60	79	5.3	9.3
792B: Bowes-----	2e	140	46	59	78	5.2	9.2
802B: Orthents, loamy----	2e	85	27	30	50	3.7	6.2
802D: Orthents, loamy----	3e	80	25	28	48	3.4	5.7
805B: Orthents, clayey----	3e	77	24	26	46	3.3	5.6
830: Landfills.							
864: Pits, quarry.							
865: Pits, gravel.							
903A: Muskego-----	4w	127	41	---	---	---	7.2
Houghton-----	3w						
969E2: Casco-----	6e	---	---	---	---	2.9	4.0
Rodman-----	6s						

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
969F:		---	---	---	---	---	3.8
Casco-----	7e						
Rodman-----	7s						
1067A:							
Harpster-----	5w	---	---	---	---	---	---
1082A:							
Millington-----	5w	---	---	---	---	---	---
1103A:							
Houghton-----	5w	---	---	---	---	---	---
1201A:							
Gilford-----	5w	---	---	---	---	---	---
1903A:							
Muskego-----	6w	---	---	---	---	---	---
Houghton-----	5w						
3082A:							
Millington-----	2w	120	37	47	61	4.1	6.9
3107A:							
Sawmill-----	3w	132	42	49	68	4.9	8.2
3314A:							
Joliet-----	4w	75	29	35	49	3.0	5.0
3316A:							
Romeo-----	6s	---	---	---	---	1.0	1.7
3451A:							
Lawson-----	2w	145	43	56	77	5.1	8.6
8082A:							
Millington-----	2w	133	41	52	68	4.6	7.7
8321A:							
Du Page-----	2w	132	40	53	70	5.0	8.3
8451A:							
Lawson-----	2w	161	48	62	86	5.7	9.5
W:							
Water.							

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
23A	Blount silt loam, 0 to 2 percent slopes (where drained)
23B	Blount silt loam, 2 to 4 percent slopes
67A	Harpster silty clay loam, 0 to 2 percent slopes (where drained)
69A	Milford silty clay loam, 0 to 2 percent slopes (where drained)
91A	Swygert silty clay loam, 0 to 2 percent slopes
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded
91C2	Swygert silty clay loam, 4 to 6 percent slopes, eroded
102A	La hogue loam, 0 to 2 percent slopes
125A	Selma loam, 0 to 2 percent slopes (where drained)
132A	Starks silt loam, 0 to 2 percent slopes (where drained)
134A	Camden silt loam, 0 to 2 percent slopes
134B	Camden silt loam, 2 to 5 percent slopes
146A	Elliott silt loam, 0 to 2 percent slopes
146B	Elliott silt loam, 2 to 4 percent slopes
146B2	Elliott silty clay loam, 2 to 4 percent slopes, eroded
149A	Brenton silt loam, 0 to 2 percent slopes
150B	Onarga fine sandy loam, 2 to 5 percent slopes
150C2	Onarga fine sandy loam 5 to 10 percent slopes, eroded
151A	Ridgeville fine sandy loam, 0 to 2 percent slopes
152A	Drummer silty clay loam, 0 to 2 percent slopes (where drained)
153A	Pella silty clay loam, 0 to 2 percent slopes (where drained)
184A	Roby fine sandy loam, 0 to 2 percent slopes
189A	Martinton silt loam, 0 to 2 percent slopes
197A	Troxel silt loam, 0 to 2 percent slopes
201A	Gilford fine sandy loam, 0 to 2 percent slopes (where drained)
206A	Thorp silt loam, 0 to 2 percent slopes (where drained)
219A	Millbrook silt loam, 0 to 2 percent slopes (where drained)
223B	Varna silt loam, 2 to 4 percent slopes
223C2	Varna silt loam, 4 to 6 percent slopes, eroded
228B	Nappanee silt loam, 2 to 4 percent slopes
232A	Ashkum silty clay loam, 0 to 2 percent slopes (where drained)
235A	Bryce silty clay, 0 to 2 percent slopes (where drained)
240C2	Plattville silt loam, 4 to 6 percent slopes, eroded
290A	Warsaw silt loam, 0 to 2 percent slopes
290B	Warsaw silt loam, 2 to 4 percent slopes
290C2	Warsaw silt loam, 4 to 6 percent slopes, eroded
293A	Andres silt loam, 0 to 2 percent slopes
293B	Andres silt loam, 2 to 5 percent slopes
294A	Symerton silt loam, 0 to 2 percent slopes
294B	Symerton silt loam, 2 to 5 percent slopes
294C2	Symerton silt loam, 5 to 10 percent slopes, eroded
295A	Mokena silt loam, 0 to 2 percent slopes
295B	Mokena silt loam, 2 to 4 percent slopes
298A	Beecher silt loam, 0 to 2 percent slopes (where drained)
298B	Beecher silt loam, 2 to 4 percent slopes
298B2	Beecher silt loam, 2 to 4 percent slopes, eroded
317A	Millsdale silty clay loam, 0 to 2 percent slopes (where drained)
320A	Frankfort silt loam, 0 to 2 percent slopes (where drained)
320B	Frankfort silt loam, 2 to 4 percent slopes
320B2	Frankfort silty clay loam, 2 to 4 percent slopes, eroded
325A	Dresden silt loam, 0 to 2 percent slopes
325B	Dresden silt loam, 2 to 4 percent slopes
325C2	Dresden silt loam, 4 to 6 percent slopes, eroded
327A	Fox silt loam, 0 to 2 percent slopes
327B	Fox silt loam, 2 to 4 percent slopes
327C2	Fox silt loam, 4 to 6 percent slopes, eroded
329A	Will silty clay loam, 0 to 2 percent slopes (where drained)
330A	Peotone silty clay loam, 0 to 2 percent slopes (where drained)
343A	Kane silt loam, 0 to 2 percent slopes

Table 8.--Prime Farmland--Continued

Map symbol	Soil name
356A	Elpaso silty clay loam, 0 to 2 percent slopes (where drained)
369A	Waupecan silt loam, 0 to 2 percent slopes
369B	Waupecan silt loam, 2 to 4 percent slopes
380A	Fieldon loam, 0 to 2 percent slopes (where drained)
387B	Ockley loam, 2 to 4 percent slopes
440A	Jasper loam, 0 to 2 percent slopes
440B	Jasper loam, 2 to 5 percent slopes
440C2	Jasper loam, 5 to 10 percent slopes, eroded
494B	Kankakee fine sandy loam, 2 to 4 percent slopes
523A	Dunham silty clay loam, 0 to 2 percent slopes (where drained)
526A	Grundelein silt loam, 0 to 2 percent slopes
530B	Ozaukee silt loam, 2 to 4 percent slopes
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded
531B	Markham silt loam, 2 to 4 percent slopes
531C2	Markham silt loam, 4 to 6 percent slopes, eroded
541A	Graymont silt loam, 0 to 2 percent slopes
541B	Graymont silt loam, 2 to 5 percent slopes
570B	Martinsville loam, 2 to 4 percent slopes
570C2	Martinsville loam, 4 to 6 percent slopes, eroded
594A	Reddick clay loam, 0 to 2 percent slopes (where drained)
614A	Chenoa silty clay loam, 0 to 2 percent slopes
614B	Chenoa silty clay loam, 2 to 5 percent slopes
688B	Braidwood loam, 1 to 7 percent slopes
719A	Symerton fine sandy loam, 0 to 2 percent slopes
719B	Symerton fine sandy loam, 2 to 5 percent slopes
719C2	Symerton fine sandy loam, 5 to 10 percent slopes, eroded
740A	Darroch silt loam, 0 to 2 percent slopes
792A	Bowes silt loam, 0 to 2 percent slopes
792B	Bowes silt loam, 2 to 4 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)
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8321A	Du page silt loam, 0 to 2 slopes, occasionally flooded
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Table 9.--Hydric Soils

Map symbol and map unit name	Component	Hydric	Local landform
23A: Blount silt loam, 0 to 2 percent slopes	Blount	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
23B: Blount silt loam, 2 to 4 percent slopes	Blount	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
49A: Watseka loamy fine sand, 0 to 2 percent slopes	Watseka	No	Stream terraces, outwash plains
	Granby	Yes	Outwash plains
67A: Harpster silty clay loam, 0 to 2 percent slopes	Harpster	Yes	Outwash plains, ground moraines, lake plains
69A: Milford silty clay loam, 0 to 2 percent slopes	Milford	Yes	Lake plains
91A: Swygert silty clay loam, 0 to 2 percent slopes	Swygert	No	Ground moraines
	Bryce	Yes	Ground moraines, lake plains
91B2: Swygert silty clay loam, 2 to 4 percent slopes, eroded	Swygert	No	Ground moraines
	Bryce	Yes	Ground moraines, lake plains
91C2: Swygert silty clay loam, 4 to 6 percent slopes, eroded	Swygert	No	Ground moraines
	Bryce	Yes	Ground moraines, lake plains
93C2: Rodman gravelly loam, 4 to 6 percent slopes, eroded	Rodman	No	End moraines, outwash plains
	Will	Yes	Outwash plains, stream terraces
93D2: Rodman gravelly loam, 6 to 12 percent slopes, eroded	Rodman	No	End moraines, outwash plains
	Will	Yes	Outwash plains, stream terraces
98B: Ade loamy fine sand, 1 to 6 percent slopes	Ade	No	Outwash plains, stream terraces
	Gilford	Yes	Outwash plains
102A: La Hogue loam, 0 to 2 percent slopes	La Hogue	No	Outwash plains, stream terraces
	Selma	Yes	Outwash plains, stream terraces

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
103A: Houghton muck, 0 to 2 percent slopes	Houghton	Yes	Ground moraines, outwash plains
125A: Selma loam, 0 to 2 percent slopes	Selma	Yes	Outwash plains, stream terraces
132A: Starks silt loam, 0 to 2 percent slopes	Starks	No	Outwash plains, stream terraces
	Drummer	Yes	Outwash plains, ground moraines
134A: Camden silt loam, 0 to 2 percent slopes	Camden	No	Outwash plains, stream terraces
	Drummer	Yes	Outwash plains, ground moraines
134B: Camden silt loam, 2 to 5 percent slopes	Camden	No	Outwash plains, stream terraces
	Drummer	Yes	Outwash plains, ground moraines
134C2: Camden silt loam, 5 to 10 percent slopes, eroded	Camden	No	Outwash plains,
	Drummer	Yes	Outwash plains, ground moraines
146A: Elliott silt loam, 0 to 2 percent slopes	Elliott	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
146B: Elliott silt loam, 2 to 4 percent slopes	Elliott	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
146B2: Elliott silty clay loam, 2 to 4 percent slopes, eroded	Elliott	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
149A: Brenton silt loam, 0 to 2 percent slopes	Brenton	No	Outwash plains, stream terraces
	Drummer	Yes	Outwash plains, ground moraines
150B: Onarga fine sandy loam, 2 to 5 percent slopes	Onarga	No	Outwash plains, stream terraces
	Gilford	Yes	Outwash plains
150C2: Onarga fine sandy loam 5 to 10 percent slopes, eroded	Onarga	No	Outwash plains, stream terraces
	Gilford	Yes	Outwash plains

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
151A: Ridgeville fine sandy loam, 0 to 2 percent slopes	Ridgeville	No	Outwash plains, stream terraces
	Gilford	Yes	Outwash plains
152A: Drummer silty clay loam, 0 to 2 percent slopes	Drummer	Yes	Outwash plains, ground moraines
153A: Pella silty clay loam, 0 to 2 percent slopes	Pella	Yes	Outwash plains, ground moraines, lake plains
184A: Roby fine sandy loam, 0 to 2 percent slopes	Roby	No	Outwash plains, stream terraces
	Gilford	Yes	Outwash plains
189A: Martinton silt loam, 0 to 2 percent slopes	Martinton	No	Lake plains
	Milford	Yes	Lake plains
201A: Gilford fine sandy loam, 0 to 2 percent slopes	Gilford	Yes	Outwash plains
	Fieldon	Yes	Outwash plains
206A: Thorp silt loam, 0 to 2 percent slopes	Thorp	Yes	Ground moraines, outwash plains
219A: Millbrook silt loam, 0 to 2 percent slopes	Millbrook	No	Outwash plains, stream terraces
	Drummer	Yes	Outwash plains, ground moraines
223B: Varna silt loam, 2 to 4 percent slopes	Varna	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
223C2: Varna silt loam, 4 to 6 percent slopes, eroded	Varna	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
223D2: Varna silt loam, 6 to 12 percent slopes, eroded	Varna	No	End moraines, ground moraines
	Ashkum	Yes	Ground moraines, end moraines
228B: Nappanee silt loam, 2 to 4 percent slopes	Nappanee	No	End moraines, ground moraines
	Bryce	Yes	Ground moraines, lake plains

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
228C2: Nappanee silty clay loam, 4 to 6 percent slopes, eroded	Nappanee	No	End moraines, ground moraines
	Bryce	Yes	Ground moraines, lake plains
232A: Ashkum silty clay loam, 0 to 2 percent slopes	Ashkum	Yes	Ground moraines, end moraines
235A: Bryce silty clay, 0 to 2 percent slopes	Bryce	Yes	Ground moraines, lake plains
238A: Rantoul silty clay, 0 to 2 percent slopes	Rantoul	Yes	Ground moraines, lake plains
241C3: Chatsworth silty clay, 4 to 6 percent slopes, severely eroded	Chatsworth	No	Ground moraines, end moraines
	Bryce	Yes	Ground moraines, lake plains
241D3: Chatsworth silty clay, 6 to 12 percent slopes, severely eroded	Chatsworth	No	Ground moraines, end moraines
	Bryce	Yes	Ground moraines, lake plains
290A: Warsaw silt loam, 0 to 2 percent slopes	Warsaw	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
290B: Warsaw silt loam, 2 to 4 percent slopes	Warsaw	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
290C2: Warsaw silt loam, 4 to 6 percent slopes, eroded	Warsaw	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
293A: Andres silt loam, 0 to 2 percent slopes	Andres	No	Ground moraines, lake plains
	Ashkum	Yes	Ground moraines, end moraines
293B: Andres silt loam, 2 to 5 percent slopes	Andres	No	Ground moraines, lake plains
	Ashkum	Yes	Ground moraines, end moraines

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
294A: Symerton silt loam, 0 to 2 percent slopes	Symerton	No	Ground moraines, lake plains
	Ashkum	Yes	Ground moraines, end moraines
294B: Symerton silt loam, 2 to 5 percent slopes	Symerton	No	Ground moraines, lake plains
	Ashkum	Yes	Ground moraines, end moraines
294C2: Symerton silt loam, 5 to 10 percent slopes, eroded	Symerton	No	Ground moraines, lake plains
	Ashkum	Yes	Ground moraines, end moraines
295A: Mokena silt loam, 0 to 2 percent slopes	Mokena	No	Ground moraines, lake plains
	Bryce	Yes	Ground moraines, lake plains
295B: Mokena silt loam, 2 to 4 percent slopes	Mokena	No	Ground moraines, lake plains
	Bryce	Yes	Ground moraines, lake plains
298A: Beecher silt loam, 0 to 2 percent slopes	Beecher	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
298B: Beecher silt loam, 2 to 4 percent slopes	Beecher	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
298B2: Beecher silt loam, 2 to 4 percent slopes, eroded	Beecher	No	End moraines, ground moraines
314A: Joliet silt loam, 0 to 2 percent slopes	Joliet	Yes	Stream terraces
316A: Romeo silt loam, 0 to 2 percent slopes	Romeo	Yes	Stream terraces
317A: Millsdale silty clay loam, 0 to 2 percent slopes	Millsdale	Yes	Stream terraces
318A: Lorenzo loam, 0 to 2 percent slopes	Lorenzo	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
318B: Lorenzo loam, 2 to 4 percent slopes	Lorenzo	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
318C2: Lorenzo loam, 4 to 6 percent slopes, eroded	Lorenzo	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
320A: Frankfort silt loam, 0 to 2 percent slopes	Frankfort	No	End moraines, ground moraines
	Bryce	Yes	Ground moraines, lake plains
320B: Frankfort silt loam, 2 to 4 percent slopes	Frankfort	No	End moraines, ground moraines
	Bryce	Yes	Ground moraines, lake plains
320B2: Frankfort silty clay loam, 2 to 4 percent slopes, eroded	Frankfort	No	End moraines, ground moraines
	Bryce	Yes	Ground moraines, lake plains
320C2: Frankfort silty clay loam, 4 to 6 percent slopes, eroded	Frankfort	No	End moraines, ground moraines
	Bryce	Yes	Ground moraines, lake plains
325A: Dresden silt loam, 0 to 2 percent slopes	Dresden	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
325B: Dresden silt loam, 2 to 4 percent slopes	Dresden	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
325C2: Dresden silt loam, 4 to 6 percent slopes, eroded	Dresden	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
327A: Fox silt loam, 0 to 2 percent slopes	Fox	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
327B: Fox silt loam, 2 to 4 percent slopes	Fox	No	Stream terraces, outwash plains
	Will	Yes	Outwash plains, stream terraces
327C2: Fox silt loam, 4 to 6 percent slopes, eroded	Fox	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
329A: Will silty clay loam, 0 to 2 percent slopes	Will	Yes	Outwash plains, stream terraces
330A: Peotone silty clay loam, 0 to 2 percent slopes	Peotone	Yes	Ground moraines
343A: Kane silt loam, 0 to 2 percent slopes	Kane	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
356A: Elpaso silty clay loam, 0 to 2 percent slopes	Elpaso	Yes	Ground moraines, end moraines
369A: Waupecan silt loam, 0 to 2 percent slopes	Waupecan	No	Outwash plains, stream terraces
	Dunham	Yes	Outwash plains, stream terraces
369B: Waupecan silt loam, 2 to 4 percent slopes	Waupecan	No	Outwash plains, stream terraces
	Dunham	Yes	Outwash plains, stream terraces
380A: Fieldon loam, 0 to 2 percent slopes	Fieldon	Yes	Outwash plains
387B: Ockley loam, 2 to 4 percent slopes	Ockley	No	Stream terraces, outwash plains
	Will	Yes	Outwash plains, stream terraces
440A: Jasper loam, 0 to 2 percent slopes	Jasper	No	Outwash plains
	Selma	Yes	Outwash plains, stream terraces
440B: Jasper loam, 2 to 5 percent slopes	Jasper	No	Outwash plains
	Selma	Yes	Outwash plains, stream terraces

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
440C2: Jasper loam, 5 to 10 percent slopes, eroded	Jasper	No	Outwash plains
	Selma	Yes	Outwash plains, stream terraces
494B: Kankakee fine sandy loam, 2 to 4 percent slopes	Kankakee	No	Outwash plains, stream terraces
	Will	Yes	Outwash plains, stream terraces
513A: Granby fine sandy loam, 0 to 2 percent slopes	Granby	Yes	Outwash plains
523A: Dunham silty clay loam, 0 to 2 percent slopes	Dunham	Yes	Outwash plains, stream terraces
526A: Grundelein silt loam, 0 to 2 percent slopes	Grundelein	No	Outwash plains, stream terraces
	Dunham	Yes	Outwash plains, stream terraces
530B: Ozaukee silt loam, 2 to 4 percent slopes	Ozaukee	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
530C2: Ozaukee silt loam, 4 to 6 percent slopes, eroded	Ozaukee	No	End moraines, ground moraines
	Ashkum	Yes	Ground moraines, end moraines
530C3: Ozaukee silty clay loam, 4 to 6 percent slopes, severely eroded	Ozaukee	No	End moraines, ground moraines
	Ashkum	Yes	Ground moraines, end moraines
530D2: Ozaukee silt loam, 6 to 12 percent slopes, eroded	Ozaukee	No	End moraines, ground moraines
	Ashkum	Yes	Ground moraines, end moraines
530D3: Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded	Ozaukee	No	End moraines, ground moraines
	Ashkum	Yes	Ground moraines, end moraines
531B: Markham silt loam, 2 to 4 percent slopes	Markham	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
531C2: Markham silt loam, 4 to 6 percent slopes, eroded	Markham	No	Ground moraines, end moraines
	Ashkum	Yes	Ground moraines, end moraines
531D2: Markham silt loam, 6 to 12 percent slopes, eroded	Markham	No	End moraines, ground moraines
	Ashkum	Yes	Ground moraines, end moraines
541A: Graymont silt loam, 0 to 2 percent slopes	Graymont	No	End moraines, ground moraines
	Elpaso	Yes	Ground moraines, end moraines
541B: Graymont silt loam, 2 to 5 percent slopes	Graymont	No	Ground moraines, end moraines
	Elpaso	Yes	Ground moraines, end moraines
541C2: Graymont silt loam, 5 to 10 percent slopes, eroded	Graymont	No	End moraines, ground moraines
	Elpaso	Yes	Ground moraines, end moraines
570B: Martinsville loam, 2 to 4 percent slopes	Martinsville	No	Outwash plains, stream terraces
	Selma	Yes	Outwash plains, stream terraces
570C2: Martinsville loam, 4 to 6 percent slopes, eroded	Martinsville	No	Outwash plains, stream terraces
	Selma	Yes	Outwash plains, stream terraces
594A: Reddick clay loam, 0 to 2 percent slopes	Reddick	Yes	Ground moraines, lake plains
614A: Chenoa silty clay loam, 0 to 2 percent slopes	Chenoa	No	Ground moraines, end moraines
	Elpaso	Yes	Ground moraines, end moraines
614B: Chenoa silty clay loam, 2 to 5 percent slopes	Chenoa	No	Ground moraines, end moraines
	Elpaso	Yes	Ground moraines, end moraines
719A: Symerton fine sandy loam, 0 to 2 percent slopes	Symerton	No	Ground moraines, lake plains
	Gilford	Yes	Outwash plains

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
719B: Symerton fine sandy loam, 2 to 5 percent slopes	Symerton	No	Ground moraines, lake plains
	Gilford	Yes	Outwash plains
719C2: Symerton fine sandy loam, 5 to 10 percent slopes, eroded	Symerton	No	Ground moraines, lake plains
	Gilford	Yes	Outwash plains
740A: Darroch silt loam, 0 to 2 percent slopes	Darroch	No	Outwash plains
	Selma	Yes	Outwash plains, stream terraces
741B: Oakville fine sand, 1 to 6 percent slopes	Oakville	No	Outwash plains
	Granby	Yes	Outwash plains
792A: Bowes silt loam, 0 to 2 percent slopes	Bowes	No	Outwash plains, stream terraces
	Dunham	Yes	Outwash plains, stream terraces
792B: Bowes silt loam, 2 to 4 percent slopes	Bowes	No	Outwash plains, stream terraces
	Dunham	Yes	Outwash plains, stream terraces
802B: Orthents, loamy, undulating	Orthents, loamy	No	Outwash plains, ground moraines
	Drummer	Yes	Outwash plains, ground moraines
802D: Orthents, loamy, rolling	Orthents, loamy	No	Ground moraines, outwash plains
	Drummer	Yes	Outwash plains, ground moraines
805B: Orthents, clayey, undulating	Orthents, clayey	No	Ground moraines, lake plains
	Ashkum	Yes	Ground moraines, end moraines
	Houghton	Yes	Ground moraines, outwash plains
	Peotone	Yes	Ground moraines
903A: Muskego and Houghton mucks, 0 to 2 percent slopes	Muskego	Yes	Ground moraines, outwash plains
	Houghton	Yes	Ground moraines, outwash plains
1067A: Harpster silty clay loam, undrained, 0 to 2 percent slopes	Harpster	Yes	Outwash plains, ground moraines

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
1082A: Millington silt loam, undrained, 0 to 2 percent slopes, frequently flooded	Millington	Yes	Flood plains
1103A: Houghton muck, undrained, 0 to 2 percent slopes	Houghton	Yes	Ground moraines, outwash plains
1201A: Gilford fine sandy loam, undrained, 0 to 2 percent slopes	Gilford	Yes	Outwash plains
1903A: Muskego and Houghton mucks, undrained, 0 to 2 percent slopes	Muskego	Yes	Ground moraines, outwash plains
	Houghton	Yes	Ground moraines, outwash plains
3082A: Millington silt loam, 0 to 2 percent slopes, frequently flooded	Millington	Yes	Flood plains
3107A: Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	Sawmill	Yes	Flood plains
3314A: Joliet silt loam, 0 to 2 percent slopes, frequently flooded	Joliet	Yes	Flood plains
3316A: Romeo silt loam, 0 to 2 percent slopes, frequently flooded	Romeo	Yes	Flood plains
3451A: Lawson silt loam, 0 to 2 percent slopes, frequently flooded	Lawson	No	Flood plains
	Sawmill	Yes	Flood plains
8082A: Millington silt loam, 0 to 2 percent slopes, occasionally flooded	Millington	Yes	Flood plains
8321A: Du Page silt loam, 0 to 2 slopes, occasionally flooded	Du Page	No	Flood plains
	Millington	Yes	Flood plains
8451A: Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	Lawson	No	Flood plains
	Sawmill	Yes	Flood plains

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height on the soil.)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
23A, 23B: Blount-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
49A: Watseka-----	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, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
67A: Harpster-----	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood, green ash	---
69A: Milford-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
88D: Sparta-----	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternatleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, green ash, 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
91A, 91B2, 91C2: Swygert-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
93C2, 93D2: 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, green ash, thornless honeylocust	---	---
98B: Ade-----	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, green ash, red maple	Carolina poplar	Eastern white pine
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, green ash, 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	Green ash, 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
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	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
132A: Starks-----	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, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
134A, 134B, 134C2: Camden-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
146A, 146B, 146B2: Elliott-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar

Table 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, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
150B, 150C2: Onarga-----	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak	Carolina poplar, eastern white pine
151A: Ridgeville----	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, green ash, 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	Green ash, red maple, river birch, swamp white oak	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, green ash	---

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
184A: Roby-----	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, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
189A: Martinton----	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, green ash, red maple, swamp white oak	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, green ash, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
201A: Gilford-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	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
206A: Thorp-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	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, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
223B, 223C2, 223D2: Varna-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
228B, 228C2: Nappanee-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar

Table 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
232A: Ashkum-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
235A: Bryce-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
238A: Rantoul-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
240C2: Plattville----	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, green ash, 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
241C3, 241D3, 241E3, 241F: Chatsworth---	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
290A, 290B, 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, green ash	Carolina poplar	---
293A, 293B: 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, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
294A, 294B, 294C2: Symerton----	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, green ash, 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
295A, 295B: Mokena-----	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, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
298A, 298B, 298B2: Beecher-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
311C, 311D: Ritchey-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, green ash, thornless honeylocust	---	---
314A: Joliet-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, green ash, thornless honeylocust	---	---
315A, 315B, 315C2: Channahon----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, green ash, thornless honeylocust	---	---
316A: Romeo-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, green ash, thornless honeylocust	---	---

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
317A: Millsdale-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
318A, 318B, 318C2, 318D2: Lorenzo-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---
320A, 320B, 320B2, 320C2: Frankfort----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
325A, 325B, 325C2: Dresden-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---

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
327A, 327B, 327C2: Fox-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---
329A: Will-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
330A: Peotone-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
343A: Kane-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, 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
356A: Elpaso-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
369A, 369B: Waupecan-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
380A: Fieldon-----	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood, green ash	---
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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
403D, 403E, 403F: 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, green ash, thornless honeylocust	---	---

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
440A, 440B, 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, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
494B: Kankakee-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---
513A: Granby-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
523A: Dunham-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	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
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, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
530B, 530C2, 530C3, 530D2, 550D3, 530E2, 530F: Ozaukee-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
531B, 531C2, 531D2: Markham-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
541A, 541B, 541C2: Graymont-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, 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
560D2, 560E: St. Clair-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
570B, 570C2, 570D2, 570E2, 570F: 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, green ash, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
594A: Reddick-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
614A, 614B: Chenoa-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, 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
688B, 699D, 688G: Braidwood----	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternatetea leaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, green ash, red maple	Carolina poplar	Eastern white pine
719A, 719B, 719C2: Symerton-----	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, green ash, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
740A: Darroch-----	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, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
741B, 741D, 741E, 741F: Oakville-----	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternatetea leaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, green ash, 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
792A, 792B: Bowes-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
802B, 802D: Orthents-----	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, green ash, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
805B: Orthents-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
830: Landfills.					
864: Pits, quarry.					
865: Pits, gravel.					
903A: Muskego-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae	Green ash, 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
903A: Houghton-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae	Green ash, pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood
969E2, 869F: Casco-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---
Rodman-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, green ash, thornless honeylocust	---	---
1067A: Harpster-----	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood, green ash	---
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, green ash	---
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	Green ash, 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
1201A: Gilford-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Green ash, red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
1903A: Muskego-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae	Green ash, pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood
Houghton-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae	Green ash, 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, green ash	---
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, shingle oak	Green ash, 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
3314A: Joliet-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, green ash, thornless honeylocust	---	---
3316A: Romeo-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, green ash, thornless honeylocust	---	---
3451A: Lawson-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
8082A: Millington----	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood, green ash	---
8321A: Du Page-----	Common winterberry, gray dogwood, redosier dogwood, silky dogwood	Blackhaw, common pawpaw, common serviceberry, downy arrowwood, roughleaf dogwood, southern arrowwood	Austrian pine, arborvitae, bur oak, common hackberry, eastern redcedar, green ash, green hawthorn, nannyberry	Carolina poplar, eastern cottonwood	---
8451A: Lawson-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
W: Water.					

Table 11.--Features Affecting Use of Tree-Harvesting Equipment

(Only forested soils are listed. See text for a description of the features specified in this table.)

Map symbol and soil name	Limitations and hazards
23A, 23B: Blount-----	Wetness Susceptibility to rutting and wheel slippage
88D: Sparta-----	Poor traction (loose sandy material)
93C2, 93D2: Rodman-----	No major considerations
103A: Houghton-----	Wetness Susceptibility to rutting and wheel slippage
132A: Starks-----	Wetness Susceptibility to rutting and wheel slippage
134A, 134B, 134C2: Camden-----	Susceptibility to rutting and wheel slippage
184A: Roby-----	Wetness Susceptibility to rutting and wheel slippage Poor traction (loose sandy material)
219A: Millbrook-----	Wetness Susceptibility to rutting and wheel slippage
228B, 228C2: Nappanee-----	Wetness Susceptibility to rutting and wheel slippage
298A, 298B, 298B2: Beecher-----	Wetness Susceptibility to rutting and wheel slippage
311C, 311D: Ritchey-----	Susceptibility to rutting and wheel slippage
315A, 315B, 315C2: Channahon-----	Susceptibility to rutting and wheel slippage
317A: Millsdale-----	Wetness Susceptibility to rutting and wheel slippage
320A, 320B, 320B2, 320C2: Frankfort-----	Wetness Susceptibility to rutting and wheel slippage
325A, 325B, 325C2: Dresden-----	Susceptibility to rutting and wheel slippage
327A, 327B, 327C2: Fox-----	Susceptibility to rutting and wheel slippage
387B: Ockley-----	Susceptibility to rutting and wheel slippage

Table 11.--Features Affecting Use of Tree-Harvesting Equipment--Continued

Map symbol and soil name	Limitations and hazards
403D: Elizabeth-----	Depth to hard bedrock Susceptibility to rutting and wheel slippage
403E, 403F: Elizabeth-----	Slope Depth to hard bedrock Susceptibility to rutting and wheel slippage
530B, 530C2, 530C3, 530D2, 530D3: Ozaukee-----	Wetness Susceptibility to rutting and wheel slippage
530E2, 530F: Ozaukee-----	Slope Wetness Susceptibility to rutting and wheel slippage
531B, 531C2, 531D2: Markham-----	Wetness Susceptibility to rutting and wheel slippage
560D2: St. Clair-----	Wetness Susceptibility to rutting and wheel slippage
560E: St. Clair-----	Slope Wetness Susceptibility to rutting and wheel slippage
570B, 570C2, 570D2: Martinsville-----	Susceptibility to rutting and wheel slippage
570E2, 570F: Martinsville-----	Slope Susceptibility to rutting and wheel slippage
688B: Braidwood-----	Susceptibility to rutting and wheel slippage
688D, 688G: Braidwood-----	Slope Susceptibility to rutting and wheel slippage
741B, 741D: Oakville-----	Poor traction (loose sandy material)
741E, 741F: Oakville-----	Slope Poor traction (loose sandy material)
792A, 792B: Bowes-----	Susceptibility to rutting and wheel slippage
903A: Muskego-----	Wetness Susceptibility to rutting and wheel slippage
Houghton-----	Wetness Susceptibility to rutting and wheel slippage

Table 11.--Features Affecting Use of Tree-Harvesting Equipment--Continued

Map symbol and soil name	Limitations and hazards
969E2, 969F: Casco-----	Slope Susceptibility to rutting and wheel slippage
Rodman-----	Slope
1082A: Millington-----	Flooding Wetness Susceptibility to rutting and wheel slippage
1103A: Houghton-----	Wetness Susceptibility to rutting and wheel slippage
1903A: Muskego-----	Wetness Susceptibility to rutting and wheel slippage
Houghton-----	Wetness Susceptibility to rutting and wheel slippage
3082A: Millington-----	Flooding Wetness Susceptibility to rutting and wheel slippage
3107A: Sawmill-----	Flooding Wetness Susceptibility to rutting and wheel slippage
3451A: Lawson-----	Flooding Wetness Susceptibility to rutting and wheel slippage
8082A: Millington-----	Wetness Susceptibility to rutting and wheel slippage
8321A: Du Page-----	Susceptibility to rutting and wheel slippage
8451A: Lawson-----	Wetness Susceptibility to rutting and wheel slippage

Table 12.--Features Affecting Forest Haul Roads

(Only forested soils are listed. See text for a description of the features specified in this table.)

Map symbol and soil name	Limitations and hazards
23A, 23B: Blount-----	Wetness Low bearing strength
88D: Sparta-----	Slope
93C2: Rodman-----	No major considerations
93D2: Rodman-----	Slope
103A: Houghton-----	Wetness Low bearing strength
132A: Starks-----	Wetness Low bearing strength
134A, 134B: Camden-----	Low bearing strength
134C2: Camden-----	Slope Low bearing strength
184A: Roby-----	Wetness Low bearing strength
219A: Millbrook-----	Wetness Low bearing strength
228B, 228C2: Nappanee-----	Wetness Low bearing strength
298A, 298B, 298B2: Beecher-----	Wetness Low bearing strength
311C: Ritchey-----	Depth to hard bedrock Low bearing strength
311D: Ritchey-----	Slope Depth to hard bedrock Low bearing strength
315A, 315B, 315C2: Channahon-----	Depth to hard bedrock Low bearing strength
317A: Millsdale-----	Wetness Low bearing strength

Table 12.--Features Affecting Forest Haul Roads--Continued

Map symbol and soil name	Limitations and hazards
320A, 320B, 320B2, 320C2: Frankfort-----	Wetness Low bearing strength
325A, 325B, 325C2: Dresden-----	Low bearing strength
327A, 327B, 327C2: Fox-----	Low bearing strength
387B: Ockley-----	Low bearing strength
403D, 403E, 403F: Elizabeth-----	Slope Depth to hard bedrock Low bearing strength
530E, 530C2, 530C3: Ozaukee-----	Wetness Low bearing strength
530D2, 530D3, 530E2, 530F: Ozaukee-----	Slope Wetness Low bearing strength
531B, 531C2: Markham-----	Wetness Low bearing strength
531D2: Markham-----	Slope Wetness Low bearing strength
560D2, 560E: St. Clair-----	Slope Wetness Low bearing strength
570B, 570C2: Martinsville-----	Low bearing strength
570D2, 570E2, 570F: Martinsville-----	Slope Low bearing strength
688B: Braidwood-----	Low bearing strength
688D, 688G: Braidwood-----	Slope Low bearing strength
741B: Oakville-----	No major considerations
741D, 741E, 741F: Oakville-----	Slope
792A, 792B: Bowes-----	Low bearing strength

Table 12.--Features Affecting Forest Haul Roads--Continued

Map symbol and soil name	Limitations and hazards
903A: Muskego-----	Wetness Low bearing strength
Houghton-----	Wetness Low bearing strength
969E2, 969F: Casco-----	Slope Low bearing strength
Rodman-----	Slope
1082A: Millington-----	Flooding Wetness Low bearing strength
1103A: Houghton-----	Wetness Low bearing strength
1903A: Muskego-----	Wetness Low bearing strength
Houghton-----	Wetness Low bearing strength
3082A: Millington-----	Flooding Wetness Low bearing strength
3107A: Sawmill-----	Flooding Wetness Low bearing strength
3451A: Lawson-----	Flooding Wetness Low bearing strength
8082A: Millington-----	Wetness Low bearing strength
8321A: Du Page-----	Low bearing strength
8451A: Lawson-----	Wetness Low bearing strength

Table 13.--Features Affecting Log Landings

(Only forested soils are listed. See text for a description of the features specified in this table.)

Map symbol and soil name	Limitations and hazards
23A, 23B: Blount-----	Wetness Susceptibility to rutting and wheel slippage
88D: Sparta-----	Slope
93C2: Rodman-----	No major considerations
93D2: Rodman-----	Slope
103A: Houghton-----	Wetness Susceptibility to rutting and wheel slippage
132A: Starks-----	Wetness Susceptibility to rutting and wheel slippage
134A, 134B: Camden-----	Susceptibility to rutting and wheel slippage
134C2: Camden-----	Slope Susceptibility to rutting and wheel slippage
184A: Roby-----	Wetness Susceptibility to rutting and wheel slippage
219A: Millbrook-----	Wetness Susceptibility to rutting and wheel slippage
228B, 228C2: Nappanee-----	Wetness Susceptibility to rutting and wheel slippage
298A, 298B, 298B2: Beecher-----	Wetness Susceptibility to rutting and wheel slippage
311C: Ritchey-----	Susceptibility to rutting and wheel slippage
311D: Ritchey-----	Slope Susceptibility to rutting and wheel slippage
315A, 315B, 315C2: Channahon-----	Susceptibility to rutting and wheel slippage
317A: Millsdale-----	Wetness Susceptibility to rutting and wheel slippage
320A, 320B, 320B2, 320C2: Frankfort-----	Wetness Susceptibility to rutting and wheel slippage

Table 13.--Features Affecting Log Landings--Continued

Map symbol and soil name	Limitations and hazards
325A, 325B, 325C2: Dresden-----	Susceptibility to rutting and wheel slippage
327A, 327B, 327C2: Fox-----	Susceptibility to rutting and wheel slippage
387B: Ockley-----	Susceptibility to rutting and wheel slippage
403D, 403E, 403F: Elizabeth-----	Slope Susceptibility to rutting and wheel slippage
530B, 530C2, 530C3: Ozaukee-----	Wetness Susceptibility to rutting and wheel slippage
530D2, 530D3, 530E2, 530F: Ozaukee-----	Slope Wetness Susceptibility to rutting and wheel slippage
531B, 531C2: Markham-----	Wetness Susceptibility to rutting and wheel slippage
531D2: Markham-----	Slope Wetness Susceptibility to rutting and wheel slippage
560D2, 560E: St. Clair-----	Slope Wetness Susceptibility to rutting and wheel slippage
570B, 570C2: Martinsville-----	Susceptibility to rutting and wheel slippage
570D2, 570E2, 570F: Martinsville-----	Slope Susceptibility to rutting and wheel slippage
688B: Braidwood-----	Susceptibility to rutting and wheel slippage
688D, 688G: Braidwood-----	Slope Susceptibility to rutting and wheel slippage
741B: Oakville-----	No major considerations
741D, 741E, 741F: Oakville-----	Slope
792A, 792B: Bowes-----	Susceptibility to rutting and wheel slippage
903A: Muskego-----	Wetness Susceptibility to rutting and wheel slippage
Houghton-----	Wetness Susceptibility to rutting and wheel slippage

Table 13.--Features Affecting Log Landings--Continued

Map symbol and soil name	Limitations and hazards
969E2, 969F:	
Casco-----	Slope Susceptibility to rutting and wheel slippage
Rodman-----	Slope
1082A:	
Millington-----	Flooding Wetness Susceptibility to rutting and wheel slippage
1103A:	
Houghton-----	Wetness Susceptibility to rutting and wheel slippage
1903A:	
Muskego-----	Wetness Susceptibility to rutting and wheel slippage
Houghton-----	Wetness Susceptibility to rutting and wheel slippage
3082A:	
Millington-----	Flooding Wetness Susceptibility to rutting and wheel slippage
3107A:	
Sawmill-----	Flooding Wetness Susceptibility to rutting and wheel slippage
3451A:	
Lawson-----	Flooding Wetness Susceptibility to rutting and wheel slippage
8082A:	
Millington-----	Flooding Wetness Susceptibility to rutting and wheel slippage
8321A:	
Du Page-----	Flooding Susceptibility to rutting and wheel slippage
8451A:	
Lawson-----	Flooding Wetness Susceptibility to rutting and wheel slippage

Table 14.--Features Affecting Site Preparation and Planting

(Only forested soils are listed. See text for a description of the features specified in this table.)

Map symbol and soil name	Limitations and hazards
23A, 23B: Blount-----	Wetness Potential poor tilth and compaction
88D: Sparta-----	Water erosion
93C2: Rodman-----	No major considerations
93D2: Rodman-----	Water erosion
103A: Houghton-----	Wetness
132A: Starks-----	Wetness Potential poor tilth and compaction
134A, 134B: Camden-----	Potential poor tilth and compaction
134C2: Camden-----	Water erosion Potential poor tilth and compaction
184A: Roby-----	Wetness
219A: Millbrook-----	Wetness Potential poor tilth and compaction
228B, 228C2: Nappanee-----	Wetness Potential poor tilth and compaction
298A, 298B, 298B2: Beecher-----	Wetness Potential poor tilth and compaction
311C: Ritchey-----	Depth to hard bedrock Potential poor tilth and compaction
311D: Ritchey-----	Depth to hard bedrock Water erosion Potential poor tilth and compaction
315A, 315B, 315C2: Channahon-----	Depth to hard bedrock Potential poor tilth and compaction
317A: Millsdale-----	Wetness
320A, 320B, 320B2, 320C2: Frankfort-----	Wetness Potential poor tilth and compaction

Table 14.--Features Affecting Site Preparation and Planting--Continued

Map symbol and soil name	Limitations and hazards
325A, 325B, 325C2: Dresden-----	Potential poor tilth and compaction
327A, 327B, 327C2: Fox-----	Potential poor tilth and compaction
387B: Ockley-----	No major considerations
403D: Elizabeth-----	Depth to hard bedrock Water erosion Potential poor tilth and compaction
403E, 403F: Elizabeth-----	Slope Depth to hard bedrock Water erosion Potential poor tilth and compaction
530B, 530C2, 530C3: Ozaukee-----	Wetness Potential poor tilth and compaction
530D2, 530D3, 530E2, 530F: Ozaukee-----	Wetness Water erosion Potential poor tilth and compaction
531B, 531C2: Markham-----	Wetness Potential poor tilth and compaction
531D2: Markham-----	Wetness Water erosion Potential poor tilth and compaction
560D2: St. Clair-----	Wetness Water erosion Potential poor tilth and compaction
560E: St. Clair-----	Slope Wetness Water erosion Potential poor tilth and compaction
570B, 570C2: Martinsville-----	No major considerations
570D2: Martinsville-----	Water erosion
570E2, 570F: Martinsville-----	Slope Water erosion
688B: Braidwood-----	Potential poor tilth and compaction

Table 14.--Features Affecting Site Preparation and Planting--Continued

Map symbol and soil name	Limitations and hazards
688D, 688G: Braidwood-----	Slope Water erosion Potential poor tilth and compaction
741B: Oakville-----	No major considerations
741D: Oakville-----	Water erosion
741E, 741F: Oakville-----	Slope Water erosion
792A, 792B: Bowes-----	Potential poor tilth and compaction
903A: Muskego-----	Wetness
Houghton-----	Wetness
969E2, 969F: Casco-----	Slope Water erosion
Rodman-----	Slope Water erosion
1082A: Millington-----	Flooding Wetness
1103A: Houghton-----	Wetness
1903A: Muskego-----	Wetness
Houghton-----	Wetness
3082A: Millington-----	Flooding Wetness
3107A: Sawmill-----	Flooding Wetness
3451A: Lawson-----	Flooding Wetness
8082A: Millington-----	Wetness
8321A: Du Page-----	No major considerations
8451A: Lawson-----	Wetness

Table 15.--Forest Productivity
(Only forested soils are listed.)

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber Cu ft/ac	
23A, 23B: Blount-----	Northern red oak----	57	43	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Sugar maple-----	54	29	
	White ash-----	57	43	
	White oak-----	57	43	
88D: Sparta-----	Eastern white pine--	---	---	Common hackberry, eastern redcedar, eastern white pine, green ash, red maple
	Jack pine-----	---	---	
	Northern red oak----	70	57	
	Red pine-----	---	---	
93C2, 93D2: Rodman-----	Northern red oak----	45	29	Bur oak, chinkapin oak, eastern redcedar, green ash, thornless honeylocust
	Red pine-----	---	---	
	Shagbark hickory----	---	---	
	White oak-----	---	---	
103A: Houghton-----	Black willow-----	---	---	Eastern cottonwood, green ash, pin oak, swamp white oak
	Quaking aspen-----	56	57	
	Red maple-----	51	29	
	Silver maple-----	76	29	
	White ash-----	51	29	
132A: Starks-----	Black walnut-----	---	---	Common hackberry, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Northern red oak----	80	57	
	White oak-----	80	57	
134A, 134B, 134C2: Camden-----	Green ash-----	76	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, white oak
	Northern red oak----	85	72	
	Shagbark hickory----	---	---	
	Sugar maple-----	---	---	
	White oak-----	85	72	
184A: Roby-----	Black walnut-----	---	---	Common hackberry, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Northern red oak----	80	57	
	White oak-----	80	57	

Table 15.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			Cu ft/ac	
219A: Millbrook-----	Northern red oak----	80	57	Common hackberry, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Black walnut-----	---	---	
	Shagbark hickory----	---	---	
	White oak-----	80	57	
228B, 228C2: Nappanee-----	American sycamore---	---	---	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Northern red oak----	---	---	
	Pin oak-----	85	72	
	Shagbark hickory----	---	---	
	White oak-----	75	72	
298A, 298B, 298B2: Beecher-----	Northern red oak----	65	4	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Black cherry-----	---	---	
	Bur oak-----	---	---	
	Northern pin oak----	---	---	
	Shagbark hickory----	---	---	
	White oak-----	---	---	
311C, 311D: Ritchey-----	Bur oak-----	---	---	Bur oak, chinkapin oak, eastern redcedar, green ash, thornless honeylocust
	Eastern redcedar----	---	---	
	Northern red oak----	50	29	
	White oak-----	50	29	
315A, 315B, 315C2: Channahon-----	American basswood---	---	---	Bur oak, chinkapin oak, eastern redcedar, green ash, thornless honeylocust
	Northern red oak----	55	43	
	Quaking aspen-----	---	---	
	Sugar maple-----	---	---	
	White oak-----	---	---	
317A: Millsdale-----	Black cherry-----	---	---	American sycamore, eastern cottonwood, green ash, pin oak, red maple, swamp white oak
	Eastern cottonwood--	---	---	
	Green ash-----	---	---	
	Pin oak-----	86	72	
	Red maple-----	---	---	
	Swamp white oak----	---	---	
320A, 320B, 320B2, 320C2: Frankfort-----	Bur oak-----	---	---	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Green ash-----	---	---	
	Northern red oak----	70	57	
	White oak-----	70	57	
325A, 325B, 325C2: Dresden-----	Northern red oak----	70	57	Black oak, common hackberry, eastern white pine, green ash
	American basswood---	---	---	
	Black cherry-----	---	---	
	Black oak-----	---	---	
	Shagbark hickory----	---	---	
	Sugar maple-----	---	---	
	White ash-----	---	---	
	White oak-----	---	---	

Table 15.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
327A, 327B, 327C2: Fox-----	Northern red oak----	65	57	Black oak, common hackberry, eastern white pine, green ash
	Black cherry-----	---	---	
	Shagbark hickory----	---	---	
	Sugar maple-----	---	---	
	White ash-----	---	---	
	White oak-----	---	---	
387B: Ockley-----	Northern red oak----	90	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, white oak
	Sugar maple-----	---	---	
	White oak-----	90	72	
403D, 403E, 403F: Elizabeth-----	Black oak-----	60	43	Bur oak, chinkapin oak, eastern redcedar, green ash, thornless honeylocust
	Bur oak-----	60	43	
	Eastern redcedar----	---	---	
	Northern red oak----	---	---	
	Shagbark hickory----	---	---	
530B, 530C2, 530C3, 530D2, 530D3, 530E2, 530F Ozaukee-----	American basswood---	---	---	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Northern red oak----	66	57	
	Shagbark hickory----	---	---	
	Sugar maple-----	---	---	
	White ash-----	---	---	
531B, 531C2, 531D2: Markham-----	Northern red oak----	65	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Black cherry-----	---	---	
	Shagbark hickory----	---	---	
	White oak-----	---	---	
560D2, 560E: St. Clair-----	Northern red oak----	66	43	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Sugar maple-----	---	---	
	White ash-----	---	---	
	White oak-----	62	43	
570B, 570C2, 570D2: 570E2, 570F Martinsville-----	White oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, white oak
	Shagbark hickory----	---	---	
	Sugar maple-----	---	---	
	Northern red oak----	80	57	

Table 15.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
688B, 688D, 688G: Braidwood-----	Black walnut----- Eastern cottonwood--	73 ---	--- ---	Common hackberry, eastern redcedar, eastern white pine, green ash, red maple
741B, 741D, 741E, 741F: Oakville-----	Eastern white pine-- Jack pine----- Red pine----- White oak-----	85 68 78 70	200 100 143 57	Common hackberry, eastern redcedar, eastern white pine, green ash, red maple
792A, 792B: Bowes-----	Northern red oak--- Shagbark hickory--- White ash----- White oak-----	90 --- --- 90	72 --- --- 72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, white oak
903A: Muskego-----	Silver maple----- Willow-----	82 ---	29 ---	Eastern cottonwood, green ash, pin oak, swamp white oak
Houghton-----	Silver maple----- Arborvitae----- Green ash----- Quaking aspen----- Red maple----- White ash-----	82 37 --- 60 56 56	29 57 --- 57 29 43	Eastern cottonwood, green ash, pin oak, swamp white oak
969E2, 969F: Casco-----	Black oak----- Northern red oak--- Shagbark hickory---	--- 55 ---	--- 43 ---	Black oak, common hackberry, eastern white pine, green ash
Rodman-----	Northern red oak--- Red pine----- Shagbark hickory--- White oak-----	45 --- --- ---	29 --- --- ---	Bur oak, chinkapin oak, eastern redcedar, green ash, thornless honeylocust
1082A: Millington-----	American beech----- American sycamore--- Blackgum----- Northern red oak--- Pin oak----- Red maple----- Shagbark hickory--- Swamp white oak---- White ash-----	--- --- --- --- --- --- --- --- ---	--- --- --- --- --- --- --- --- ---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar, green ash

Table 15.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
1103A:			Cu ft/ac	
Houghton-----	Silver maple-----	82	29	Eastern cottonwood, green ash, pin oak, swamp white oak
	Arborvitae-----	37	57	
	Green ash-----	---	---	
	Quaking aspen-----	60	57	
	Red maple-----	56	29	
	White ash-----	56	43	
1903A:				
Muskego-----	Silver maple-----	82	29	Eastern cottonwood, green ash, pin oak, swamp white oak
	Willow-----	---	---	
Houghton-----	Silver maple-----	82	29	Eastern cottonwood, green ash, pin oak, swamp white oak
	Arborvitae-----	37	57	
	Green ash-----	---	---	
	Quaking aspen-----	60	57	
	Red maple-----	56	29	
	White ash-----	56	43	
3082A:				
Millington-----	American beech-----	---	---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar, green ash
	American sycamore---	---	---	
	Blackgum-----	---	---	
	Northern red oak---	---	---	
	Pin oak-----	---	---	
	Red maple-----	---	---	
	Shagbark hickory---	---	---	
	Swamp white oak---	---	---	
	White ash-----	---	---	
3107A:				
Sawmill-----	Pin oak-----	90	72	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak
	American sycamore---	---	---	
	Eastern cottonwood--	---	---	
3451A:				
Lawson-----	Red maple-----	---	---	Common hackberry, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Silver maple-----	70	29	
	White ash-----	---	---	
8082A:				
Millington-----	American beech-----	---	---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar, green ash
	American sycamore---	---	---	
	Blackgum-----	---	---	
	Northern red oak---	---	---	
	Pin oak-----	---	---	
	Red maple-----	---	---	
	Shagbark hickory---	---	---	
	Swamp white oak---	---	---	
	White ash-----	---	---	

Table 15.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
8321A: Du Page-----	Eastern cottonwood-- Northern red oak---- White ash----- White oak-----	--- 80 --- ---	--- 57 --- ---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar, green ash
8451A: Lawson-----	Red maple----- Silver maple----- White ash-----	--- 70 ---	--- 29 ---	Common hackberry, eastern cottonwood, green ash, pecan, pin oak, swamp white oak

Table 16a.--Recreation

(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
23A: Blount-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	0.99	Very limited Depth to saturated zone	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
23B: Blount-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	0.99	Very limited Depth to saturated zone	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
					Slope	0.12
49A: Watseka-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
	Too sandy	0.59	Too sandy	0.59	Too sandy	0.59
67A: Harpster-----	Very limited Depth to saturated zone	1.00	Very limited Ponding	1.00	Very limited Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
69A: Milford-----	Very limited Depth to saturated zone	1.00	Very limited Ponding	1.00	Very limited Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
88D: Sparta-----	Somewhat limited Too sandy	0.76	Somewhat limited Too sandy	0.76	Very limited Slope	1.00
	Slope	0.04	Slope	0.04	Too sandy	0.76
91A: Swygert-----	Very limited Depth to saturated zone	1.00	Somewhat limited Restricted permeability	0.96	Very limited Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.75	Restricted permeability	0.96
91B2: Swygert-----	Very limited Depth to saturated zone	1.00	Somewhat limited Restricted permeability	0.96	Very limited Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.75	Restricted permeability	0.96
					Slope	0.12

Table 16a.--Recreation--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
91C2: Swygert-----	Very limited Restricted permeability Depth to saturated zone	1.00 0.98	Very limited Restricted permeability Depth to saturated zone	1.00 0.75	Very limited Restricted permeability Depth to saturated zone Slope	1.00 0.98 0.88
93C2: Rodman-----	Somewhat limited Gravel content	0.02	Somewhat limited Gravel content	0.02	Very limited Gravel content Slope	1.00 0.88
93D2: 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
98B: Ade-----	Somewhat limited Too sandy	0.68	Somewhat limited Too sandy	0.68	Somewhat limited Too sandy Slope	0.68 0.28
102A: La Hogue-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
103A: Houghton	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Content of organic matter	1.00 1.00
125A: Selma-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
132A: Starks-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
134A: Camden-----	Not limited		Not limited		Not limited	
134B: Camden-----	Not limited		Not limited		Somewhat limited Slope	0.28
134C2: Camden-----	Not limited		Not limited		Very limited Slope	1.00

Table 16a.--Recreation--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
146A: Elliott-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.96	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.88	Very limited Depth to saturated zone Restricted permeability	1.00 0.96
146B, 146B2: Elliott-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.96	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.88	Very limited Depth to saturated zone Restricted permeability Slope	1.00 0.96 0.12
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
150B: Onarga-----	Not limited		Not limited		Somewhat limited Slope	0.28
150C2: Onarga-----	Not limited		Not limited		Very limited Slope	1.00
151A: Ridgeville-----	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 Ponding Depth to saturated zone	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 Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
184A: Roby-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
189A: Martinton-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.21	Somewhat limited Depth to saturated zone Restricted permeability	0.75 0.21	Very limited Depth to saturated zone Restricted permeability	1.00 0.21
197A: Troxel-----	Not limited		Not limited		Not limited	

Table 16a.--Recreation--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
201A: Gilford-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
206A: Thorp-----	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.96	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.96	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.96
219A: Millbrook-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
223B: Varna-----	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability Slope	0.96 0.12
223C2: Varna-----	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability Slope	0.96 0.88
223D2: Varna-----	Somewhat limited Restricted permeability Slope	0.96 0.04	Somewhat limited Restricted permeability Slope	0.96 0.04	Very limited Slope Restricted permeability	1.00 0.96
228B: Nappanee-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Restricted permeability Depth to saturated zone	1.00 0.94	Very limited Restricted permeability Depth to saturated zone Slope	1.00 1.00 0.12
228C2: Nappanee-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Restricted permeability Depth to saturated zone	1.00 0.94	Very limited Restricted permeability Depth to saturated zone Slope	1.00 1.00 0.88
232A: Ashkum-----	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.21	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.21	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.21

Table 16a.--Recreation--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
235A: Bryce-----	Very limited Depth to saturated zone Ponding Too clayey Restricted permeability	 1.00 1.00 1.00 0.96	Very limited Ponding Depth to saturated zone Too clayey Restricted permeability	 1.00 1.00 1.00 0.96	Very limited Depth to saturated zone Ponding Too clayey Restricted permeability	 1.00 1.00 1.00 0.96
238A: Rantoul-----	Very limited Depth to saturated zone Ponding Restricted permeability Too clayey	 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Restricted permeability Too clayey	 1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Ponding Restricted permeability Too clayey	 1.00 1.00 1.00 1.00
240C2: Plattville-----	Not limited		Not limited		Somewhat limited Slope	 0.88
241C3: Chatsworth-----	Very limited Restricted permeability Too clayey Depth to saturated zone	 1.00 1.00 0.16	Very limited Restricted permeability Too clayey Depth to saturated zone	 1.00 1.00 0.08	Very limited Restricted permeability Too clayey Slope Depth to saturated zone	 1.00 1.00 0.88 0.16
241D3: Chatsworth-----	Very limited Restricted permeability Too clayey Depth to saturated zone Slope	 1.00 1.00 0.16 0.04	Very limited Restricted permeability Too clayey Depth to saturated zone Slope	 1.00 1.00 0.08 0.04	Very limited Slope Restricted permeability Too clayey Depth to saturated zone	 1.00 1.00 1.00 0.16
241E3: Chatsworth-----	Very limited Restricted permeability Slope Too clayey Depth to saturated zone	 1.00 1.00 1.00 0.16	Very limited Restricted permeability Slope Too clayey Depth to saturated zone	 1.00 1.00 1.00 0.08	Very limited Slope Restricted permeability Too clayey Depth to saturated zone	 1.00 1.00 1.00 0.16
241F: Chatsworth-----	Very limited Slope Restricted permeability Depth to saturated zone	 1.00 1.00 0.16	Very limited Slope Restricted permeability Depth to saturated zone	 1.00 1.00 0.08	Very limited Slope Restricted permeability Depth to saturated zone	 1.00 1.00 0.16
290A: Warsaw-----	Not limited		Not limited		Not limited	

Table 16a.--Recreation--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
290B: Warsaw-----	Not limited		Not limited		Somewhat limited Slope	0.12
290C2: Warsaw-----	Not limited		Not limited		Somewhat limited Slope	0.88
293A: Andres-----	Very limited Depth to saturated zone Restricted permeability	0.99 0.21	Somewhat limited Depth to saturated zone Restricted permeability	0.78 0.21	Somewhat limited Depth to saturated zone Restricted permeability	0.99 0.21
293B: Andres-----	Very limited Depth to saturated zone Restricted permeability	0.99 0.21	Somewhat limited Depth to saturated zone Restricted permeability	0.78 0.21	Somewhat limited Depth to saturated zone Slope Restricted permeability	0.99 0.28 0.21
294A: Symerton-----	Not limited		Not limited		Not limited	
294B: Symerton-----	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability Slope	0.96 0.28
294C2: Symerton-----	Somewhat limited Restricted permeability	0.21	Somewhat limited Restricted permeability	0.21	Very limited Slope Restricted permeability	1.00 0.21
295A: Mokena-----	Somewhat limited Depth to saturated zone Restricted permeability	0.98 0.96	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.75	Somewhat limited Depth to saturated zone Restricted permeability	0.98 0.96
295B: Mokena-----	Somewhat limited Depth to saturated zone Restricted permeability	0.98 0.96	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.75	Somewhat limited Depth to saturated zone Restricted permeability Slope	0.98 0.96 0.12
298A: Beecher-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.96	Very limited Depth to saturated zone Restricted permeability	0.99 0.96	Very limited Depth to saturated zone Restricted permeability	1.00 0.96

Table 16a.--Recreation--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
298B, 298E2: Beecher-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.96	Very limited Depth to saturated zone Restricted permeability	1.00 0.96	Very limited Depth to saturated zone Restricted permeability Slope	1.00 0.96 0.12
311C: Ritchey-----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Slope	1.00 0.88
311D: Ritchey-----	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Slope Depth to bedrock	1.00 1.00
314A: Joliet-----	Very limited Depth to saturated zone Ponding Depth to bedrock	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00	Very limited Depth to saturated zone Depth to bedrock Ponding	1.00 1.00 1.00
315A: Channahon-----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
315B: Channahon-----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Slope	1.00 0.12
315C2: Channahon-----	Very limited Depth to bedrock Restricted permeability	1.00 0.43	Very limited Depth to bedrock Restricted permeability	1.00 0.43	Very limited Depth to bedrock Slope Restricted permeability	1.00 0.88 0.43
316A: Romeo-----	Very limited Depth to saturated zone Ponding Depth to bedrock	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00	Very limited Depth to saturated zone Depth to bedrock Ponding Content of large stones	1.00 1.00 1.00 0.01
317A: Millsdale-----	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.21	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.21	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.21
318A: Lorenzo-----	Not limited		Not limited		Not limited	

Table 16a.--Recreation--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
318B: Lorenzo-----	Not limited		Not limited		Somewhat limited Slope	0.12
318C2: Lorenzo-----	Not limited		Not limited		Somewhat limited Slope	0.88
318D2: Lorenzo-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
320A: Frankfort-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Restricted permeability Depth to saturated zone	1.00 0.94	Very limited Restricted permeability Depth to saturated zone	1.00 1.00
320B, 320B2: Frankfort-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Restricted permeability Depth to saturated zone	1.00 0.94	Very limited Restricted permeability Depth to saturated zone Slope	1.00 1.00 0.12
320C2: Frankfort-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Restricted permeability Depth to saturated zone	1.00 0.94	Very limited Restricted permeability Depth to saturated zone Slope	1.00 1.00 0.88
325A: Dresden-----	Not limited		Not limited		Not limited	
325B: Dresden-----	Not limited		Not limited		Somewhat limited Slope	0.12
325C2: Dresden-----	Not limited		Not limited		Somewhat limited Slope	0.88
327A: Fox-----	Not limited		Not limited		Not limited	
327B: Fox-----	Not limited		Not limited		Somewhat limited Slope	0.12
327C2: Fox-----	Not limited		Not limited		Somewhat limited Slope	0.88

Table 16a.--Recreation--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
329A: Will-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
330A: Peotone-----	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.21	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.21	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.21
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
356A: Elpaso-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
369A: Waupecan-----	Not limited		Not limited		Not limited	
369B: Waupecan-----	Not limited		Not limited		Somewhat limited Slope	0.12
380A: Fieldon-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
387B: Ockley-----	Not limited		Not limited		Somewhat limited Slope	0.12
403D: Elizabeth-----	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Slope Depth to bedrock	1.00 1.00
403E, 403F: 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
440A: Jasper-----	Not limited		Not limited		Not limited	
440B: Jasper-----	Not limited		Not limited		Somewhat limited Slope	0.28

Table 16a.--Recreation--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
440C2: Jasper-----	Not limited		Not limited		Very limited Slope	1.00
494B: Kankakee-----	Not limited		Not limited		Somewhat limited Slope Content of large stones	0.12 0.01
513A: Granby-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
523A: Dunham-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
526A: Grundelein-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
530B: Ozaukee-----	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability Slope	0.96 0.12
530C2, 530C3: Ozaukee-----	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.16	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.08	Somewhat limited Restricted permeability Slope Depth to saturated zone	0.96 0.88 0.16
530D2, 530D3: Ozaukee-----	Somewhat limited Restricted permeability Depth to saturated zone Slope	0.96 0.16 0.04	Somewhat limited Restricted permeability Depth to saturated zone Slope	0.96 0.08 0.04	Very limited Slope Restricted permeability Depth to saturated zone	1.00 0.96 0.16
530E2: Ozaukee-----	Very limited Slope Restricted permeability Depth to saturated zone	1.00 0.96 0.16	Very limited Slope Restricted permeability Depth to saturated zone	1.00 0.96 0.08	Very limited Slope Restricted permeability Depth to saturated zone	1.00 0.96 0.16

Table 16a.--Recreation--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
530F: Ozaukee-----	Very limited Slope Restricted permeability	1.00 0.96	Very limited Slope Restricted permeability	1.00 0.96	Very limited Slope Restricted permeability	1.00 0.96
531B: Markham-----	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability Slope	0.96 0.12
531C2: Markham-----	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.07	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.03	Somewhat limited Restricted permeability Slope Depth to saturated zone	0.96 0.88 0.07
531D2: Markham-----	Somewhat limited Restricted permeability Slope Depth to saturated zone	0.96 0.04 0.03	Somewhat limited Restricted permeability Slope Depth to saturated zone	0.96 0.04 0.02	Very limited Slope Restricted permeability Depth to saturated zone	1.00 0.96 0.03
541A: Graymont-----	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96
541B: Graymont-----	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability Slope	0.96 0.28
541C2: Graymont-----	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96	Very limited Slope Restricted permeability	1.00 0.96
560D2: St. Clair-----	Very limited Restricted permeability Slope	1.00 0.04	Very limited Restricted permeability Slope	1.00 0.04	Very limited Slope Restricted permeability	1.00 1.00
560E: St. Clair-----	Very limited Restricted permeability Slope Depth to saturated zone	1.00 1.00 0.16	Very limited Restricted permeability Slope Depth to saturated zone	1.00 1.00 0.08	Very limited Slope Restricted permeability Depth to saturated zone	1.00 1.00 0.16

Table 16a.--Recreation--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
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
570E2, 570F: Martinsville-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
594A: Reddick-----	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.21	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.21	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.21
614A: Chenoa-----	Somewhat limited Depth to saturated zone Restricted permeability	0.98 0.96	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.75	Somewhat limited Depth to saturated zone Restricted permeability	0.98 0.96
614B: Chenoa-----	Somewhat limited Depth to saturated zone Restricted permeability	0.98 0.21	Somewhat limited Depth to saturated zone Restricted permeability	0.75 0.21	Somewhat limited Depth to saturated zone Slope Restricted permeability	0.98 0.28 0.21
688B: Braidwood-----	Not limited		Not limited		Somewhat limited Slope	0.50
688D: Braidwood-----	Somewhat limited Slope	0.91	Somewhat limited Slope	0.91	Very limited Slope	1.00
688G: Braidwood-----	Very limited Slope Restricted permeability	1.00 0.21	Very limited Slope Restricted permeability	1.00 0.21	Very limited Slope Restricted permeability	1.00 0.21
719A: Symerton-----	Somewhat limited Restricted permeability	0.21	Somewhat limited Restricted permeability	0.21	Somewhat limited Restricted permeability	0.21

Table 16a.--Recreation--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
719B: Symerton-----	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability	0.96	Somewhat limited Restricted permeability Slope	0.96 0.28
719C2: Symerton-----	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.39	Somewhat limited Restricted permeability Depth to saturated zone	0.96 0.19	Very limited Slope Restricted permeability Depth to saturated zone	1.00 0.96 0.39
740A: Darroch-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98
741B: Oakville-----	Very limited Too sandy	1.00	Very limited Too sandy	1.00	Very limited Too sandy Slope	1.00 0.28
741D: Oakville-----	Very limited Too sandy Slope	1.00 0.04	Very limited Too sandy Slope	1.00 0.04	Very limited Slope Too sandy	1.00 1.00
741E, 741F: Oakville-----	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 1.00	Very limited Slope Too sandy	1.00 1.00
792A: Bowes-----	Not limited		Not limited		Not limited	
792B: Bowes-----	Not limited		Not limited		Somewhat limited Slope	0.12
802B: Orthents, loamy----	Somewhat limited Restricted permeability	0.21	Somewhat limited Restricted permeability	0.21	Somewhat limited Slope Restricted permeability	0.28 0.21
802D: Orthents, loamy----	Somewhat limited Restricted permeability Slope	0.21 0.04	Somewhat limited Restricted permeability Slope	0.21 0.04	Very limited Slope Restricted permeability	1.00 0.21
805B: Orthents, clayey----	Very limited Restricted permeability Too clayey	1.00 1.00	Very limited Restricted permeability Too clayey	1.00 1.00	Very limited Restricted permeability Too clayey Slope	1.00 1.00 0.12
830: Landfills-----	Not rated		Not rated		Not rated	

Table 16a.--Recreation--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
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
903A: Muskego-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
Houghton-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Content of organic matter	1.00 1.00
969E2, 969F: 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
1067A: Harpster-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
1082A: Millington-----	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
1103A: Houghton-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Content of organic matter	1.00 1.00
1201A: Gilford-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
1903A: Muskego-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00

Table 16a.--Recreation--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
1903A: Houghton-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Content of organic matter	1.00 1.00
3082A: Millington-----	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
3107A: Sawmill-----	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00
3314A: Joliet-----	Very limited Depth to saturated zone Flooding Ponding Depth to bedrock	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Depth to bedrock Flooding	1.00 1.00 1.00 0.40	Very limited Depth to saturated zone Depth to bedrock Flooding Ponding	1.00 1.00 1.00 1.00
3316A: Romeo-----	Very limited Depth to saturated zone Flooding Ponding Depth to bedrock	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Depth to bedrock Flooding	1.00 1.00 1.00 0.40	Very limited Depth to saturated zone Depth to bedrock Flooding Ponding Content of large stones	1.00 1.00 1.00 1.00 0.01
3451A: Lawson-----	Very limited Flooding Depth to saturated zone	1.00 0.98	Somewhat limited Depth to saturated zone Flooding	0.75 0.40	Very limited Flooding Depth to saturated zone	1.00 0.98
8082A: Millington-----	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 0.60
8321A: Du Page-----	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60

Table 16a.--Recreation--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
8451A:						
Lawson-----	Very limited Flooding	1.00	Somewhat limited Depth to	0.75	Somewhat limited Depth to	0.98
	Depth to saturated zone	0.98	saturated zone		saturated zone Flooding	0.60
W:						
Water-----	Not rated		Not rated		Not rated	

Table 16b.--Recreation

(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
23A, 23B: Blount-----	Very limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.98	Very limited Depth to saturated zone	0.99
49A: Watseka-----	Somewhat limited Too sandy Depth to saturated zone	0.59 0.44	Somewhat limited Too sandy Depth to saturated zone	0.59 0.44	Somewhat limited Depth to saturated zone Droughty	0.75 0.05
67A: Harpster-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
69A: Milford-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
88D: Sparta-----	Somewhat limited Too sandy	0.76	Somewhat limited Too sandy	0.76	Somewhat limited Droughty Slope	0.40 0.04
91A, 91B2, 91C2 Swygert-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
93C2: Rodman-----	Not limited		Not limited		Somewhat limited Droughty Gravel content	0.78 0.02
93D2: Rodman-----	Not limited		Not limited		Somewhat limited Droughty Slope Gravel content	0.99 0.04 0.02
98B: Ade-----	Somewhat limited Too sandy	0.68	Somewhat limited Too sandy	0.68	Not limited	
102A: La Hogue-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75

Table 16b.--Recreation--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
103A: Houghton-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Ponding Content of organic matter Depth to saturated zone	1.00 1.00 1.00
125A: Selma-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
132A: Starks-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
134A, 134B, 134C2: Camden-----	Not limited		Not limited		Not limited	
146A, 146B, 146B2: Elliott-----	Somewhat limited Depth to saturated zone	0.73	Somewhat limited Depth to saturated zone	0.73	Somewhat limited Depth to saturated zone	0.88
149A: Brenton-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
150B, 150C2: Onarga-----	Not limited		Not limited		Not limited	
151A: Ridgeville-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
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 Ponding Depth to saturated zone	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 Ponding Depth to saturated zone	1.00 1.00
184A: Roby-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
189A: Martinton-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75

Table 16b.--Recreation--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
197A: Troxel-----	Not limited		Not limited		Not limited	
201A: Gilford-----	Very limited Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
206A: Thorp-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
219A: Millbrook-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
223B, 223C2: Varna-----	Not limited		Not limited		Not limited	
223D2: Varna-----	Not limited		Not limited		Somewhat limited Slope	0.04
228B, 228C2: Nappanee-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
232A: Ashkum-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
235A: Bryce-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 1.00
238A: Rantoul-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 1.00
240C2: Plattville-----	Not limited		Not limited		Not limited	
241C3: Chatsworth-----	Very limited Too clayey	1.00	Very limited Too clayey	1.00	Very limited Droughty Too clayey Depth to saturated zone	1.00 1.00 0.08

Table 16b.--Recreation--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
241D3: Chatsworth-----	Very limited Too clayey	1.00	Very limited Too clayey	1.00	Very limited Droughty Too clayey Depth to saturated zone Slope	1.00 1.00 0.08 0.04
241E3: Chatsworth-----	Very limited Too clayey Slope	1.00 0.02	Very limited Too clayey	1.00	Very limited Droughty Slope Too clayey Depth to saturated zone	1.00 1.00 1.00 0.08
241F: Chatsworth-----	Very limited Slope	1.00	Not limited		Very limited Slope Droughty Depth to saturated zone	1.00 1.00 0.08
290A, 290B, 290C2: Warsaw-----	Not limited		Not limited		Not limited	
293A, 293B: 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
294A, 294B, 294C2: Symerton-----	Not limited		Not limited		Not limited	
295A, 295B: Mokena-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
298A: Beecher-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.98	Very limited Depth to saturated zone	0.99
298B, 298B2: Beecher-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
311C: Ritchey-----	Not limited		Not limited		Very limited Depth to bedrock Droughty	1.00 0.47
311D: Ritchey-----	Not limited		Not limited		Very limited Depth to bedrock Droughty Slope	1.00 0.57 0.04

Table 16b.--Recreation--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
314A: Joliet-----	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 bedrock Ponding Depth to saturated zone Droughty	1.00 1.00 1.00 0.48
315A, 315B: Channahon-----	Not limited		Not limited		Very limited Depth to bedrock Droughty	1.00 0.61
315C2: Channahon-----	Not limited		Not limited		Very limited Depth to bedrock Droughty	1.00 0.88
316A: Romeo-----	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 bedrock Ponding Depth to saturated zone Droughty Content of large stones	1.00 1.00 1.00 1.00 0.01
317A: Millsdale-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 0.42
318A: Lorenzo-----	Not limited		Not limited		Not limited	
318B: Lorenzo-----	Not limited		Not limited		Somewhat limited Droughty	0.01
318C2: Lorenzo-----	Not limited		Not limited		Somewhat limited Droughty	0.09
318D2: Lorenzo-----	Not limited		Not limited		Somewhat limited Droughty Slope	0.24 0.04
320A, 320B, 320B2, 320C2: Frankfort-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
325A, 325B, 325C2: Dresden-----	Not limited		Not limited		Not limited	

Table 16b.--Recreation--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
327A, 327B, 327C2: Fox-----	Not limited		Not limited		Not limited	
329A: Will-----	Very limited Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
330A: Peotone-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
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
356A: Elpaso-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
369A, 369B: Waupecan-----	Not limited		Not limited		Not limited	
380A: Fieldon-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
387B: Ockley-----	Not limited		Not limited		Not limited	
403D: Elizabeth-----	Not limited		Not limited		Very limited Depth to bedrock Droughty Slope	1.00 1.00 0.04
403E: Elizabeth-----	Somewhat limited Slope	0.02	Not limited		Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.75
403F: Elizabeth-----	Very limited Slope	1.00	Not limited		Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.99
440A, 440B, 440C2: Jasper-----	Not limited		Not limited		Not limited	

Table 16b.--Recreation--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
494B: Kankakee-----	Not limited		Not limited		Somewhat limited Content of large stones	0.01
513A: Granby-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone Droughty	1.00 1.00 0.01
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 Ponding Depth to saturated zone	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
530B, 530C2, 530C3: Ozaukee-----	Not limited		Not limited		Somewhat limited Depth to saturated zone	0.08
530D2, 530D3: Ozaukee-----	Not limited		Not limited		Somewhat limited Depth to saturated zone Slope	0.08 0.04
530E2: Ozaukee-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope Depth to saturated zone	1.00 0.08
530F: Ozaukee-----	Very limited Slope	1.00	Not limited		Very limited Slope	1.00
531B, 531C2: Markham-----	Not limited		Not limited		Somewhat limited Depth to saturated zone	0.03
531D2: Markham-----	Not limited		Not limited		Somewhat limited Slope Depth to saturated zone	0.04 0.02
541A, 541B, 541C2: Graymont-----	Not limited		Not limited		Not limited	

Table 16b.--Recreation--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
560D2: St. Clair-----	Not limited		Not limited		Somewhat limited Slope	0.04
560E: St. Clair-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope Droughty Depth to saturated zone	1.00 0.24 0.08
570B, 570C2: Martinsville-----	Not limited		Not limited		Not limited	
570D2: Martinsville-----	Not limited		Not limited		Somewhat limited Slope	0.04
570E2: Martinsville-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope	1.00
570F: Martinsville-----	Very limited Slope	1.00	Not limited		Very limited Slope	1.00
594A: Reddick-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
614A, 614B: Chenoa-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
688B: Braidwood-----	Not limited		Not limited		Not limited	
688D: Braidwood-----	Not limited		Not limited		Somewhat limited Slope	0.91
688G: Braidwood-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
719A, 719B, 719C2: Symerton-----	Not limited		Not limited		Somewhat limited Depth to saturated zone	0.19
740A: Darroch-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
741B: Oakville-----	Very limited Too sandy	1.00	Very limited Too sandy	1.00	Somewhat limited Droughty	0.34

Table 16b.--Recreation--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
741D: Oakville-----	Very limited Too sandy	1.00	Very limited Too sandy	1.00	Somewhat limited Droughty Slope	0.40 0.04
741E: Oakville-----	Very limited Too sandy Slope	1.00 0.02	Very limited Too sandy	1.00	Very limited Slope Droughty	1.00 0.40
741F: Oakville-----	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy	1.00	Very limited Slope Droughty	1.00 0.40
792A, 792B: Bowes-----	Not limited		Not limited		Not limited	
802B: Orthents, loamy----	Not limited		Not limited		Not limited	
802D: Orthents, loamy----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.04
805B: Orthents, clayey----	Very limited Too clayey	1.00	Very limited Too clayey	1.00	Very limited Too clayey Droughty	1.00 0.48
830: Landfills-----	Not rated		Not rated		Not rated	
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
903A: Muskego-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
Houghton-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Ponding Content of organic matter Depth to saturated zone	1.00 1.00 1.00
969E2: Casco-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope Droughty	1.00 0.05
Rodman-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope Droughty Gravel content	1.00 1.00 0.02

Table 16b.--Recreation--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
969F:						
Casco-----	Very limited Slope	1.00	Not limited		Very limited Slope Droughty	1.00 0.34
Rodman-----	Very limited Slope	1.00	Not limited		Very limited Slope Droughty Gravel content	1.00 0.94 0.02
1067A:						
Harpster-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
1082A:						
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 Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
1103A:						
Houghton-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Ponding Content of organic matter Depth to saturated zone	1.00 1.00 1.00
1201A:						
Gilford-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
1903A:						
Muskego-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
Houghton-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Ponding Content of organic matter Depth to saturated zone	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 Ponding Flooding Depth to saturated zone	1.00 1.00 1.00

Table 16b.--Recreation--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 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 Ponding Flooding Depth to saturated zone	 1.00 1.00 1.00
3314A: Joliet-----	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 bedrock Ponding Flooding Depth to saturated zone Droughty	 1.00 1.00 1.00 1.00 0.54
3316A: Romeo-----	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 bedrock Ponding Flooding Depth to saturated zone Droughty	 1.00 1.00 1.00 1.00
3451A: Lawson-----	Somewhat limited Depth to saturated zone Flooding	 0.44 0.40	Somewhat limited Depth to saturated zone Flooding	 0.44 0.40	Very limited Flooding Depth to saturated zone	 1.00 0.75
8082A: 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 Ponding Depth to saturated zone Flooding	 1.00 1.00 0.60
8321A: Du Page-----	Not limited		Not limited		Somewhat limited Flooding	 0.60
8451A: Lawson-----	Somewhat limited Depth to saturated zone	 0.44	Somewhat limited Depth to saturated zone	 0.44	Somewhat limited Depth to saturated zone Flooding	 0.75 0.60
W: Water-----	Not rated		Not rated		Not rated	

Table 17.--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
23A: Blount-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
23B: Blount-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
49A: Watseka-----	Fair	Fair	Good	Good	Good	Fair	Poor	Fair	Good	Poor.
67A: Harpster-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
69A: Milford-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
88D: Sparta-----	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
91A: Swygert-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
91B2: Swygert-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
91C2: Swygert-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
93C2, 93D2: Rodman-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
98B: Ade-----	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
102A: La Hogue-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
103A: Houghton-----	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
125A: Selma-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
132A: Starks-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
134A, 134B: Camden-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
134C2: Camden-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 17.--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
146A: Elliott-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
146B, 146B2: Elliott-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
149A: Brenton-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
150B: Onarga-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
150C2: Onarga-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
151A: Ridgeville-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
152A: Drummer-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
153A: Pella-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
184A: Roby-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
189A: Martinton-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
197A: Troxel-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
201A: Gilford-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
206A: Thorp-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
219A: Millbrook-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
223B: Varna-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
223C2: Varna-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
223D2: Varna-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
228B: Nappanee-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
228C2: Nappanee-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 17.--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
232A: Ashkum-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
235A: Bryce-----	Fair	Fair	Poor	Fair	Fair	Good	Good	Fair	Fair	Good.
238A: Rantoul-----	Fair	Fair	Poor	Fair	Fair	Good	Good	Fair	Fair	Good.
240C2: Plattville-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
241C3: Chatsworth-----	Poor	Poor	Fair	Poor	Poor	Poor	Very poor.	Poor	Poor	Very poor.
241D3, 241E3: Chatsworth-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
241F: Chatsworth-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
290A, 290B: Warsaw-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
290C2: Warsaw-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
293A: Andres-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
293B: Andres-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
294A: Symerton-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
294B: Symerton-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
294C2: Symerton-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
295A: Mokena-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
295B: Mokena-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
298A: Beecher-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
298B, 298B2: Beecher-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.

Table 17.--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
311C, 311D: Ritchey-----	Poor	Poor	Fair	Fair	Fair	Poor	Very poor.	Poor	Fair	Very poor.
314A: Joliet-----	Poor	Poor	Fair	Fair	Fair	Good	Poor	Poor	Fair	Fair.
315A: Channahon-----	Poor	Poor	Fair	Fair	Fair	Poor	Very poor.	Poor	Fair	Very poor.
315B, 315C2: Channahon-----	Poor	Poor	Fair	Fair	Fair	Poor	Very poor.	Poor	Fair	Very poor.
316A: Romeo-----	Very poor.	Very poor.	Poor	Very poor.	Very poor.	Good	Very poor.	Very poor.	Very poor.	Poor.
317A: Millsdale-----	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
318A: Lorenzo-----	Fair	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
318B, 318C2: Lorenzo-----	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
318D2: Lorenzo-----	Fair	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
320A: Frankfort-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
320B, 320B2: Frankfort-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
320C2: Frankfort-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
325A, 325B: Dresden-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
325C2: Dresden-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
327A, 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.

Table 17.--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
329A: Will-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
330A: Peotone-----	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
343A: Kane-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
356A: Elpaso-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
369A, 369B: Waupecan-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
380A: Fieldon-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
387B: Ockley-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
403D, 403E: Elizabeth-----	Poor	Poor	Fair	Poor	Fair	Very poor.	Very poor.	Poor	Poor	Very poor.
403F: Elizabeth-----	Very poor.	Poor	Fair	Poor	Fair	Very poor.	Very poor.	Poor	Poor	Very poor.
440A, 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.
494B: Kankakee-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
513A: Granby-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
523A: Dunham-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
526A: Grundelein-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
530B: Ozaukee-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
530C2, 530C3: Ozaukee-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 17.--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
530D2, 530D3: Ozaukee-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
530E2, 530F: Ozaukee-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
531B: Markham-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
531C2: Markham-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
531D2: Markham-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
541A: Graymont-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
541B: Graymont-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
541C2, 541D2: Graymont-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
560E: St. Clair-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	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.
570E2, 570F: Martinsville-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
594A: Reddick-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
614A: Chenoa-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
614B: Chenoa-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.

Table 18a.--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 potential 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
23A, 23B: Blount-----	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
49A: Watseka-----	Somewhat limited Depth to saturated zone	0.98	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.98
67A: Harpster----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50
69A: Milford-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50
88D: Sparta-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
91A, 91B2: Swygert-----	Very limited Shrink-swell Depth to saturated zone	1.00 0.98	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Shrink-swell Depth to saturated zone	1.00 0.98
91C2: Swygert-----	Very limited Shrink-swell Depth to saturated zone	1.00 0.98	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Shrink-swell Depth to saturated zone Slope	1.00 0.98 0.12
93C2: Rodman-----	Not limited		Not limited		Somewhat limited Slope	0.12
93D2: Rodman-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
98B: Ade-----	Not limited		Not limited		Not limited	

Table 18a.--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
102A: La Hogue----	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
103A: Houghton----	Very limited Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00
125A: Selma-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50
132A: Starks-----	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
134A, 134B: Camden-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
134C2: Camden-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
146A, 146B 146B2: Elliott----	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
149A: Brenton----	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
150B: Onarga-----	Not limited		Not limited		Not limited	
150C2: Onarga-----	Not limited		Not limited		Somewhat limited Slope	0.97
151A: Ridgeville--	Somewhat limited Depth to saturated zone	0.98	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.98

Table 18a.--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
152A: Drummer-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50
153A: Pella-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50
184A: Roby-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
189A: Martinton---	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
197A: Troxel-----	Not limited		Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16	Not limited	
201A: Gilford-----	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
206A: Thorp-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone 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 Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50
223B: Varna-----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16

Table 18a.--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
223C2: Varna-----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Depth to saturated zone Slope	0.50 0.16 0.12
223D2: Varna-----	Somewhat limited Shrink-swell Depth to saturated zone Slope	0.50 0.16 0.04	Very limited Depth to saturated zone Shrink-swell Slope	1.00 0.50 0.04	Very limited Slope Shrink-swell Depth to saturated zone	1.00 0.50 0.16
228B: Nappanee----	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
228C2: Nappanee----	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 Slope	1.00 0.50 0.12
232A: Ashkum-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
235A: Bryce-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
238A: Rantoul-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
240C2: Plattville--	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.42	Somewhat limited Shrink-swell Slope	0.50 0.12
241C3: Chatsworth--	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Depth to saturated zone Slope	0.50 0.16 0.12

Table 18a.--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
241D3:						
Chatsworth--	Somewhat limited		Very limited		Very limited	
	Shrink-swell	0.50	Depth to	1.00	Slope	1.00
	Depth to	0.16	saturated zone		Shrink-swell	0.50
	saturated zone		Shrink-swell	0.50	Depth to	0.16
	Slope	0.04	Slope	0.04	saturated zone	
241E3:						
Chatsworth--	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to	1.00	Slope	1.00
	Shrink-swell	0.50	saturated zone		Shrink-swell	0.50
	Depth to	0.16	Slope	1.00	Depth to	0.16
	saturated zone		Shrink-swell	0.50	saturated zone	
241F:						
Chatsworth--	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to	1.00	Shrink-swell	0.50
	Depth to	0.16	saturated zone		Depth to	0.16
	saturated zone		Shrink-swell	0.50	saturated zone	
290A, 290B:						
Warsaw-----	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
290C2:						
Warsaw-----	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.12
293A, 293B:						
Andres-----	Somewhat limited		Very limited		Very limited	
	Depth to	0.99	Depth to	1.00	Depth to	0.99
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
294A, 294B:						
Symerton----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to	1.00	Shrink-swell	0.50
	Depth to	0.16	saturated zone		Depth to	0.16
	saturated zone		Shrink-swell	0.50	saturated zone	
294C2:						
Symerton----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to	1.00	Slope	0.97
	Depth to	0.16	saturated zone		Shrink-swell	0.50
	saturated zone		Shrink-swell	0.50	Depth to	0.16
					saturated zone	
295A, 295B:						
Mokena-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to	0.98	Depth to	1.00	Depth to	0.98
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
298A, 298B, 298B2:						
Beecher----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 18a.--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
311C: Ritchey-----	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.12
311D: Ritchey-----	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
314A: Joliet-----	Very limited Ponding Depth to saturated zone Depth to hard bedrock	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Depth to hard bedrock	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Depth to hard bedrock	1.00 1.00 1.00
315A, 315B: Channahon---	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50
315C2: Channahon---	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.12
316A: Romeo-----	Very limited Ponding Depth to saturated zone Depth to hard bedrock	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Depth to hard bedrock	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Depth to hard bedrock	1.00 1.00 1.00
317A: Millsdale---	Very limited Ponding Depth to saturated zone Shrink-swell Depth to hard bedrock	1.00 1.00 1.00 0.42	Very limited Ponding Depth to saturated zone Shrink-swell Depth to hard bedrock	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell Depth to hard bedrock	1.00 1.00 1.00 0.42
318A, 318B: Lorenzo-----	Not limited		Not limited		Not limited	
318C2: Lorenzo-----	Not limited		Not limited		Somewhat limited Slope	0.12
318D2: Lorenzo-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00

Table 18a.--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
320A, 320B, 320B2: Frankfort--	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
320C2: Frankfort---	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 Slope	1.00 0.50 0.12
325A, 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
327A, 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
329A: Will-----	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
330A: Peotone----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
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
356A: Elpaso-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50
369A, 369B: Waupecan----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50

Table 18a.--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
380A: Fieldon-----	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
387B: Ockley-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
403D: Elizabeth---	Very limited Depth to hard bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Slope	1.00 1.00
403E, 403F: Elizabeth---	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50
440A, 440B: Jasper-----	Not limited		Not limited		Somewhat limited Shrink-swell	0.50
440C2: Jasper-----	Not limited		Not limited		Somewhat limited Slope	0.97
494B: Kankakee----	Somewhat limited Content of large stones	0.01	Somewhat limited Content of large stones	0.01	Somewhat limited Content of large stones	0.01
513A: Granby-----	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
523A: Dunham-----	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone 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
530B: Ozaukee-----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16

Table 18a.--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
530C2, 530C3: Ozaukee-----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Depth to saturated zone Slope	0.50 0.16 0.12
530D2, 530D3: Ozaukee-----	Somewhat limited Shrink-swell Depth to saturated zone Slope	0.50 0.16 0.04	Very limited Depth to saturated zone Shrink-swell Slope	1.00 0.50 0.04	Very limited Slope Shrink-swell Depth to saturated zone	1.00 0.50 0.16
530E2, 530F: Ozaukee-----	Very limited Slope Shrink-swell Depth to saturated zone	1.00 0.50 0.16	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to saturated zone	1.00 0.50 0.16
531B: Markham-----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.07	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.07
531C2: Markham-----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.07	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Slope Depth to saturated zone	0.50 0.12 0.07
531D2: Markham-----	Somewhat limited Shrink-swell Slope Depth to saturated zone	0.50 0.04 0.03	Very limited Depth to saturated zone Shrink-swell Slope	1.00 0.50 0.04	Very limited Slope Shrink-swell Depth to saturated zone	1.00 0.50 0.03
541A, 541B: Graymont----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16	Very limited Depth to saturated zone	1.00	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16
541C2: Graymont----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.16	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Shrink-swell Depth to saturated zone	0.97 0.50 0.16
560D2: St. Clair---	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Depth to saturated zone Shrink-swell Slope	1.00 0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50

Table 18a.--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
560E:						
St. Clair---	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to	1.00	Slope	1.00
	Shrink-swell	0.50	saturated zone		Shrink-swell	0.50
	Depth to	0.16	Slope	1.00	Depth to	0.16
	saturated zone		Shrink-swell	0.50	saturated zone	
570B:						
Martinsville	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
570C2:						
Martinsville	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.12
570D2:						
Martinsville	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
570E2, 570F:						
Martinsville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
594A:						
Reddick-----	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	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
614A, 614B:						
Chenoa-----	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to	1.00	Shrink-swell	1.00
	Depth to	0.98	saturated zone		Depth to	0.98
	saturated zone		Shrink-swell	0.50	saturated zone	
688B:						
Braidwood---	Not limited		Not limited		Not limited	
688D:						
Braidwood---	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.91	Slope	0.91	Slope	1.00
688G:						
Braidwood---	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
719A, 719B:						
Symerton----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to	1.00	Shrink-swell	0.50
	Depth to	0.39	saturated zone		Depth to	0.39
	saturated zone		Shrink-swell	0.50	saturated zone	

Table 18a.--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
719C2: Symerton----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.39	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Shrink-swell Depth to saturated zone	0.97 0.50 0.39
740A: Darroch----	Somewhat limited Depth to saturated zone	0.98	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.98
741B: Oakville----	Not limited		Not limited		Not limited	
741D: Oakville----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
741E, 741F: Oakville----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
792A, 792B: Bowes-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
802B: Orthents----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.47	Somewhat limited Shrink-swell	0.50
802D: Orthents----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Depth to saturated zone Slope	0.50 0.47 0.04	Very limited Slope Shrink-swell	1.00 0.50
805B: Orthents----	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 0.99	Very limited Shrink-swell	1.00
830: Landfills---	Not rated		Not rated		Not rated	
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	

Table 18a.--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
903A:						
Muskego-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	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
	Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
			Shrink-swell	0.50		
Houghton----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	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
	Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
969E2, 969F:						
Casco-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Rodman-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
1067A:						
Harpster----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
1082A:						
Millington--	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
1103A:						
Houghton----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	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
	Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
1201A:						
Gilford-----	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 18a.--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
1903A:						
Muskego-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Content of	1.00	Content of	1.00	Content of	1.00
	organic matter		organic matter		organic matter	
			Shrink-swell	0.50		
Houghton----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Content of	1.00	Content of	1.00	Content of	1.00
	organic matter		organic matter		organic matter	
3082A:						
Millington--	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	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
			Shrink-swell	0.50		
3107A:						
Sawmill-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3314A:						
Joliet-----	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	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Depth to hard	1.00	Depth to hard	1.00	Depth to hard	1.00
	bedrock		bedrock		bedrock	
3316A:						
Romeo-----	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	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Depth to hard	1.00	Depth to hard	1.00	Depth to hard	1.00
	bedrock		bedrock		bedrock	
3451A:						
Lawson-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to	0.98	Depth to	1.00	Depth to	0.98
	saturated zone		saturated zone		saturated zone	

Table 18a.--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
8082A:						
Millington--	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		
8321A:						
Du Page-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.24		
8451A:						
Lawson-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
			Shrink-swell	0.50		
W:						
Water-----	Not rated		Not rated		Not rated	

Table 18b.--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 potential 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
23A, 23B: Blount-----	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.99
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.99	saturated zone	0.50		
	saturated zone		layer			
	Shrink-swell	0.50	Too clayey	0.02		
49A: Watseka-----	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	Droughty	0.05
67A: Harpster----	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				
	Low strength	1.00				
	Shrink-swell	0.50				
69A: Milford-----	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				
	Low strength	1.00				
	Shrink-swell	0.50				
88D: Sparta-----	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.04	Cutbanks cave	1.00	Droughty	0.40
			Slope	0.04	Slope	0.04
91A, 91B2: Swygert-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Depth to	0.75
	Shrink-swell	1.00	saturated zone		saturated zone	
	Depth to	0.75	Too clayey	0.32		
	saturated zone					
	Frost action	0.50				
91C2: Swygert-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Depth to	0.75
	Shrink-swell	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	0.10		
	saturated zone					
	Frost action	0.50				

Table 18b.--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
93C2: Rodman-----	Not limited		Very limited Cutbanks cave	1.00	Somewhat limited Droughty Gravel content	0.78 0.02
93D2: Rodman-----	Somewhat limited Slope	0.04	Very limited Cutbanks cave Slope	1.00 0.04	Somewhat limited Droughty Slope Gravel content	0.99 0.04 0.02
98B: Ade-----	Not limited		Very limited Cutbanks cave	1.00	Not limited	
102A: La Hogue----	Very limited Frost action Depth to saturated zone Shrink-swell Low strength	1.00 0.75 0.50 0.22	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00	Somewhat limited Depth to saturated zone	0.75
103A: Houghton----	Very limited Ponding Depth to saturated zone Subsidence Frost action	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Very limited Ponding Content of organic matter Depth to saturated zone	1.00 1.00 1.00
125A: Selma-----	Very limited Ponding Depth to saturated zone Frost action Shrink-swell Low strength	1.00 1.00 1.00 0.50 0.22	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
132A: Starks-----	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	Very limited Depth to saturated zone	1.00
134A, 134B: Camden-----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Very limited Cutbanks cave	1.00	Not limited	
134C2: Camden-----	Very limited Frost action Shrink-swell	1.00 0.50	Very limited Cutbanks cave	1.00	Not limited	

Table 18b.--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
146A, 146B 146B2: Elliott----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Depth to	0.88
	Depth to	0.88	saturated zone		saturated zone	
	saturated zone		Depth to dense	0.50		
	Shrink-swell	0.50	layer			
	Frost action	0.50				
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				
150B: Onarga-----	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
150C2: Onarga-----	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
151A: Ridgeville--	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		
152A: Drummer-----	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	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
153A: Pella-----	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	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
184A: Roby-----	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to	1.00	Depth to	1.00
	Depth to	0.94	saturated zone		saturated zone	
	saturated zone		Cutbanks cave	1.00		

Table 18b.--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
189A: Martinton---	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Depth to	0.75
	Depth to	0.75	saturated zone		saturated zone	
	Shrink-swell	0.50				
	Frost action	0.50				
197A: Troxel-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.16		
	Low strength	1.00	saturated zone			
			Cutbanks cave	0.10		
201A: Gilford-----	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	Cutbanks cave	1.00		
206A: Thorp-----	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	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
219A: Millbrook---	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to	1.00	Depth to	1.00
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.94	Cutbanks cave	1.00		
	saturated zone					
	Shrink-swell	0.50				
223B: Varna-----	Very limited		Very limited		Not limited	
	Low strength	1.00	Depth to	1.00		
	Shrink-swell	0.50	saturated zone			
	Frost action	0.50	Depth to dense	0.50		
	Depth to	0.16	layer			
	saturated zone		Too clayey	0.03		
223C2: Varna-----	Very limited		Very limited		Not limited	
	Low strength	1.00	Depth to	1.00		
	Shrink-swell	0.50	saturated zone			
	Frost action	0.50	Depth to dense	0.50		
	Depth to	0.16	layer			
	saturated zone					

Table 18b.--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
223D2: Varna-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Slope	0.04
	Shrink-swell	0.50	saturated zone			
	Frost action	0.50	Depth to dense	0.50		
	Depth to	0.16	layer			
	saturated zone		Slope	0.04		
	Slope	0.04				
228B: Nappanee----	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to	1.00	Depth to	1.00
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.94	Depth to dense	0.50		
	saturated zone		layer			
	Shrink-swell	0.50	Too clayey	0.32		
228C2: Nappanee----	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to	1.00	Depth to	1.00
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.94	Depth to dense	0.50	Droughty	0.01
	saturated zone		layer			
	Shrink-swell	0.50	Too clayey	0.32		
232A: Ashkum-----	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				
	Low strength	1.00				
	Shrink-swell	1.00				
235A: Bryce-----	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	Too clayey	0.50	Too clayey	1.00
	Low strength	1.00				
	Shrink-swell	1.00				
238A: Rantoul-----	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	Too clayey	0.59	Too clayey	1.00
	Low strength	1.00				
	Shrink-swell	1.00				
240C2: Plattville--	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to hard	0.42		
	Shrink-swell	0.50	bedrock			
	Frost action	0.50				

Table 18b.--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
241C3: Chatsworth--	Very limited Low strength Shrink-swell Frost action Depth to saturated zone	 1.00 0.50 0.50 0.08	Very limited Depth to saturated zone Depth to dense layer Cutbanks cave	 1.00 0.50 0.10	Very limited Droughty Too clayey Depth to saturated zone	 1.00 1.00 0.08
241D3: Chatsworth--	Very limited Low strength Shrink-swell Frost action Depth to saturated zone Slope	 1.00 0.50 0.50 0.08 0.04	Very limited Depth to saturated zone Depth to dense layer Too clayey Slope	 1.00 0.50 0.32 0.04	Very limited Droughty Too clayey Depth to saturated zone Slope	 1.00 1.00 0.08 0.04
241E3: Chatsworth--	Very limited Low strength Slope Shrink-swell Frost action Depth to saturated zone	 1.00 1.00 0.50 0.50 0.08	Very limited Depth to saturated zone Slope Depth to dense layer Too clayey	 1.00 1.00 1.00 0.50 0.32	Very limited Droughty Slope Too clayey Depth to saturated zone	 1.00 1.00 1.00 0.08
241F: Chatsworth--	Very limited Slope Low strength Shrink-swell Frost action Depth to saturated zone	 1.00 1.00 0.50 0.50 0.08	Very limited Slope Depth to saturated zone Depth to dense layer Too clayey	 1.00 1.00 0.50 0.32	Very limited Slope Droughty Depth to saturated zone	 1.00 1.00 0.08
290A, 290B: Warsaw-----	Somewhat limited Shrink-swell Frost action Low strength	 0.50 0.50 0.22	Very limited Cutbanks cave	 1.00	Not limited	
290C2: Warsaw-----	Somewhat limited Frost action	 0.50	Very limited Cutbanks cave	 1.00	Not limited	
293A, 293B: Andres-----	Very limited Low strength Depth to saturated zone Shrink-swell Frost action	 1.00 0.78 0.50 0.50	Very limited Depth to saturated zone	 1.00	Somewhat limited Depth to saturated zone	 0.78
294A, 294B: Symerton----	Somewhat limited Shrink-swell Frost action Depth to saturated zone	 0.50 0.50 0.16	Very limited Depth to saturated zone	 1.00	Not limited	

Table 18b.--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
294C2: Symerton----	Somewhat limited Shrink-swell Frost action Depth to saturated zone	0.50 0.50 0.16	Very limited Depth to saturated zone	1.00	Not limited	
295A, 295B: Mokena-----	Very limited Low strength Depth to saturated zone Shrink-swell Frost action	1.00 0.75 0.50 0.50	Very limited Depth to saturated zone Too clayey	1.00 0.50	Somewhat limited Depth to saturated zone	0.75
298A, 298B, 298B2: Beecher----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Depth to dense layer	1.00 0.50	Very limited Depth to saturated zone	1.00
311C: Ritchey-----	Very limited Depth to hard bedrock Low strength Shrink-swell Frost action	1.00 1.00 0.50 0.50	Very limited Depth to hard bedrock	1.00	Very limited Depth to bedrock Droughty	1.00 0.47
311D: Ritchey-----	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 Slope	1.00 0.04	Very limited Depth to bedrock Droughty Slope	1.00 0.57 0.04
314A: Joliet-----	Very limited Depth to hard bedrock Ponding Depth to saturated zone Frost action Low strength	1.00 1.00 1.00 1.00 1.00 1.00	Very limited Depth to hard bedrock Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to bedrock Ponding Depth to saturated zone Droughty	1.00 1.00 1.00 0.48
315A, 315B: Channahon---	Very limited Depth to hard bedrock Low strength Shrink-swell Frost action	1.00 1.00 0.50 0.50	Very limited Depth to hard bedrock	1.00	Very limited Depth to bedrock Droughty	1.00 0.61

Table 18b.--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
315C2: Channahon---	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
	Low strength	1.00			Droughty	0.88
	Shrink-swell	0.50				
	Frost action	0.50				
316A: Romeo-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00			Droughty	1.00
	Low strength	1.00			Content of large stones	0.01
317A: Millsdale---	Very limited		Very limited		Very limited	
	Ponding	1.00	Depth to hard bedrock	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Depth to saturated zone	1.00	Depth to bedrock	0.42
	Low strength	1.00				
	Shrink-swell	1.00				
318A, 318B: Lorenzo-----	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.01
318C2: Lorenzo-----	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.09
318D2: Lorenzo-----	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.24
	Slope	0.04	Slope	0.04	Slope	0.04
320A, 320B, 320B2: Frankfort--	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00	Too clayey	0.32		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
320C2: Frankfort---	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00	Too clayey	0.32		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
325A, 325B: Dresden-----	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				

Table 18b.--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
325C2: Dresden-----	Somewhat limited Shrink-swell Frost action	0.50 0.50	Very limited Cutbanks cave	1.00	Not limited	
327A, 327B: Fox-----	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Not limited	
327C2: Fox-----	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Not limited	
329A: Will-----	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
330A: Peotone-----	Very limited Ponding Depth to saturated zone Frost action Low strength Shrink-swell	1.00 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 1.00 0.02	Very limited Ponding Depth to saturated zone	1.00 1.00
343A: Kane-----	Very limited Low strength Depth to saturated zone Shrink-swell Frost action	1.00 0.75 0.50 0.50	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00	Somewhat limited Depth to saturated zone	0.75
356A: Elpaso-----	Very limited Ponding Depth to saturated zone Frost action Low strength Shrink-swell	1.00 1.00 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
369A, 369B: Waupecan----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Very limited Cutbanks cave	1.00	Not limited	
380A: Fieldon-----	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00

Table 18b.--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
387B: Ockley-----	Somewhat limited		Very limited		Not limited	
	Low strength	0.78	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
403D: Elizabeth---	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
	Low strength	1.00	Cutbanks cave	0.10	Droughty	1.00
	Frost action	0.50	Slope	0.04	Slope	0.04
	Slope	0.04				
403E, 403F: Elizabeth---	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10	Droughty	0.75
	Shrink-swell	0.50				
	Frost action	0.50				
440A, 440B: Jasper-----	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
440C2: Jasper-----	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
494B: Kankakee---	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	0.10	Content of large stones	0.01
	Content of large stones	0.01	Content of large stones	0.01		
513A: Granby-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.01
523A: Dunham-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 18b.--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
526A: Grundelein--	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 1.00	Somewhat limited Depth to saturated zone	 0.75
530B: Ozaukee-----	Very limited Low strength Shrink-swell Frost action Depth to saturated zone	 1.00 0.50 0.50 0.08	Somewhat limited Depth to saturated zone Depth to dense layer Too clayey	 0.99 0.50 0.02	Not limited	
530C2, 530C3: Ozaukee-----	Very limited Low strength Shrink-swell Frost action Depth to saturated zone	 1.00 0.50 0.50 0.08	Very limited Depth to saturated zone Depth to dense layer Too clayey	 1.00 0.50 0.02	Not limited	
530D2, 530D3: Ozaukee-----	Very limited Low strength Shrink-swell Frost action Depth to saturated zone Slope	 1.00 0.50 0.50 0.08 0.04	Very limited Depth to saturated zone Depth to dense layer Slope Too clayey	 1.00 0.50 0.04 0.02	Somewhat limited Slope	 0.04
530E2, 530F: Ozaukee-----	Very limited Low strength Slope Shrink-swell Frost action Depth to saturated zone	 1.00 1.00 0.50 0.50 0.08	Very limited Depth to saturated zone Slope Depth to dense layer Too clayey	 1.00 1.00 0.50 0.02	Very limited Slope	 1.00
531B: Markham-----	Very limited Low strength Frost action Shrink-swell Depth to saturated zone	 1.00 0.50 0.50 0.03	Very limited Depth to saturated zone Too clayey	 1.00 0.02	Not limited	
531C2: Markham-----	Very limited Low strength Shrink-swell Frost action Depth to saturated zone	 1.00 0.50 0.50 0.03	Very limited Depth to saturated zone Too clayey	 1.00 0.02	Somewhat limited	

Table 18b.--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
531D2: Markham-----	Very limited Low strength Shrink-swell Frost action Slope Depth to saturated zone	 1.00 0.50 0.50 0.04 0.02	Very limited Depth to saturated zone Slope Too clayey	 1.00 0.04 0.02	Somewhat limited Slope	 0.04
541A, 541B: Graymont----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Depth to saturated zone	 1.00	Not limited	
541C2: Graymont----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Depth to saturated zone	 1.00	Not limited	
560D2: St. Clair---	Very limited Low strength Shrink-swell Frost action Slope	 1.00 0.50 0.50 0.04	Somewhat limited Depth to saturated zone Too clayey Depth to dense layer Slope	 0.99 0.68 0.50 0.04	Somewhat limited Slope	 0.04
560E: St. Clair---	Very limited Low strength Slope Shrink-swell Frost action Depth to saturated zone	 1.00 1.00 0.50 0.50 0.08	Very limited Depth to saturated zone Slope Depth to dense layer Too clayey	 1.00 1.00 0.50 0.32	Very limited Slope Droughty	 1.00 0.24
570B: Martinsville	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	
570C2: Martinsville	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	
570D2: Martinsville	Somewhat limited Shrink-swell Frost action Slope	 0.50 0.50 0.04	Very limited Cutbanks cave Slope	 1.00 0.04	Somewhat limited Slope	 0.04
570E2, 570F: Martinsville	Very limited Slope Shrink-swell Frost action	 1.00 0.50 0.50	Very limited Cutbanks cave Slope	 1.00 1.00	Very limited Slope	 1.00

Table 18b.--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
594A: Reddick-----	Very limited Ponding Depth to saturated zone Frost action Low strength Shrink-swell	 1.00 1.00 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	 1.00 1.00 	Very limited Ponding Depth to saturated zone	 1.00 1.00
614A, 614B: Chenoa-----	Very limited Low strength Shrink-swell Depth to saturated zone Frost action	 1.00 1.00 0.75 0.50	Very limited Depth to saturated zone	 1.00 	Somewhat limited Depth to saturated zone	 0.75
688B: Braidwood---	Somewhat limited Frost action	 0.50	Very limited Cutbanks cave Depth to dense layer	 1.00 0.50 	Not limited	
688D: Braidwood---	Somewhat limited Slope Frost action	 0.91 0.50	Very limited Cutbanks cave Slope Depth to dense layer	 1.00 0.91 0.50 	Somewhat limited Slope	 0.91
688G: Braidwood---	Very limited Slope Frost action	 1.00 0.50	Very limited Slope Cutbanks cave Depth to dense layer	 1.00 1.00 0.50 	Very limited Slope	 1.00
719A, 719B: Symerton----	Somewhat limited Shrink-swell Frost action Depth to saturated zone	 0.50 0.50 0.19 	Very limited Depth to saturated zone	 1.00 	Not limited	
719C2: Symerton----	Somewhat limited Shrink-swell Frost action Depth to saturated zone	 0.50 0.50 0.19 	Very limited Depth to saturated zone	 1.00 	Not limited	
740A: Darroch-----	Very limited Frost action Depth to saturated zone	 1.00 0.75 	Very limited Depth to saturated zone Cutbanks cave	 1.00 0.10 	Somewhat limited Depth to saturated zone	 0.75
741B: Oakville----	Not limited		Very limited Cutbanks cave	 1.00 	Somewhat limited Droughty	 0.34

Table 18b.--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
741D: Oakville----	Somewhat limited Slope	0.04	Very limited Cutbanks cave Slope	1.00 0.04	Somewhat limited Droughty Slope	0.42 0.04
741E, 741F: Oakville----	Very limited Slope	1.00	Very limited Cutbanks cave Slope	1.00 1.00	Very limited Slope Droughty	1.00 0.43
792A, 792B: Bowes-----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Very limited Cutbanks cave	1.00	Not limited	
802B: Orthents----	Somewhat limited Shrink-swell Frost action Low strength	0.50 0.50 0.22	Somewhat limited Depth to saturated zone	0.47	Not limited	
802D: Orthents----	Somewhat limited Shrink-swell Frost action Low strength Slope	0.50 0.50 0.22 0.04	Somewhat limited Depth to saturated zone Slope	0.47 0.04	Somewhat limited Slope	0.04
805B: Orthents----	Very limited Low strength Shrink-swell Frost action	1.00 1.00 0.50	Somewhat limited Depth to saturated zone Too clayey	0.99 0.32	Very limited Too clayey Droughty	1.00 0.48
830: Landfills---	Not rated		Not rated		Not rated	
864: Pits, quarry	Not rated		Not rated		Not rated	
865: Pits, gravel	Not rated		Not rated		Not rated	
903A: Muskego-----	Very limited Ponding Depth to saturated zone Subsidence Frost action	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
Houghton----	Very limited Ponding Depth to saturated zone Subsidence Frost action	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Very limited Ponding; Content of organic matter Depth to saturated zone	1.00 1.00 1.00

Table 18b.--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
969E2, 969F:						
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	1.00
					Gravel content	0.02
1067A:						
Harpster----	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				
	Low strength	1.00				
	Shrink-swell	0.50				
1082A:						
Millington--	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				
	Low strength	1.00				
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	Content of	1.00
	saturated zone		saturated zone		organic matter	
	Subsidence	1.00	Content of	1.00	Depth to	1.00
	Frost action	1.00	organic matter		saturated zone	
1201A:						
Gilford-----	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	Cutbanks cave	1.00		
1903A:						
Muskego-----	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	Content of	1.00		
	Frost action	1.00	organic matter			
Houghton----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to	1.00	Depth to	1.00	Content of	1.00
	saturated zone		saturated zone		organic matter	
	Subsidence	1.00	Content of	1.00	Depth to	1.00
	Frost action	1.00	organic matter		saturated zone	

Table 18b.--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
3082A: 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	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00				
	Low strength	1.00				
3107A: Sawmill-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00				
	Low strength	1.00				
3314A: Joliet-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00			Droughty	0.54
3316A: Romeo-----	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00			Droughty	1.00
3451A: Lawson-----	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.75
	Low strength	0.78				
	Depth to saturated zone	0.75				
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
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00				
	Low strength	1.00				
8321A: Du Page-----	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Depth to saturated zone	0.24		
	Frost action	0.50	Cutbanks cave	0.10		

Table 18b.--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
8451A:						
Lawson-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Flooding	1.00	saturated zone		saturated zone	
	Low strength	0.78	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	0.75				
W:						
Water-----	Not rated		Not rated		Not rated	

Table 19a.--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
23A: Blount-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Not limited	
23B: Blount-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Slope	0.08
49A: Watseka-----	Very limited Depth to saturated zone Poor filtering capacity	1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 1.00
67A: Harpster-----	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.46	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.53
69A: Milford-----	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
88D: Sparta-----	Very limited Poor filtering capacity Slope	1.00 0.04	Very limited Seepage Slope	1.00 1.00
91A: Swygert-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Not limited	

Table 19a.--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
91B2: Swygert-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Slope	0.08
91C2: Swygert-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Slope Depth to saturated zone	0.68 0.01
93C2: Rodman-----	Very limited Poor filtering capacity	1.00	Very limited Seepage Slope	1.00 0.68
93D2: Rodman-----	Very limited Poor filtering capacity Slope	1.00 0.04	Very limited Seepage Slope	1.00 1.00
98B: Ade-----	Very limited Poor filtering capacity	1.00	Very limited Seepage Slope	1.00 0.18
102A: La Hogue-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 1.00
103A: Houghton-----	Very limited Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
125A: Selma-----	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.46	Very limited Ponding Seepage Depth to saturated zone	1.00 1.00 1.00
132A: Starks-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 1.00

Table 19a.--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
134A: Camden-----	Somewhat limited Restricted permeability	0.46	Very limited Seepage	1.00
134B: Camden-----	Somewhat limited Restricted permeability	0.46	Very limited Seepage Slope	1.00 0.18
134C2: Camden-----	Somewhat limited Restricted permeability	0.46	Very limited Slope Seepage	1.00 1.00
146A: Elliott-----	Very limited Depth to saturated zone	1.00	Not limited	
146B: Elliott-----	Very limited Depth to saturated zone	1.00	Somewhat limited Slope	0.08
146B2: Elliott-----	Very limited Depth to saturated zone Restricted permeability	1.00 1.00	Somewhat limited Slope	0.08
149A: Brenton-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 1.00
150B: Onarga-----	Very limited Poor filtering capacity	1.00	Very limited Seepage Slope	1.00 0.18
150C2: Onarga-----	Very limited Poor filtering capacity	1.00	Very limited Seepage Slope	1.00 1.00
151A: Ridgeville-----	Very limited Depth to saturated zone Poor filtering capacity	1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 1.00

Table 19a.--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
152A: Drummer-----	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.46	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
153A: Pella-----	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.46	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
184A: Roby-----	Very limited Depth to saturated zone Poor filtering capacity	1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 1.00
189A: Martinton-----	Very limited Depth to saturated zone Restricted permeability	1.00 1.00	Very limited Depth to saturated zone	1.00
197A: Troxel-----	Somewhat limited Restricted permeability Depth to saturated zone	0.46 0.43	Somewhat limited Seepage	0.53
201A: Gilford-----	Very limited Ponding Depth to saturated zone Poor filtering capacity	1.00 1.00 1.00	Very limited Ponding Seepage Depth to saturated zone	1.00 1.00 1.00
206A: Thorp-----	Very limited Restricted permeability Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
219A: Millbrook-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 1.00

Table 19a.--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
223B: Varna-----	Very limited Depth to saturated zone Restricted permeability	1.00 1.00	Somewhat limited Slope	0.08
223C2: Varna-----	Very limited Depth to saturated zone Restricted permeability	1.00 1.00	Somewhat limited Slope	0.68
223D2: Varna-----	Very limited Restricted permeability Depth to saturated zone Slope	1.00 1.00 0.04	Very limited Slope	1.00
228B: Nappanee-----	Very limited Depth to saturated zone	1.00	Somewhat limited Slope	0.08
228C2: Nappanee-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Slope	0.68
232A: Ashkum-----	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
235A: Bryce-----	Very limited Restricted permeability Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
238A: Rantoul-----	Very limited Restricted permeability Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00

Table 19a.--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
240C2: Plattville-----	Somewhat limited		Somewhat limited	
	Depth to bedrock	0.78	Slope	0.68
	Restricted permeability	0.46	Seepage	0.53
			Depth to hard bedrock	0.42
241C3: Chatsworth-----	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Slope	0.68
241D3: Chatsworth-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04		
241E3, 241F: Chatsworth-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00		
290A: Warsaw-----	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46		
290B: Warsaw-----	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	0.08
290C2: Warsaw-----	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	0.68
293A: Andres-----	Very limited		Somewhat limited	
	Restricted permeability	1.00	Seepage	0.53
	Depth to saturated zone	1.00		
293B: Andres-----	Very limited		Somewhat limited	
	Restricted permeability	1.00	Seepage	0.53
	Depth to saturated zone	1.00	Slope	0.18

Table 19a.--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
294A: Symerton-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Seepage	0.53
294B: Symerton-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Seepage Slope	0.53 0.18
294C2: Symerton-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Slope Seepage	1.00 0.53
295A: Mokena-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Seepage	0.53
295B: Mokena-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Seepage Slope	0.53 0.08
298A: Beecher-----	Very limited Depth to saturated zone	1.00	Not limited	
298B, 298B2: Beecher-----	Very limited Depth to saturated zone Restricted permeability	1.00 1.00	Somewhat limited Slope	0.08
311C: Ritchey-----	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 0.68 0.53
311D: Ritchey-----	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53

Table 19a.--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
314A: Joliet-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Seepage	0.53
315A: Channahon-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
			Seepage	0.53
315B: Channahon-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
			Seepage	0.53
			Slope	0.08
315C2: Channahon-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
			Slope	0.68
			Seepage	0.53
316A: Romeo-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
317A: Millsdale-----	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
318A: Lorenzo-----	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
318B: Lorenzo-----	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
			Slope	0.08
318C2: Lorenzo-----	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
			Slope	0.68

Table 19a.--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
318D2: Lorenzo-----	Very limited Poor filtering capacity Slope	1.00 0.04	Very limited Seepage Slope	1.00 1.00
320A: Frankfort-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Not limited	
320B, 320B2: Frankfort-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Slope	0.08
320C2: Frankfort-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Slope	0.68
325A: Dresden-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage	1.00
325B: Dresden-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage Slope	1.00 0.08
325C2: Dresden-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage Slope	1.00 0.68
327A: Fox-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage	1.00
327B: Fox-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage Slope	1.00 0.08

Table 19a.--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
327C2: Fox-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage Slope	1.00 0.68
329A: Will-----	Very limited Ponding Depth to saturated zone Poor filtering capacity Restricted permeability	1.00 1.00 1.00 0.46	Very limited Ponding Seepage Depth to saturated zone	1.00 1.00 1.00
330A: Peotone-----	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
343A: Kane-----	Very limited Depth to saturated zone Poor filtering capacity Restricted permeability	1.00 1.00 0.46	Very limited Seepage Depth to saturated zone	1.00 1.00
356A: Elpaso-----	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.53
369A: Waupecan-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage	1.00
369B: Waupecan-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage Slope	1.00 0.08

Table 19a.--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
380A: Fieldon-----	Very limited Ponding Depth to saturated zone Poor filtering capacity Restricted permeability	 1.00 1.00 1.00 0.46	Very limited Ponding Seepage Depth to saturated zone	 1.00 1.00 1.00
387B: Ockley-----	Very limited Poor filtering capacity Restricted permeability	 1.00 0.46	Very limited Seepage Slope	 1.00 0.08
403D: Elizabeth-----	Very limited Depth to bedrock Slope	 1.00 0.04	Very limited Depth to hard bedrock Slope	 1.00 1.00
403E, 403F: Elizabeth-----	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	 1.00 1.00 0.53
440A: Jasper-----	Somewhat limited Restricted permeability	 0.46	Very limited Seepage	 1.00
440B: Jasper-----	Somewhat limited Restricted permeability	 0.46	Very limited Seepage Slope	 1.00 0.18
440C2: Jasper-----	Somewhat limited Restricted permeability	 0.46	Very limited Slope Seepage	 1.00 1.00
494B: Kankakee-----	Somewhat limited Content of large stones	 0.01	Very limited Seepage Slope	 1.00 0.08
513A: Granby-----	Very limited Ponding Depth to saturated zone Poor filtering capacity	 1.00 1.00 1.00	Very limited Ponding Seepage Depth to saturated zone	 1.00 1.00 1.00

Table 19a.--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
523A: Dunham-----	Very limited Ponding Depth to saturated zone Poor filtering capacity Restricted permeability	1.00 1.00 1.00 0.46	Very limited Ponding Seepage Depth to saturated zone	1.00 1.00 1.00
526A: Grundelein-----	Very limited Depth to saturated zone Poor filtering capacity Restricted permeability	1.00 1.00 0.46	Very limited Seepage Depth to saturated zone	1.00 1.00
530B: Ozaukee-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Slope	0.96 0.08
530C2, 530C3: Ozaukee-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Slope Depth to saturated zone	0.68 0.44
530D2, 530D3: Ozaukee-----	Very limited Restricted permeability Depth to saturated zone Slope	1.00 1.00 0.04	Very limited Slope Depth to saturated zone	1.00 0.44
530E2, 530F: Ozaukee-----	Very limited Restricted permeability Depth to saturated zone Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.44
531B: Markham-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone Slope	0.81 0.08
531C2: Markham-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Slope Depth to saturated zone	0.68 0.56

Table 19a.--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
531D2: Markham-----	Very limited Restricted permeability Depth to saturated zone Slope	1.00 1.00 0.04	Very limited Slope Depth to saturated zone	1.00 0.64
541A: Graymont-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone Seepage	0.88 0.53
541B: Graymont-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone Seepage Slope	0.96 0.53 0.18
541C2: Graymont-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 0.81 0.53
560D2: St. Clair-----	Very limited Depth to saturated zone Slope	1.00 0.04	Very limited Slope Depth to saturated zone	1.00 0.96
560E: St. Clair-----	Very limited Restricted permeability Depth to saturated zone Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.44
570B: Martinsville-----	Somewhat limited Restricted permeability	0.46	Somewhat limited Seepage Slope	0.53 0.08
570C2: Martinsville-----	Somewhat limited Restricted permeability	0.46	Very limited Seepage Slope	1.00 0.68
570D2: Martinsville-----	Somewhat limited Restricted permeability Slope	0.46 0.04	Very limited Slope Seepage	1.00 1.00

Table 19a.--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
570E2, 570F: Martinsville-----	Very limited Slope Restricted permeability	1.00 0.46	Very limited Slope Seepage	1.00 0.53
594A: Reddick-----	Very limited Restricted permeability Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.53
614A: Chenoa-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Seepage Depth to saturated zone	0.53 0.01
614B: Chenoa-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Seepage Slope Depth to saturated zone	0.53 0.18 0.01
688B: Braidwood-----	Very limited Restricted permeability	1.00	Somewhat limited Seepage Slope	0.53 0.32
688D: Braidwood-----	Very limited Restricted permeability Slope	1.00 0.91	Very limited Slope Seepage	1.00 0.53
688G: Braidwood-----	Very limited Slope Restricted permeability	1.00 1.00	Very limited Slope Seepage	1.00 0.53
719A: Symerton-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Seepage	0.53
719B: Symerton-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Seepage Slope	0.53 0.18

Table 19a.--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
719C2: Symerton-----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Slope Seepage	1.00 0.53
740A: Darroch-----	Very limited Depth to saturated zone Restricted permeability	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 1.00
741B: Oakville-----	Very limited Poor filtering capacity	1.00	Very limited Seepage Slope	1.00 0.18
741D: Oakville-----	Very limited Poor filtering capacity Slope	1.00 0.04	Very limited Seepage Slope	1.00 1.00
741E, 741F: Oakville-----	Very limited Poor filtering capacity Slope	1.00 1.00	Very limited Slope Seepage	1.00 1.00
792A: Bowes-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage	1.00
792B: Bowes-----	Very limited Poor filtering capacity Restricted permeability	1.00 0.46	Very limited Seepage Slope	1.00 0.08
802B: Orthents, loamy----	Very limited Restricted permeability Depth to saturated zone	1.00 0.94	Somewhat limited Depth to saturated zone Slope	0.39 0.18
802D: Orthents, loamy----	Very limited Restricted permeability Depth to saturated zone Slope	1.00 0.94 0.04	Very limited Slope Depth to saturated zone	1.00 0.39

Table 19a.--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
805B: Orthents, clayey----	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Slope	0.08
830: Landfills-----	Not rated		Not rated	
864: Pits, quarry-----	Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated	
903A: Muskego-----	Very limited Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
Houghton-----	Very limited Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
969E2, 969F: Casco-----	Very limited Poor filtering capacity Slope	1.00 1.00	Very limited Slope Seepage	1.00 1.00
Rodman-----	Very limited Poor filtering capacity Slope	1.00 1.00	Very limited Slope Seepage	1.00 1.00
1067A: Harpster-----	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.46	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.53
1082A: Millington-----	Very limited Flooding Ponding Depth to saturated zone Restricted permeability	1.00 1.00 1.00 0.46	Very limited Ponding Flooding Depth to saturated zone Seepage	1.00 1.00 1.00 0.53

Table 19a.--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
1103A: Houghton-----	Very limited Ponding Depth to saturated zone Subsidence	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00
1201A: Gilford-----	Very limited Ponding Depth to saturated zone Poor filtering capacity	 1.00 1.00 1.00	Very limited Ponding Seepage Depth to saturated zone	 1.00 1.00 1.00
1903A: Muskego-----	Very limited Restricted permeability Ponding Depth to saturated zone Subsidence	 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00
Houghton-----	Very limited Ponding Depth to saturated zone Subsidence	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00
3082A: Millington-----	Very limited Flooding Ponding Depth to saturated zone Restricted permeability	 1.00 1.00 1.00 0.46	Very limited Ponding Flooding Depth to saturated zone Seepage	 1.00 1.00 1.00 0.53
3107A: Sawmill-----	Very limited Flooding Ponding Depth to saturated zone Restricted permeability	 1.00 1.00 1.00 0.46	Very limited Ponding Flooding Depth to saturated zone Seepage	 1.00 1.00 1.00 0.53
3314A: Joliet-----	Very limited Flooding Depth to bedrock Ponding Depth to saturated zone	 1.00 1.00 1.00 1.00	Very limited Depth to hard bedrock Ponding Flooding Depth to saturated zone Seepage	 1.00 1.00 1.00 1.00 0.53

Table 19a.--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
3316A: Romeo-----	Very limited Flooding Depth to bedrock Ponding Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited Depth to hard bedrock Ponding Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00
3451A: Lawson-----	Very limited Flooding Depth to saturated zone Restricted permeability	1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 0.53
8082A: Millington-----	Very limited Flooding Ponding Depth to saturated zone Restricted permeability	1.00 1.00 1.00 0.46	Very limited Ponding Flooding Depth to saturated zone Seepage	1.00 1.00 1.00 0.53
8321A: Du Page-----	Very limited Flooding Depth to saturated zone Restricted permeability	1.00 0.65 0.46	Very limited Flooding Seepage Depth to saturated zone	1.00 0.53 0.02
8451A: Lawson-----	Very limited Flooding Depth to saturated zone Restricted permeability	1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 0.53
W: Water-----	Not rated		Not rated	

Table 19b.--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
23A, 23B: Blount-----	Very limited Depth to saturated zone Too clayey	1.00 1.00	Very limited Depth to saturated zone	1.00	Very limited Too clayey Depth to saturated zone	1.00 1.00
49A: Watseka-----	Very limited Depth to saturated zone Seepage 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	1.00 1.00 1.00
67A: Harpster-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50
69A: Milford-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50
88D: Sparta-----	Very limited Seepage Too sandy Slope	1.00 1.00 0.04	Very limited Seepage Slope	1.00 0.04	Very limited Too sandy Seepage Slope	1.00 1.00 0.04
91A, 91B2: Swygert-----	Very limited Depth to saturated zone Too clayey	1.00 1.00	Very limited Depth to saturated zone	1.00	Very limited Too clayey Depth to saturated zone	1.00 1.00
91C2: Swygert-----	Very limited Depth to saturated zone Too clayey	1.00 1.00	Very limited Depth to saturated zone	1.00	Very limited Too clayey Depth to saturated zone	1.00 1.00
93C2: Rodman-----	Very limited Seepage Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Seepage Gravel content Too sandy	1.00 1.00 0.50

Table 19b.--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
93D2:						
Rodman-----	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00	Slope	0.04	Gravel content	1.00
	Slope	0.04			Too sandy	0.50
					Slope	0.04
98B:						
Ade-----	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
102A:						
La Hogue-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Seepage	1.00				
103A:						
Houghton-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Ponding	1.00	Ponding	1.00
	saturated zone		Depth to	1.00	Depth to	1.00
	Ponding	1.00	saturated zone		saturated zone	
	Content of	1.00	Seepage	1.00	Content of	1.00
	organic matter				organic matter	
	Seepage	1.00			Seepage	0.16
125A:						
Selma-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Ponding	1.00	Ponding	1.00
	saturated zone		Depth to	1.00	Depth to	1.00
	Ponding	1.00	saturated zone		saturated zone	
	Seepage	1.00			Seepage	0.52
132A:						
Starks-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Seepage	1.00			Too clayey	0.50
	Too sandy	1.00			Too sandy	0.50
	Too clayey	0.50			Seepage	0.22
134A, 134B:						
Camden-----	Very limited		Not limited		Somewhat limited	
	Seepage	1.00			Too clayey	0.50
134C2:						
Camden-----	Very limited		Not limited		Somewhat limited	
	Too sandy	1.00			Too clayey	0.50
	Seepage	1.00			Seepage	0.22
146A, 146B, 146B2:						
Elliott-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Too clayey	0.50			Too clayey	0.50

Table 19b.--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
149A: Brenton-----	Very limited Depth to saturated zone Seepage 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
150B, 150C2: Onarga-----	Very limited Seepage Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00 1.00
151A: Ridgeville-----	Very limited Depth to saturated zone Seepage	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.22
152A: Drummer-----	Very limited Depth to saturated zone Ponding Seepage Too clayey	1.00 1.00 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50
153A: Pella-----	Very limited Depth to saturated zone Ponding Seepage Too clayey	1.00 1.00 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50
184A: Roby-----	Very limited Depth to saturated zone Seepage Too sandy	1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 1.00	Very limited Too sandy Depth to saturated zone Seepage	1.00 1.00 1.00
189A: Martinton-----	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
197A: Troxel-----	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
201A: Gilford-----	Very limited Depth to saturated zone Ponding Seepage Too sandy	1.00 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage Too sandy	1.00 1.00 1.00 1.00

Table 19b.--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
206A:						
Thorp-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Ponding	1.00	Ponding	1.00
	saturated zone		Depth to	1.00	Depth to	1.00
	Ponding	1.00	saturated zone		saturated zone	
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50				
219A:						
Millbrook-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50				
223B, 223C2:						
Varna-----	Very limited		Somewhat limited		Very limited	
	Depth to	1.00	Depth to	0.32	Too clayey	1.00
	saturated zone		saturated zone		Depth to	0.25
	Too clayey	0.50			saturated zone	
223D2:						
Varna-----	Very limited		Somewhat limited		Very limited	
	Depth to	1.00	Depth to	0.32	Too clayey	1.00
	saturated zone		saturated zone		Depth to	0.25
	Too clayey	0.50	Slope	0.04	saturated zone	
	Slope	0.04			Slope	0.04
228B, 228C2:						
Nappanee-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Too clayey	1.00
	saturated zone		saturated zone		Depth to	1.00
	Too clayey	1.00			saturated zone	
232A:						
Ashkum-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Ponding	1.00	Ponding	1.00
	saturated zone		Depth to	1.00	Depth to	1.00
	Ponding	1.00	saturated zone		saturated zone	
	Too clayey	0.50			Too clayey	0.50
235A:						
Bryce-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Ponding	1.00	Ponding	1.00
	saturated zone		Depth to	1.00	Depth to	1.00
	Ponding	1.00	saturated zone		saturated zone	
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
238A:						
Rantoul-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Ponding	1.00	Ponding	1.00
	saturated zone		Depth to	1.00	Depth to	1.00
	Ponding	1.00	saturated zone		saturated zone	
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
240C2:						
Plattville-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.42	Depth to bedrock	0.42

Table 19b.--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
241C3: Chatsworth-----	Very limited Too clayey Depth to saturated zone	1.00 0.98	Somewhat limited Depth to saturated zone	0.56	Very limited Too clayey Hard to compact Depth to saturated zone	1.00 1.00 0.75
241D3: Chatsworth-----	Very limited Too clayey Depth to saturated zone Slope	1.00 0.98 0.04	Somewhat limited Depth to saturated zone Slope	0.56 0.04	Very limited Too clayey Hard to compact Depth to saturated zone Slope	1.00 1.00 0.75 0.04
241E3: Chatsworth-----	Very limited Too clayey Slope Depth to saturated zone	1.00 1.00 0.98	Very limited Slope Depth to saturated zone	1.00 0.56	Very limited Too clayey Hard to compact Slope Depth to saturated zone	1.00 1.00 1.00 0.75
241F: Chatsworth-----	Very limited Slope Depth to saturated zone Too clayey	1.00 0.98 0.50	Very limited Slope Depth to saturated zone	1.00 0.56	Very limited Slope Hard to compact Depth to saturated zone Too clayey	1.00 1.00 0.75 0.50
290A, 290B, 290C2: Warsaw-----	Very limited Seepage Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Seepage Too sandy Gravel content	1.00 0.50 0.37
293A, 293B: 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
294A, 294B, 294C2: Symerton-----	Somewhat limited Depth to saturated zone Too clayey	0.86 0.50	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Too clayey Depth to saturated zone	0.50 0.38
295A, 295B: Mokena-----	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
298A, 298B, 298B2: Beecher-----	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 19b.--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
311C: Ritchey-----	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
311D: Ritchey-----	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	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04
314A: Joliet-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Ponding	1.00	Depth to bedrock	1.00
	saturated zone		Depth to	1.00	Ponding	1.00
	Ponding	1.00	saturated zone		Depth to	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	saturated zone	
315A, 315B, 315C2: Channahon-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
316A: Romeo-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Ponding	1.00	Depth to bedrock	1.00
	saturated zone		Depth to	1.00	Ponding	1.00
	Ponding	1.00	saturated zone		Depth to	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	saturated zone	
317A: Millsdale-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Ponding	1.00	Depth to bedrock	1.00
	saturated zone		Depth to	1.00	Ponding	1.00
	Ponding	1.00	saturated zone		Depth to	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	saturated zone	
	Too clayey	0.50			Too clayey	0.50
318A, 318B, 318C2: Lorenzo-----	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00			Gravel content	0.62
					Too sandy	0.50
318D2: Lorenzo-----	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00	Slope	0.04	Gravel content	0.79
	Slope	0.04			Too sandy	0.50
					Slope	0.04
320A, 320B, 320B2, 320C2: Frankfort-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Too clayey	1.00
	saturated zone		saturated zone		Hard to compact	1.00
	Too clayey	1.00			Depth to	1.00
					saturated zone	

Table 19b.--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
325A, 325B, 325C2: Dresden-----	Very limited Seepage Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage Gravel content	1.00 1.00 0.01
327A, 327B, 327C2: Fox-----	Very limited Seepage Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage Gravel content	1.00 1.00 0.03
329A: Will-----	Very limited Depth to saturated zone Ponding Seepage Too sandy	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too sandy Seepage Gravel content	1.00 1.00 1.00 1.00 0.05
330A: Peotone-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50
343A: Kane-----	Very limited Depth to saturated zone Seepage 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	1.00 1.00 1.00
356A: Elpaso-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50
369A: Waupecan-----	Very limited Seepage Too clayey	1.00 0.50	Very limited Seepage	1.00	Somewhat limited Too clayey	0.50
369B: Waupecan-----	Very limited Seepage Too clayey	1.00 0.50	Very limited Seepage	1.00	Somewhat limited Too clayey	0.50
380A: Fieldon-----	Very limited Depth to saturated zone Ponding Seepage Too sandy	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too sandy Seepage	1.00 1.00 1.00 1.00

Table 19b.--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
387B: Ockley-----	Very limited Seepage Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
403D: Elizabeth-----	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to bedrock Slope	1.00 0.04
403E, 403F: Elizabeth-----	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00
440A, 440B, 440C2: Jasper-----	Very limited Seepage Too clayey	1.00 0.50	Not limited		Not limited	
494B: Kankakee-----	Very limited Seepage Content of large stones	1.00 0.36	Very limited Seepage	1.00	Very limited Content of large stones Seepage	1.00 0.52
513A: Granby-----	Very limited Depth to saturated zone Ponding Seepage Too sandy	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too sandy Seepage	1.00 1.00 1.00 1.00
523A: Dunham-----	Very limited Depth to saturated zone Ponding Seepage Too clayey	1.00 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50
526A: Grundelein-----	Very limited Depth to saturated zone Seepage 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 Too clayey	1.00 1.00 1.00 0.50
530B, 530C2, 530C3: Ozaukee-----	Somewhat limited Depth to saturated zone Too clayey	0.98 0.50	Somewhat limited Depth to saturated zone	0.56	Somewhat limited Depth to saturated zone Too clayey	0.75 0.50

Table 19b.--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
530D2, 530D3: Ozaukee-----	Somewhat limited Depth to saturated zone Too clayey Slope	0.98 0.50 0.04	Somewhat limited Depth to saturated zone Slope	0.56 0.04	Somewhat limited Depth to saturated zone Too clayey Slope	0.75 0.50 0.04
530E2, 530F: Ozaukee-----	Very limited Slope Depth to saturated zone Too clayey	1.00 0.98 0.50	Very limited Slope Depth to saturated zone	1.00 0.56	Very limited Slope Depth to saturated zone Too clayey	1.00 0.75 0.50
531B, 531C2, 531D2: Markham-----	Somewhat limited Depth to saturated zone Too clayey Slope	0.93 0.50 0.04	Somewhat limited Depth to saturated zone Slope	0.36 0.04	Somewhat limited Depth to saturated zone Too clayey Slope	0.62 0.50 0.04
541A, 541B, 541C2: Graymont-----	Somewhat limited Depth to saturated zone Too clayey	0.80 0.50	Somewhat limited Depth to saturated zone	0.20	Somewhat limited Too clayey Depth to saturated zone	0.50 0.38
560D2: St. Clair-----	Very limited Too clayey Depth to saturated zone Slope	1.00 0.68 0.04	Somewhat limited Depth to saturated zone Slope	0.32 0.04	Very limited Too clayey Hard to compact Depth to saturated zone Slope	1.00 1.00 0.25 0.04
560E: St. Clair-----	Very limited Too clayey Slope Depth to saturated zone	1.00 1.00 0.98	Very limited Slope Depth to saturated zone	1.00 0.56	Very limited Too clayey Slope Depth to saturated zone	1.00 1.00 0.75
570B, 570C2: Martinsville-----	Very limited Seepage	1.00	Not limited		Not limited	
570D2: Martinsville-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Slope	0.04	Somewhat limited Seepage Slope	0.22 0.04
570E2, 570F: Martinsville-----	Very limited Slope Seepage	1.00 1.00	Very limited Slope	1.00	Very limited Slope	1.00

Table 19b.--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
594A: Reddick-----	Very limited Depth to saturated zone Ponding Too clayey	 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	 1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	 1.00 1.00 0.50
614A, 614B: Chenoa-----	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
688B: Braidwood-----	Not limited		Not limited		Not limited	
688D: Braidwood-----	Somewhat limited Slope	 0.91	Somewhat limited Slope	 0.91	Somewhat limited Slope	 0.91
688G: Braidwood-----	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
719A, 719B, 719C2: Symerton-----	Somewhat limited Depth to saturated zone Too clayey	 0.76 0.50	Somewhat limited Depth to saturated zone	 0.24	Somewhat limited Too clayey Depth to saturated zone	 0.50 0.32
740A: Darroch-----	Very limited Depth to saturated zone Seepage	 1.00 1.00	Very limited Depth to saturated zone Seepage	 1.00 1.00	Very limited Depth to saturated zone Seepage	 1.00 0.22
741B: Oakville-----	Very limited Seepage Too sandy	 1.00 1.00	Very limited Seepage	 1.00	Very limited Too sandy Seepage	 1.00 1.00
741D: Oakville-----	Very limited Seepage Too sandy Slope	 1.00 1.00 0.04	Very limited Seepage Slope	 1.00 0.04	Very limited Too sandy Seepage Slope	 1.00 1.00 0.04
741E, 741F: Oakville-----	Very limited Seepage Too sandy Slope	 1.00 1.00 1.00	Very limited Seepage Slope	 1.00 1.00	Very limited Too sandy Seepage Slope	 1.00 1.00 1.00
792A, 792B: Bowes-----	Very limited Seepage Too clayey	 1.00 0.50	Very limited Seepage	 1.00	Somewhat limited Too clayey Seepage	 0.50 0.22

Table 19b.--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
802B: Orthents, loamy-----	Very limited Depth to saturated zone	1.00	Not limited		Not limited	
802D: Orthents, loamy-----	Very limited Depth to saturated zone Slope	1.00 0.04	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04
805B: Orthents, clayey----	Very limited Too clayey Depth to saturated zone	1.00 0.68	Somewhat limited Depth to saturated zone	0.32	Very limited Too clayey Depth to saturated zone	1.00 0.25
830: Landfills-----	Not rated		Not rated		Not rated	
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
903A: Muskego-----	Very limited Depth to saturated zone Ponding Content of organic matter	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Hard to compact	1.00 1.00 1.00
Houghton-----	Very limited Depth to saturated zone Ponding Content of organic matter Seepage	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter Seepage	1.00 1.00 1.00 0.16
969E2, 969F: Casco-----	Very limited Seepage 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 0.40
Rodman-----	Very limited Seepage Too sandy Slope	1.00 1.00 1.00	Very limited Seepage Slope	1.00 1.00	Very limited Seepage Gravel content Slope Too sandy	1.00 1.00 1.00 0.50
1067A: Harpster-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50

Table 19b.--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
1082A: Millington-----	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
1103A: Houghton-----	Very limited Depth to saturated zone Ponding Content of organic matter Seepage	 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter Seepage	 1.00 1.00 1.00 0.16
1201A: Gilford-----	Very limited Depth to saturated zone Ponding Seepage Too sandy	 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage Too sandy	 1.00 1.00 1.00 0.50
1903A: Muskego-----	Very limited Depth to saturated zone Ponding Content of organic matter	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Hard to compact	 1.00 1.00 1.00
Houghton-----	Very limited Depth to saturated zone Ponding Content of organic matter Seepage	 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter Seepage	 1.00 1.00 1.00 0.16
3082A: Millington-----	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
3107A: Sawmill-----	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	Very limited Ponding Depth to saturated zone Too clayey	 1.00 1.00 0.50

Table 19b.--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
3314A: Joliet-----	Very limited Flooding Depth to saturated zone Ponding Depth to bedrock	 1.00 1.00 1.00 1.00	Very limited Flooding Ponding Depth to saturated zone Depth to bedrock	 1.00 1.00 1.00 1.00	Very limited Depth to bedrock Ponding Depth to saturated zone	 1.00 1.00 1.00
3316A: Romeo-----	Very limited Flooding Depth to saturated zone Ponding Depth to bedrock	 1.00 1.00 1.00 1.00	Very limited Flooding Ponding Depth to saturated zone Depth to bedrock	 1.00 1.00 1.00 1.00	Very limited Depth to bedrock Ponding Depth to saturated zone	 1.00 1.00 1.00
3451A: Lawson-----	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
8082A: Millington-----	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
8321A: Du Page-----	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 1.00	Not limited	
8451A: Lawson-----	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
W: Water-----	Not rated		Not rated		Not rated	

Table 20a.--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 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
23A, 23B: Blount-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
49A: Watseka-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.59
	Thickest layer	0.00	Bottom layer	0.99
67A: Harpster-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
69A: Milford-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
88D: Sparta-----	Poor		Good	
	Bottom layer	0.00	Thickest layer	0.84
	Thickest layer	0.00		
91A, 91B2, 91C2: Swygert-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
93C2, 91D2: Rodman-----	Fair		Fair	
	Thickest layer	0.06	Thickest layer	0.06
	Bottom layer	0.91	Bottom layer	0.91
98B: Ade-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.31
	Thickest layer	0.00	Bottom layer	0.97
102A: La Hogue-----	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.01
	Thickest layer	0.00	Thickest layer	0.03
103A: Houghton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Content of organic matter	0.00	Content of organic matter	0.00

Table 20a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
125A: Selma-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.06
132A: Starks-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.06
134A, 134B, 134C2: Camden-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.08
146A, 146B, 146B2: Elliott-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
149A: Brenton-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.06
150B, 150C2: Onarga-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.06
	Thickest layer	0.00	Bottom layer	0.22
151A: Ridgeville-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.04
	Thickest layer	0.00	Bottom layer	0.90
152A: Drummer-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.04
153A: Pella-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.04
184A: Roby-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.04
	Thickest layer	0.00	Bottom layer	0.17
189A: Martinton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
197A: Troxel-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 20a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
201A: Gilford-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.07
	Thickest layer	0.00	Bottom layer	0.58
206A: Thorp-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.04
219A: Millbrook-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.06
223B, 223C2, 223D2: Varna-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
228B, 228C2: Nappanee-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
232A: Ashkum-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
235A: Bryce-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
238A: Rantoul-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
240C2: Plattville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
241C3, 241D3, 241E3, 241F: Chatsworth-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
290A, 290B, 290C2: Warsaw-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.50	Bottom layer	0.50
293A, 293B: Andres-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 20a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
294A, 294B, 294C2: Symerton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
295A, 295B: Mokena-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
298A, 298B, 298B2: Beecher-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
311C, 311D: Ritchey-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
314A: Joliet-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
315A, 315B, 315C2: Channahon-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
316A: Romeo-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
317A: Millsdale-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
318A, 318B, 318C2, 318D2: Lorenzo-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.63	Bottom layer	0.63
320A, 320B, 320B2, 320C2: Frankfort-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
325A, 325B, 325C2: Dresden-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.43	Bottom layer	0.43
327A, 327B, 327C2: Fox-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.86	Bottom layer	0.86

Table 20a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
329A: Will-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.83	Bottom layer	0.83
330A: Pectone-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
343A: Kane-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.86	Bottom layer	0.86
356A: Elpaso-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
369A, 369B: Waupecan-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.43	Bottom layer	0.43
380A: Fieldon-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.06
	Thickest layer	0.00	Bottom layer	0.12
387B: Ockley-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.84	Bottom layer	0.84
403D, 403E, 403F: Elizabeth-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
440A, 440B, 440C2: Jasper-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.10
494B: Kankakee-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
513A: Granby-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.50
	Thickest layer	0.00	Bottom layer	0.90
523A: Dunham-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.67	Bottom layer	0.67

Table 20a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
526A: Grundelein-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.67	Bottom layer	0.67
530B, 530C2, 530C3, 530D2, 530D3, 530E, 530F Ozaukee-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
531B, 531C2, 531D2: Markham-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
541A, 541B, 541C2: Graymont-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
560D2: St. Clair-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
560E: St. Clair-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
570B, 570C2, 570D2, 570E2, 570F: Martinsville-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.08
594A: Reddick-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
614A, 614B: Chenoa-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
688B, 688D, 688G: Braidwood-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.03
719A, 719B, 719C2: Symerton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
740A: Darroch-----	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.01
	Thickest layer	0.00	Thickest layer	0.03

Table 20a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
741B, 741D, 741E: 741F: Oakville-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.77
	Thickest layer	0.00	Bottom layer	0.97
792A, 792B: Bowes-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.57	Bottom layer	0.57
802B, 802D: Orthents, loamy----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
805B: Orthents, clayey----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
830: Landfills-----	Not rated		Not rated	
864: Pits, quarry-----	Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated	
903A: Muskego-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
Houghton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
969E2, 969F: Casco-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.71	Bottom layer	0.71
Rodman-----	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.91	Bottom layer	0.91
1067A: Harpster-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
1082A: Millington-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 20a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
1103A: Houghton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
1201A: Gilford-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.09
	Thickest layer	0.00	Bottom layer	0.31
1903A: Muskego-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
Houghton-----	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
3314A: Joliet-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3316A: Romeo-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3451A: Lawson-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8082A: Millington-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8321A: Du Page-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8451A: Lawson-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 20a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
W: Water-----	Not rated		Not rated	

Table 20b.--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
23A, 23B: Blount-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Too acid	0.50	Depth to saturated zone	0.01	Depth to saturated zone	0.01
	Carbonate content	0.68	Shrink-swell	0.99	Hard to reclaim	0.20
	Low content of organic matter	0.68				
	Water erosion	0.90				
49A: Watseka-----	Poor		Fair		Poor	
	Too sandy	0.00	Depth to saturated zone	0.14	Too sandy	0.00
	Wind erosion	0.00			Depth to saturated zone	0.14
	Low content of organic matter	0.12				
	Too acid	0.84				
	Droughty	0.92				
67A: Harpster-----	Fair		Poor		Poor	
	Carbonate content	0.80	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.92	Low strength	0.00	Too clayey	0.72
	Water erosion	0.99	Shrink-swell	0.99		
69A: Milford-----	Fair		Poor		Poor	
	Too clayey	0.05	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too acid	0.99	Low strength	0.00	Too clayey	0.04
	Water erosion	0.99	Shrink-swell	0.78		
88D: Sparta-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Wind erosion	0.00			Slope	0.96
	Low content of organic matter	0.12				
	Droughty	0.96				
91A: Swygert-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.12	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Carbonate content	0.80	Shrink-swell	0.15		
	Too acid	0.97				
91B2: Swygert-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Carbonate content	0.80	Shrink-swell	0.12	Depth to saturated zone	0.14
	Low content of organic matter	0.92	Depth to saturated zone	0.14		

Table 20b.--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
91C2: Swygert-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.12	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Carbonate content	0.80	Shrink-swell	0.29	Hard to reclaim	0.94
	Droughty	0.94				
	Water erosion	0.99				
93C2, 93D2: Rodman-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Droughty	0.02			Hard to reclaim	0.00
	Carbonate content	0.46			Rock fragments	0.00
	Low content of organic matter	0.50			Carbonate content	0.46
98B: Ade-----	Poor		Good		Fair	
	Wind erosion	0.00			Too sandy	0.08
	Too sandy	0.08				
	Low content of organic matter	0.18				
	Too acid	0.84				
102A: La Hogue-----	Fair		Fair		Fair	
	Too acid	0.97	Depth to saturated zone	0.14	Depth to saturated zone	0.14
103A: Houghton-----	Poor		Poor		Poor	
	Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too acid	0.80			Content of organic matter	0.00
125A: Selma-----	Good		Poor		Poor	
			Depth to saturated zone	0.00	Hard to reclaim	0.00
			Shrink-swell	0.98	Depth to saturated zone	0.00
132A: Starks-----	Fair		Fair		Fair	
	Water erosion	0.68	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Low content of organic matter	0.68			Too clayey	0.67
	Too clayey	0.98				
	Too acid	0.99				
134A, 134B: Camden-----	Fair		Fair		Good	
	Water erosion	0.68	Low strength	0.00		
	Low content of organic matter	0.68	Shrink-swell	0.93		
	Too acid	0.95				

Table 20b.--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
134C2: Camden-----	Fair Low content of organic matter Water erosion Too acid	0.08 0.90 0.97	Fair Shrink-swell	0.99	Good	
146A, 146B, 146B2: Elliott-----	Fair Low content of organic matter Carbonate content Water erosion Too clayey	0.18 0.84 0.90 0.92	Poor Low strength Depth to saturated zone Shrink-swell	0.00 0.07 0.77	Fair Depth to saturated zone Too clayey Hard to reclaim	0.07 0.55 0.90
149A: Brenton-----	Fair Water erosion	0.99	Fair Depth to saturated zone Low strength Shrink-swell	0.14 0.22 0.99	Fair Depth to saturated zone	0.14
150B: Onarga-----	Fair Low content of organic matter Too acid	0.12 0.68	Good		Fair Hard to reclaim	0.46
150C2: Onarga-----	Fair Low content of organic matter Too acid	0.12 0.50	Good		Fair Hard to reclaim Too acid	0.29 0.95
151A: Ridgeville-----	Fair Low content of organic matter Too acid	0.68 0.88	Fair Depth to saturated zone	0.14	Fair Depth to saturated zone	0.14
152A: Drummer-----	Fair Carbonate content Water erosion	0.92 0.99	Poor Depth to saturated zone Low strength Shrink-swell	0.00 0.00 0.95	Poor Depth to saturated zone	0.00
153A: Pella-----	Fair Carbonate content Too clayey Too acid Water erosion	0.80 0.98 0.99 0.99	Poor Depth to saturated zone Low strength Shrink-swell	0.00 0.00 0.99	Poor Depth to saturated zone Too clayey	0.00 0.81
184A: Roby-----	Fair Low content of organic matter Too acid	0.12 0.74	Fair Depth to saturated zone	0.04	Fair Depth to saturated zone Hard to reclaim	0.04 0.71

Table 20b.--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
189A: Martinton-----	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.02
	Carbonate content	0.97	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Water erosion	0.99				
	Too acid	0.99	Shrink-swell	0.89		
197A: Troxel-----	Fair		Poor		Good	
	Low content of organic matter	0.68	Low strength	0.00		
	Too acid	0.92	Shrink-swell	0.99		
	Water erosion	0.99				
201A: Gilford-----	Good		Poor		Poor	
			Depth to saturated zone	0.00	Depth to saturated zone	0.00
206A: Thorp-----	Fair		Poor		Poor	
	Low content of organic matter	0.68	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too acid	0.84	Low strength	0.00		
	Water erosion	0.90	Shrink-swell	0.98		
219A: Millbrook-----	Fair		Fair		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.04
	Water erosion	0.99	Depth to saturated zone	0.04		
			Shrink-swell	0.93		
223B, 223C2: Varna-----	Fair		Poor		Poor	
	Too clayey	0.08	Low strength	0.00	Too clayey	0.06
	Carbonate content	0.97	Shrink-swell	0.87	Depth to saturated zone	0.98
	Water erosion	0.99	Depth to saturated zone	0.98		
223D2: Varna-----	Fair		Poor		Poor	
	Too clayey	0.08	Low strength	0.00	Too clayey	0.06
	Water erosion	0.90	Shrink-swell	0.95	Hard to reclaim	0.94
	Carbonate content	0.97	Depth to saturated zone	0.98	Slope	0.96
	Too acid	0.99			Depth to saturated zone	0.98
228B: Nappanee-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.24	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Carbonate content	0.68	Shrink-swell	0.87	Carbonate content	0.92
	Droughty	0.90				
	Water erosion	0.99				

Table 20b.--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
228C2: Nappanee-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Droughty	0.25	Depth to	0.04	Depth to	0.04
	organic matter		Shrink-swell	0.87	Hard to reclaim	0.05
	Carbonate content	0.68				
	Water erosion	0.99				
232A: Ashkum-----	Poor		Poor		Poor	
	Too clayey	0.00	Depth to	0.00	Depth to	0.00
	Low content of	0.18	saturated zone		saturated zone	
	organic matter		Low strength	0.00	Too clayey	0.00
	Carbonate content	0.97	Shrink-swell	0.60		
	Water erosion	0.99				
235A: Bryce-----	Poor		Poor		Poor	
	Too clayey	0.00	Depth to	0.00	Too clayey	0.00
	Too acid	0.97	saturated zone		Depth to	0.00
	Carbonate content	0.97	Low strength	0.00	saturated zone	
			Shrink-swell	0.14		
238A: Rantoul-----	Poor		Poor		Poor	
	Too clayey	0.00	Depth to	0.00	Too clayey	0.00
			saturated zone		Depth to	0.00
			Low strength	0.00	saturated zone	
			Shrink-swell	0.12		
240C2: Plattville-----	Fair		Poor		Fair	
	Low content of	0.08	Low strength	0.00	Too clayey	0.54
	organic matter		Depth to bedrock	0.58		
	Too clayey	0.82	Shrink-swell	0.98		
241C3: Chatsworth-----	Poor		Poor		Poor	
	Droughty	0.00	Low strength	0.00	Hard to reclaim	0.00
	Too clayey	0.00	Depth to	0.68	Too clayey	0.00
	Low content of	0.12	saturated zone		Depth to	0.68
	organic matter		Shrink-swell	0.87	saturated zone	
	Carbonate content	0.97				
	Water erosion	0.99				
241D3: Chatsworth-----	Poor		Poor		Poor	
	Droughty	0.00	Low strength	0.00	Too clayey	0.00
	Too clayey	0.00	Depth to	0.68	Hard to reclaim	0.03
	Low content of	0.12	saturated zone		Depth to	0.68
	organic matter		Shrink-swell	0.87	saturated zone	
	Carbonate content	0.97			Slope	0.96
	Water erosion	0.99				

Table 20b.--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
241E3, 241F: Chatsworth-----	Poor		Poor		Poor	
	Droughty	0.00	Low strength	0.00	Too clayey	0.00
	Too clayey	0.00	Depth to	0.68	Slope	0.00
	Low content of	0.12	saturated zone		Hard to reclaim	0.01
	organic matter		Shrink-swell	0.87	Depth to	0.68
	Carbonate content	0.97	Slope	0.98	saturated zone	
	Water erosion	0.99				
290A, 290B: Warsaw-----	Fair		Good		Poor	
	Low content of	0.12			Hard to reclaim	0.00
	organic matter					
	Carbonate content	0.92				
	Too acid	0.92				
290C2: Warsaw-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Low content of	0.12			Rock fragments	0.00
	organic matter				Hard to reclaim	0.00
	Carbonate content	0.92			Carbonate content	0.92
	Too acid	0.95				
	Droughty	0.98				
293A: Andres-----	Fair		Poor		Fair	
	Low content of	0.18	Low strength	0.00	Depth to	0.12
	organic matter		Depth to	0.12	saturated zone	
	Too clayey	0.82	saturated zone		Too clayey	0.64
	Carbonate content	0.84	Shrink-swell	0.96		
	Water erosion	0.99				
293B: Andres-----	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Depth to	0.12
	Carbonate content	0.84	Depth to	0.12	saturated zone	
	Water erosion	0.99	saturated zone		Too clayey	0.64
			Shrink-swell	0.97		
294A: Symerton-----	Fair		Fair		Fair	
	Low content of	0.68	Shrink-swell	0.96	Depth to	0.95
	organic matter				saturated zone	
	Carbonate content	0.97				
294B: Symerton-----	Fair		Fair		Fair	
	Low content of	0.12	Low strength	0.00	Rock fragments	0.12
	organic matter		Depth to	0.99	Depth to	0.99
	Too acid	0.84	saturated zone		saturated zone	
	Water erosion	0.90				
	Carbonate content	0.97				
294C2: Symerton-----	Fair		Fair		Fair	
	Low content of	0.68	Depth to	0.93	Depth to	0.93
	organic matter		saturated zone		saturated zone	
	Too acid	0.84	Shrink-swell	0.99		
	Carbonate content	0.97				
	Water erosion	0.99				

Table 20b.--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
295A, 295B: Mokena-----	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Depth to	0.14
	Carbonate content	0.97	Depth to	0.14	saturated zone	
			saturated zone		Too clayey	0.64
			Shrink-swell	0.90	Hard to reclaim	0.99
298A: Beecher-----	Fair		Poor		Fair	
	Low content of	0.18	Low strength	0.00	Depth to	0.01
	organic matter		Depth to	0.01	saturated zone	
	Carbonate content	0.84	saturated zone		Too clayey	0.55
	Water erosion	0.90	Shrink-swell	0.87	Hard to reclaim	0.97
	Too clayey	0.92				
	Too acid	0.92				
	Droughty	0.99				
298B, 298B2: Beecher-----	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Depth to	0.00
	Low content of	0.68	Depth to	0.00	saturated zone	
	organic matter		saturated zone		Too clayey	0.01
	Carbonate content	0.84	Shrink-swell	0.87	Hard to reclaim	0.94
	Too acid	0.88				
	Water erosion	0.90				
	Droughty	0.97				
311C: Ritchey-----	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Droughty	0.00	Low strength	0.00		
	Water erosion	0.99	Shrink-swell	0.87		
311D: Ritchey-----	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Droughty	0.00	Low strength	0.00	Too clayey	0.67
	Low content of	0.68	Shrink-swell	0.87	Slope	0.96
	organic matter					
	Too clayey	0.98				
	Water erosion	0.99				
314A: Joliet-----	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to	0.00
	Droughty	0.00	Depth to	0.00	saturated zone	
			saturated zone		Depth to bedrock	0.00
			Low strength	0.00		
315A, 315B: Channahon-----	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Droughty	0.00	Low strength	0.00		
			Shrink-swell	0.87		
315C2: Channahon-----	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Depth to bedrock	0.00	Low strength	0.00		
	Low content of	0.82				
	organic matter					

Table 20b.--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
316A: Romeo-----	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Depth to	0.00
	Depth to bedrock	0.00	Depth to	0.00	saturated zone	
			saturated zone		Depth to bedrock	0.00
			Low strength	0.00		
317A: Millsdale-----	Fair		Poor		Poor	
	Depth to bedrock	0.58	Depth to bedrock	0.00	Depth to	0.00
	Droughty	0.95	Depth to	0.00	saturated zone	
	Water erosion	0.99	saturated zone		Depth to bedrock	0.58
			Low strength	0.00		
			Shrink-swell	0.41		
318A, 318B, 318C2: Lorenzo-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Low content of organic matter	0.12			Rock fragments	0.00
	Carbonate content	0.46			Hard to reclaim	0.00
	Droughty	0.82			Carbonate content	0.46
318D2: Lorenzo-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Low content of organic matter	0.12			Rock fragments	0.00
	Droughty	0.20			Hard to reclaim	0.00
	Carbonate content	0.46			Carbonate content	0.46
					Slope	0.96
320A, 320B, 320B2, 320C2: Frankfort-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.68	Depth to	0.04	Depth to	0.04
	Droughty	0.83	saturated zone		saturated zone	
	Carbonate content	0.84	Shrink-swell	0.95	Hard to reclaim	0.84
	Water erosion	0.99				
325A, 325B, 325C2: Dresden-----	Fair		Good		Poor	
	Low content of organic matter	0.12			Hard to reclaim	0.00
	Carbonate content	0.46				
327A, 327B, 327C2: Fox-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Low content of organic matter	0.12			Rock fragments	0.00
	Carbonate content	0.68			Hard to reclaim	0.00
	Too acid	0.92			Carbonate content	0.68
	Water erosion	0.99				

Table 20b.--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
329A: Will-----	Fair		Poor		Poor	
	Low content of organic matter	0.50	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Carbonate content	0.68			Hard to reclaim	0.02
	Droughty	0.99			Hard to reclaim	0.10
330A: Peotone-----	Poor		Poor		Poor	
	Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Water erosion	0.99	Low strength	0.00	Too clayey	0.00
			Shrink-swell	0.12		
343A: Kane-----	Fair		Fair		Poor	
	Low content of organic matter	0.12	Depth to saturated zone	0.14	Hard to reclaim	0.00
	Carbonate content	0.46			Depth to saturated zone	0.14
	Too acid	0.88			Hard to reclaim	0.84
356A: Elpaso-----	Fair		Poor		Poor	
	Low content of organic matter	0.24	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too acid	0.92	Low strength	0.00	Too clayey	0.98
	Too clayey	0.98	Shrink-swell	0.87		
	Carbonate content	0.99				
	Water erosion	0.99				
369A: Waupecan-----	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Hard to reclaim	0.12
	Water erosion	0.99				
369B: Waupecan-----	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Hard to reclaim	0.12
	Too acid	0.97	Shrink-swell	0.99		
	Water erosion	0.99				
380A: Fieldon-----	Fair		Poor		Poor	
	Low content of organic matter	0.08	Depth to saturated zone	0.00	Depth to saturated zone	0.00
387B: Ockley-----	Fair		Fair		Fair	
	Carbonate content	0.68	Low strength	0.22	Too clayey	0.67
	Low content of organic matter	0.68	Shrink-swell	0.89		
	Too acid	0.84				
	Too clayey	0.98				
403D: Elizabeth-----	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Depth to bedrock	0.00	Low strength	0.00	Slope	0.96
	Carbonate content	0.92				

Table 20b.--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, 403F: Elizabeth-----	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
	Carbonate content	0.92	Low strength	0.00		
			Shrink-swell	0.87		
440A, 440B, 440C2: Jasper-----	Fair		Good		Good	
	Low content of organic matter	0.18				
	Too acid	0.97				
494B: Kankakee-----	Fair		Fair		Poor	
	Low content of organic matter	0.12	Cobble content	0.56	Hard to reclaim	0.00
	Cobble content	0.69				
	Too acid	0.99				
513A: Granby-----	Poor		Poor		Poor	
	Too sandy	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.12			Too sandy	0.00
523A: Dunham-----	Fair		Poor		Poor	
	Carbonate content	0.46	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Water erosion	0.99	Low strength	0.00	Hard to reclaim	0.08
			Shrink-swell	0.99		
526A: Grundelein-----	Fair		Fair		Fair	
	Low content of organic matter	0.12	Depth to saturated zone	0.14	Hard to reclaim	0.08
	Carbonate content	0.46	Shrink-swell	0.99	Depth to saturated zone	0.14
	Water erosion	0.99				
	Too acid	0.99				
530B: Ozaukee-----	Fair		Poor		Poor	
	Low content of organic matter	0.18	Low strength	0.00	Too clayey	0.00
	Too clayey	0.32	Shrink-swell	0.87	Depth to	0.35
	Carbonate content	0.68	Depth to saturated zone	0.98	saturated zone	
	Water erosion	0.90			Hard to reclaim	0.99
	Too acid	0.95				
	Droughty	0.97				
530C2, 530C3: Ozaukee-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.24	Depth to saturated zone	0.95	Hard to reclaim	0.29
	Droughty	0.61	Shrink-swell	0.97	Depth to saturated zone	0.95
	Carbonate content	0.68				
	Water erosion	0.90				

Table 20b.--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
530D2, 530D3: Ozaukee-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.24	Depth to saturated zone	0.97	Hard to reclaim	0.16
	Droughty	0.53	Shrink-swell	0.98	Depth to saturated zone	0.53
	Carbonate content	0.68			Slope	0.96
	Water erosion	0.90				
530E2: Ozaukee-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.24	Depth to saturated zone	0.90	Slope	0.00
	Carbonate content	0.68	Shrink-swell	0.91	Hard to reclaim	0.65
	Water erosion	0.90	Slope	0.98	Depth to saturated zone	0.68
	Droughty	0.91				
530F: Ozaukee-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Slope	0.00
	Low content of organic matter	0.24	Slope	0.00	Too clayey	0.00
	Carbonate content	0.68	Shrink-swell	0.87	Hard to reclaim	0.94
	Water erosion	0.90	Depth to saturated zone	0.98	Depth to saturated zone	0.98
	Droughty	0.92				
531B: Markham-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.68	Depth to saturated zone	0.89	Hard to reclaim	0.71
	Too acid	0.84	Shrink-swell	0.96	Depth to saturated zone	0.89
	Water erosion	0.90				
	Carbonate content	0.97				
531C2: Markham-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.68	Depth to saturated zone	0.76	Hard to reclaim	0.46
	Water erosion	0.90	Shrink-swell	0.98	Depth to saturated zone	0.76
	Carbonate content	0.97				
	Droughty	0.99				
531D2: Markham-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.68	Depth to saturated zone	0.80	Hard to reclaim	0.54
	Water erosion	0.90	Shrink-swell	0.98	Depth to saturated zone	0.80
	Carbonate content	0.97			Slope	0.96
	Droughty	0.99				
541A: Graymont-----	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.58
	Water erosion	0.90	Depth to saturated zone	0.93	Depth to saturated zone	0.93
	Carbonate content	0.97				
	Too clayey	0.98				

Table 20b.--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
541B: Graymont-----	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.98
	Water erosion	0.90	Depth to saturated zone	0.98		
	Carbonate content	0.97				
	Too acid	0.99				
541C2: Graymont-----	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.89
	Water erosion	0.90	Depth to saturated zone	0.89		
	Carbonate content	0.97	Shrink-swell	0.99		
560D2: St. Clair-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Droughty	0.34	Shrink-swell	0.87	Hard to reclaim	0.03
	Low content of organic matter	0.50	Depth to saturated zone	0.98	Slope	0.96
	Carbonate content	0.68			Depth to saturated zone	0.98
	Water erosion	0.99				
560E: St. Clair-----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Droughty	0.02	Depth to saturated zone	0.68	Slope	0.00
	Low content of organic matter	0.24	Shrink-swell	0.87	Hard to reclaim	0.20
	Carbonate content	0.68	Slope	0.98	Depth to saturated zone	0.68
	Water erosion	0.99				
570B: Martinsville-----	Fair		Fair		Fair	
	Too acid	0.39	Shrink-swell	0.98	Too acid	0.92
	Low content of organic matter	0.68				
	Water erosion	0.99				
570C2: Martinsville-----	Fair		Fair		Fair	
	Low content of organic matter	0.68			Too acid	0.92
	Water erosion	0.99				
	Too acid	0.99				
570D2: Martinsville-----	Fair		Fair		Fair	
	Too acid	0.39			Too acid	0.92
	Low content of organic matter	0.68			Slope	0.96
	Water erosion	0.99				
570E2, 570F: Martinsville-----	Fair		Fair		Poor	
	Low content of organic matter	0.68	Slope	0.98	Slope	0.00
	Too acid	0.97	Shrink-swell	0.98		
	Water erosion	0.99				

Table 20b.--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
594A: Reddick-----	Fair		Poor		Poor	
	Carbonate content	0.84	Depth to	0.00	Depth to	0.00
	Water erosion	0.99	saturated zone		saturated zone	
			Low strength	0.00		
			Shrink-swell	0.87		
614A: Chenoa-----	Fair		Poor		Fair	
	Low content of	0.12	Low strength	0.00	Too clayey	0.14
	organic matter		Depth to	0.14	Depth to	0.14
	Too clayey	0.18	saturated zone		saturated zone	
	Carbonate content	0.84	Shrink-swell	0.90		
	Water erosion	0.90				
614B: Chenoa-----	Fair		Poor		Fair	
	Low content of	0.18	Low strength	0.00	Depth to	0.14
	organic matter		Depth to	0.14	saturated zone	
	Carbonate content	0.84	saturated zone			
	Too acid	0.92	Shrink-swell	0.87		
	Water erosion	0.99				
688B: Braidwood-----	Fair		Good		Fair	
	Low content of	0.68			Hard to reclaim	0.03
	organic matter				Carbonate content	0.92
	Water erosion	0.90				
	Carbonate content	0.92				
688D: Braidwood-----	Fair		Good		Poor	
	Low content of	0.68			Hard to reclaim	0.00
	organic matter				Slope	0.09
	Water erosion	0.90			Carbonate content	0.92
	Carbonate content	0.92				
688G: Braidwood-----	Fair		Poor		Poor	
	Low content of	0.68	Slope	0.00	Slope	0.00
	organic matter				Hard to reclaim	0.00
	Water erosion	0.90			Carbonate content	0.92
	Carbonate content	0.92				
719A: Symerton-----	Fair		Fair		Fair	
	Low content of	0.68	Depth to	0.95	Depth to	0.95
	organic matter		saturated zone		saturated zone	
	Carbonate content	0.97	Shrink-swell	0.99		
	Water erosion	0.99				
719B, 719C2: Symerton-----	Fair		Fair		Fair	
	Low content of	0.12	Low strength	0.00	Depth to	0.93
	organic matter		Depth to	0.93	saturated zone	
	Water erosion	0.90	saturated zone			
	Carbonate content	0.97				

Table 20b.--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
740A: Darroch-----	Fair Low content of organic matter Carbonate content	0.12 0.68	Fair Depth to saturated zone	0.14	Fair Depth to saturated zone	0.14
741B: Oakville-----	Poor Too sandy Wind erosion Low content of organic matter Too acid Droughty	0.00 0.00 0.18 0.32 0.60	Good		Poor Too sandy Too acid	0.00 0.88
741D: Oakville-----	Poor Too sandy Wind erosion Low content of organic matter Droughty Too acid	0.00 0.00 0.12 0.54 0.88	Good		Poor Too sandy Slope	0.00 0.96
741E: Oakville-----	Poor Too sandy Wind erosion Low content of organic matter Droughty Too acid	0.00 0.00 0.12 0.53 0.88	Fair Slope	0.98	Poor Too sandy Slope	0.00 0.00
741F: Oakville-----	Poor Too sandy Wind erosion Low content of organic matter Droughty Too acid	0.00 0.00 0.12 0.55 0.88	Poor Slope	0.00	Poor Slope Too sandy	0.00 0.00
792A, 792B: Bowes-----	Fair Low content of organic matter Carbonate content Too acid Water erosion Too clayey	0.12 0.68 0.84 0.90 0.98	Fair Shrink-swell	0.99	Fair Hard to reclaim Too clayey	0.12 0.67
802B: Orthents, loamy----	Fair Low content of organic matter Water erosion	0.68 0.90	Fair Low strength Shrink-swell	0.78 0.87	Good	

Table 20b.--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
802D: Orthents, loamy-----	Fair		Fair		Fair	
	Low content of organic matter	0.68	Low strength	0.78	Slope	0.96
	Water erosion	0.90	Shrink-swell	0.87		
805B: Orthents, clayey----	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Hard to reclaim	0.00
	Droughty	0.50	Shrink-swell	0.12	Too clayey	0.00
	Low content of organic matter	0.68	Depth to saturated zone	0.98	Depth to saturated zone	0.98
	Water erosion	0.90				
830: Landfills-----	Not rated		Not rated		Not rated	
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
903A: Muskego-----	Poor		Poor		Poor	
	Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Carbonate content	0.32	Low strength	0.22	Content of organic matter	0.00
	Too acid	0.99				
Houghton-----	Poor		Poor		Poor	
	Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too acid	0.80			Content of organic matter	0.00
969E2: Casco-----	Poor		Fair		Poor	
	Too sandy	0.00	Slope	0.98	Too sandy	0.00
	Low content of organic matter	0.12			Slope	0.00
	Droughty	0.41			Rock fragments	0.00
					Hard to reclaim	0.00
Rodman-----	Poor		Fair		Poor	
	Too sandy	0.00	Slope	0.98	Too sandy	0.00
	Droughty	0.00			Hard to reclaim	0.00
	Carbonate content	0.46			Rock fragments	0.00
	Low content of organic matter	0.50			Slope	0.00
					Carbonate content	0.46
969F: Casco-----	Poor		Poor		Poor	
	Too sandy	0.00	Slope	0.00	Slope	0.00
	Low content of organic matter	0.12			Too sandy	0.00
	Droughty	0.15			Rock fragments	0.00
					Hard to reclaim	0.00

Table 20b.--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
969F: Rodman-----	Poor Too sandy Droughty Carbonate content Low content of organic matter	0.00 0.00 0.46 0.50	Poor Slope	0.00	Poor Slope Too sandy Hard to reclaim Rock fragments Carbonate content	0.00 0.00 0.00 0.00 0.46
1067A: Harpster-----	Fair Carbonate content Too clayey Water erosion	0.80 0.92 0.99	Poor Depth to saturated zone Low strength Shrink-swell	0.00 0.00 0.99	Poor Depth to saturated zone Too clayey	0.00 0.72
1082A: Millington-----	Fair Carbonate content	0.92	Poor Depth to saturated zone Shrink-swell	0.00 0.96	Poor Depth to saturated zone	0.00
1103A: Houghton-----	Poor Wind erosion	0.00	Poor Depth to saturated zone	0.00	Poor Depth to saturated zone Content of organic matter	0.00 0.00
1201A: Gilford-----	Fair Low content of organic matter	0.92	Poor Depth to saturated zone	0.00	Poor Depth to saturated zone Hard to reclaim	0.00 0.94
1903A: Muskego-----	Poor Wind erosion Carbonate content	0.00 0.32	Poor Depth to saturated zone Low strength	0.00 0.22	Poor Depth to saturated zone Content of organic matter	0.00 0.00
Houghton-----	Poor Wind erosion	0.00	Poor Depth to saturated zone	0.00	Poor Depth to saturated zone Content of organic matter	0.00 0.00
3082A: Millington-----	Fair Carbonate content	0.92	Poor Depth to saturated zone Shrink-swell	0.00 0.98	Poor Depth to saturated zone	0.00
3107A: Sawmill-----	Fair Too clayey Too acid	0.98 0.99	Poor Depth to saturated zone Low strength Shrink-swell	0.00 0.00 0.87	Poor Depth to saturated zone Too clayey	0.00 0.98

Table 20b.--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
3314A: Joliet-----	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to	0.00
	Droughty	0.00	Depth to	0.00	saturated zone	
			saturated zone		Depth to bedrock	0.00
			Low strength	0.00		
3316A: Romeo-----	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Depth to	0.00
	Depth to bedrock	0.00	Depth to	0.00	saturated zone	
			saturated zone		Depth to bedrock	0.00
3451A: Lawson-----	Good		Fair		Fair	
			Depth to	0.14	Depth to	0.14
			saturated zone		saturated zone	
			Low strength	0.22		
8082A: Millington-----	Fair		Poor		Poor	
	Carbonate content	0.92	Depth to	0.00	Depth to	0.00
			saturated zone		saturated zone	
			Shrink-swell	0.98		
8321A: Du Page-----	Fair		Good		Good	
	Carbonate content	0.80				
8451A: Lawson-----	Fair		Poor		Fair	
	Water erosion	0.68	Low strength	0.00	Depth to	0.14
			Depth to	0.14	saturated zone	
			saturated zone			
W: Water-----	Not rated		Not rated		Not rated	

Table 21a.--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
23A, 23B: Blount-----	Not limited		Very limited Depth to saturated zone Thin layer Piping	1.00 0.52 0.02	Very limited Depth to water	1.00
49A: Watseka-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.99	Very limited Cutbanks cave	1.00
67A: Harpster-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.22	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
69A: Milford-----	Somewhat limited Seepage	0.04	Very limited Ponding Depth to saturated zone	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
88D: Sparta-----	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
91A, 91B2, 91C2: Swygert-----	Not limited		Very limited Depth to saturated zone Thin layer Hard to pack	1.00 0.24 0.11	Very limited Depth to water	1.00
93C2, 93D2: Rodman-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.96	Very limited Depth to water	1.00
98B: Ade-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
102A: La Hogue-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 1.00 0.03	Very limited Cutbanks cave	1.00

Table 21a.--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
103A: Houghton-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Content of organic matter Ponding	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
125A: Selma-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Piping Seepage	1.00 1.00 0.75 0.06	Very limited Cutbanks cave	1.00
132A: Starks-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 0.90 0.06	Very limited Cutbanks cave	1.00
134A: Camden-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.70 0.08	Very limited Depth to water	1.00
134B: Camden-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.96 0.08	Very limited Depth to water	1.00
134C2: Camden-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.97 0.08	Very limited Depth to water	1.00
146A: Elliott-----	Not limited		Very limited Depth to saturated zone Thin layer Piping	1.00 0.78 0.24	Very limited Depth to water	1.00
146B: Elliott-----	Not limited		Very limited Depth to saturated zone Thin layer Piping	1.00 0.78 0.42	Very limited Depth to water	1.00
146B2: Elliott-----	Not limited		Very limited Depth to saturated zone Thin layer Piping	1.00 0.78 0.19	Very limited Depth to water	1.00

Table 21a.--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
149A: Brenton-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 0.63 0.06	Very limited Cutbanks cave	1.00
150B: Onarga-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.22	Very limited Depth to water	1.00
150C2: Onarga-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.22	Very limited Depth to water	1.00
151A: Ridgeville-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.90	Very limited Cutbanks cave	1.00
152A: Drummer-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.04	Very limited Cutbanks cave	1.00
153A: Pella-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage Piping	1.00 1.00 0.04 0.04	Very limited Cutbanks cave	1.00
184A: Roby-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.17	Very limited Cutbanks cave	1.00
189A: Martinton-----	Somewhat limited Seepage	0.04	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill Cutbanks cave	0.96 0.10
197A: Troxel-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.66	Very limited Depth to water	1.00
201A: Gilford-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.58	Very limited Cutbanks cave	1.00

Table 21a.--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
206A: Thorp-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Piping Seepage	1.00 1.00 0.23 0.04	Very limited Cutbanks cave	1.00
219A: Millbrook-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 0.76 0.06	Very limited Cutbanks cave	1.00
223B: Varna-----	Somewhat limited Seepage	0.02	Somewhat limited Depth to saturated zone Thin layer	0.68 0.37	Very limited Depth to water	1.00
223C2: Varna-----	Somewhat limited Seepage	0.02	Somewhat limited Depth to saturated zone Thin layer	0.68 0.37	Very limited Depth to water	1.00
223D2: Varna-----	Somewhat limited Seepage	0.02	Somewhat limited Depth to saturated zone Thin layer	0.68 0.37	Very limited Depth to water	1.00
228B: Nappanee-----	Not limited		Very limited Depth to saturated zone Thin layer	1.00 0.37	Very limited Depth to water	1.00
228C2: Nappanee-----	Not limited		Very limited Depth to saturated zone Thin layer	1.00 0.37	Very limited Depth to water	1.00
232A: Ashkum-----	Somewhat limited Seepage	0.04	Very limited Ponding Depth to saturated zone	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.96 0.10
235A: Bryce-----	Not limited		Very limited Ponding Depth to saturated zone Hard to pack	1.00 1.00 0.31	Somewhat limited Slow refill Cutbanks cave	0.96 0.10

Table 21a.--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
238A: Rantoul-----	Not limited		Very limited Ponding	1.00	Somewhat limited Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	0.25		
240C2: Plattville-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.77	Very limited Depth to water	1.00
	Depth to bedrock	0.10	Thin layer	0.11		
241C3: Chatsworth-----	Not limited		Very limited Thin layer	1.00	Very limited Depth to water	1.00
			Depth to saturated zone	0.98		
			Hard to pack	0.64		
241D3: Chatsworth-----	Not limited		Very limited Thin layer	1.00	Very limited Depth to water	1.00
			Depth to saturated zone	0.98		
			Hard to pack	0.70		
241E3: Chatsworth-----	Somewhat limited Slope	0.04	Very limited Thin layer	1.00	Very limited Depth to water	1.00
			Depth to saturated zone	0.98		
			Hard to pack	0.63		
241F: Chatsworth-----	Somewhat limited Slope	0.28	Very limited Thin layer	1.00	Very limited Depth to water	1.00
			Depth to saturated zone	0.98		
			Hard to pack	0.46		
290A: Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.50	Very limited Depth to water	1.00
290B: Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.50	Very limited Depth to water	1.00
290C2: Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.50	Very limited Depth to water	1.00
293A: Andres-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
			Piping	0.75		

Table 21a.--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
293B: Andres-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.75	Very limited Depth to water	1.00
294A: Symerton-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.85 0.14	Very limited Depth to water	1.00
294B: Symerton-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.88 0.53	Very limited Depth to water	1.00
294C2: Symerton-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.83 0.80	Very limited Depth to water	1.00
295A: Mokena-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping Thin layer	1.00 0.54 0.26	Very limited Depth to water	1.00
295B: Mokena-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Thin layer Piping	1.00 0.26 0.19	Very limited Depth to water	1.00
298A: Beecher-----	Somewhat limited Seepage	0.04	Very limited Depth to saturated zone Thin layer Piping	1.00 0.71 0.19	Very limited Depth to water	1.00
298B: Beecher-----	Somewhat limited Seepage	0.04	Very limited Depth to saturated zone Thin layer Piping	1.00 0.71 0.07	Very limited Depth to water	1.00
298B2: Beecher-----	Somewhat limited Seepage	0.04	Very limited Depth to saturated zone Thin layer Piping	1.00 0.71 0.16	Very limited Depth to water	1.00

Table 21a.--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
311C: Ritchey-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Thin layer Piping	1.00 0.54	Very limited Depth to water	1.00
311D: Ritchey-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Thin layer Piping	1.00 0.38	Very limited Depth to water	1.00
314A: Joliet-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Ponding Depth to saturated zone Thin layer Piping	1.00 1.00 1.00 0.76	Very limited Depth to hard bedrock Slow refill Cutbanks cave	1.00 0.28 0.10
315A: Channahon-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Thin layer Piping	1.00 0.23	Very limited Depth to water	1.00
315B: Channahon-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Thin layer Piping	1.00 0.46	Very limited Depth to water	1.00
315C2: Channahon-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Thin layer Piping	1.00 0.54	Very limited Depth to water	1.00
316A: Romeo-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Ponding Depth to saturated zone Thin layer Piping	1.00 1.00 1.00 0.76	Very limited Depth to hard bedrock Slow refill Cutbanks cave	1.00 0.28 0.10
317A: Millsdale-----	Somewhat limited Depth to bedrock Seepage	0.85 0.04	Very limited Ponding Depth to saturated zone Thin layer	1.00 1.00 0.85	Very limited Depth to hard bedrock Slow refill Cutbanks cave	1.00 0.28 0.10
318A: Lorenzo-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
318B: Lorenzo-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
318C2: Lorenzo-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00

Table 21a.--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
318D2: Lorenzo-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
320A: Frankfort-----	Not limited		Very limited Depth to saturated zone Thin layer	1.00 0.77	Very limited Depth to water	1.00
320B: Frankfort-----	Not limited		Very limited Depth to saturated zone Thin layer Hard to pack	1.00 0.77 0.10	Very limited Depth to water	1.00
320B2: Frankfort-----	Not limited		Very limited Depth to saturated zone Thin layer	1.00 0.77	Very limited Depth to water	1.00
320C2: Frankfort-----	Not limited		Very limited Depth to saturated zone Thin layer Hard to pack	1.00 0.77 0.17	Very limited Depth to water	1.00
325A: Dresden-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.95	Very limited Depth to water	1.00
325B: Dresden-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.95	Very limited Depth to water	1.00
325C2: Dresden-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.95	Very limited Depth to water	1.00
327A: Fox-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
327B: Fox-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
327C2: Fox-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
329A: Will-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.97	Very limited Cutbanks cave	1.00

Table 21a.--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
330A: Peotone-----	Somewhat limited Seepage	0.04	Very limited Ponding Depth to saturated zone Hard to pack	1.00 1.00 0.19	Somewhat limited Slow refill Cutbanks cave	0.96 0.10
343A: Kane-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.97	Very limited Cutbanks cave	1.00
356A: Elpaso-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.01	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
369A: Waupecan-----	Very limited Seepage	1.00	Somewhat limited Seepage Piping	0.97 0.92	Very limited Depth to water	1.00
369B: Waupecan-----	Very limited Seepage	1.00	Somewhat limited Seepage Piping	0.97 0.92	Very limited Depth to water	1.00
380A: Fieldon-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.12	Very limited Cutbanks cave	1.00
387B: Ockley-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.84	Very limited Depth to water	1.00
403D: Elizabeth-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Thin layer Piping	1.00 0.50	Very limited Depth to water	1.00
403E: Elizabeth-----	Very limited Depth to bedrock Slope Seepage	1.00 0.04 0.02	Very limited Thin layer Piping	1.00 0.50	Very limited Depth to water	1.00
403F: Elizabeth-----	Very limited Depth to bedrock Slope Seepage	1.00 0.28 0.02	Very limited Thin layer Piping	1.00 0.50	Very limited Depth to water	1.00

Table 21a.--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
440A: Jasper-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.10	Very limited Depth to water	1.00
440B: Jasper-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.10	Very limited Depth to water	1.00
440C2: Jasper-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.10	Very limited Depth to water	1.00
494B: Kankakee-----	Very limited Seepage	1.00	Somewhat limited Seepage Content of large stones	0.04 0.01	Very limited Depth to water	1.00
513A: Granby-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.90	Very limited Cutbanks cave	1.00
523A: Dunham-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Piping Seepage	1.00 1.00 0.76 0.67	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 0.67	Very limited Cutbanks cave	1.00
530B: Ozaukee-----	Somewhat limited Seepage	0.02	Somewhat limited Thin layer Depth to saturated zone	0.78 0.68	Very limited Depth to water	1.00
530C2: Ozaukee-----	Somewhat limited Seepage	0.02	Somewhat limited Depth to saturated zone Thin layer	0.98 0.78	Very limited Depth to water	1.00
530C3: Ozaukee-----	Somewhat limited Seepage	0.02	Somewhat limited Thin layer Depth to saturated zone	0.78 0.75	Very limited Depth to water	1.00

Table 21a.--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
530D2: Ozaukee-----	Somewhat limited Seepage	0.02	Somewhat limited Depth to saturated zone Thin layer	0.98 0.78	Very limited Depth to water	1.00
530D3: Ozaukee-----	Somewhat limited Seepage	0.02	Very limited Depth to saturated zone Thin layer	1.00 0.78	Very limited Depth to water	1.00
530E2: Ozaukee-----	Somewhat limited Slope Seepage	0.04 0.02	Somewhat limited Depth to saturated zone Thin layer Hard to pack	0.98 0.78 0.30	Very limited Depth to water	1.00
530F: Ozaukee-----	Somewhat limited Slope Seepage	0.28 0.02	Somewhat limited Thin layer Depth to saturated zone Hard to pack	0.78 0.68 0.39	Very limited Depth to water	1.00
531B: Markham-----	Somewhat limited Seepage	0.02	Somewhat limited Depth to saturated zone Thin layer	0.86 0.58	Very limited Depth to water	1.00
531C2: Markham-----	Somewhat limited Seepage	0.02	Somewhat limited Depth to saturated zone Thin layer	0.95 0.58	Very limited Depth to water	1.00
531D2: Markham-----	Somewhat limited Seepage	0.02	Somewhat limited Depth to saturated zone Thin layer	0.93 0.58	Very limited Depth to water	1.00
541A: Graymont-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.80 0.23	Very limited Depth to water	1.00
541B: Graymont-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.68 0.26	Very limited Depth to water	1.00
541C2: Graymont-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.86 0.21	Very limited Depth to water	1.00

Table 21a.--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
560D2: St. Clair-----	Not limited		Somewhat limited Thin layer Depth to saturated zone	0.73 0.68	Very limited Depth to water	1.00
560E: St. Clair-----	Somewhat limited Slope	0.04	Somewhat limited Depth to saturated zone Thin layer	0.98 0.73	Very limited Depth to water	1.00
570B: Martinsville-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.08	Very limited Depth to water	1.00
570C2: Martinsville-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.08	Very limited Depth to water	1.00
570D2: Martinsville-----	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.08	Very limited Depth to water	1.00
570E2: Martinsville-----	Very limited Seepage Slope	1.00 0.04	Very limited Piping Seepage	1.00 0.08	Very limited Depth to water	1.00
570F: Martinsville-----	Very limited Seepage Slope	1.00 0.28	Very limited Piping Seepage	1.00 0.08	Very limited Depth to water	1.00
594A: Reddick-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
614A: Chenoa-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.04	Very limited Depth to water	1.00
614B: Chenoa-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.13	Very limited Depth to water	1.00
688B: Braidwood-----	Somewhat limited Seepage	0.72	Very limited Piping Seepage	1.00 0.03	Very limited Depth to water	1.00

Table 21a.--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
688D: Braidwood-----	Somewhat limited Seepage Slope	 0.72 0.02	Very limited Piping Seepage	 1.00 0.03	Very limited Depth to water	 1.00
688G: Braidwood-----	Somewhat limited Slope Seepage	 0.97 0.72	Very limited Piping Seepage	 1.00 0.03	Very limited Depth to water	 1.00
719A: Symerton-----	Somewhat limited Seepage	 0.72	Somewhat limited Piping Depth to saturated zone	 0.92 0.75	Very limited Depth to water	 1.00
719B: Symerton-----	Somewhat limited Seepage	 0.72	Somewhat limited Piping Depth to saturated zone	 0.96 0.80	Very limited Depth to water	 1.00
719C2: Symerton-----	Somewhat limited Seepage	 0.72	Somewhat limited Depth to saturated zone Piping	 0.08 0.91	Very limited Depth to water	 1.00
740A: Darroch-----	Very limited Seepage	 1.00	Very limited Depth to saturated zone Piping	 1.00 1.00	Somewhat limited Cutbanks cave	 0.10
741B: Oakville-----	Very limited Seepage	 1.00	Somewhat limited Seepage	 0.97	Very limited Depth to water	 1.00
741D: Oakville-----	Very limited Seepage	 1.00	Somewhat limited Seepage	 0.97	Very limited Depth to water	 1.00
741E: Oakville-----	Very limited Seepage Slope	 1.00 0.04	Somewhat limited Seepage	 0.97	Very limited Depth to water	 1.00
741F: Oakville-----	Very limited Seepage Slope	 1.00 0.28	Somewhat limited Seepage	 0.97	Very limited Depth to water	 1.00
792A: Bowes-----	Very limited Seepage	 1.00	Very limited Piping Seepage	 1.00 0.67	Very limited Depth to water	 1.00
792B: Bowes-----	Very limited Seepage	 1.00	Very limited Piping Seepage	 1.00 0.67	Very limited Depth to water	 1.00

Table 21a.--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
802B: Orthents, loamy-----	Somewhat limited Seepage	0.04	Somewhat limited Piping	0.68	Very limited Depth to water	1.00
802D: Orthents, loamy-----	Somewhat limited Seepage	0.04	Somewhat limited Piping	0.68	Very limited Depth to water	1.00
805B: Orthents, clayey----	Not limited		Somewhat limited Depth to saturated zone	0.68	Very limited Depth to water	1.00
830: Landfills-----	Not rated		Not rated		Not rated	
864: Pits, quarry-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
903A: Muskego-----	Very limited Seepage	1.00	Very limited Ponding Content of organic matter Depth to saturated zone	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
Houghton-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
969E2: Casco-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
Rodman-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage	0.96	Very limited Depth to water	1.00
969F: Casco-----	Very limited Seepage Slope	1.00 0.28	Somewhat limited Seepage	0.97	Very limited Depth to water	1.00
Rodman-----	Very limited Seepage Slope	1.00 0.28	Somewhat limited Seepage	0.96	Very limited Depth to water	1.00
1067A: Harpster-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.22	Somewhat limited Slow refill Cutbanks cave	0.28 0.10

Table 21a.--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
1082A: Millington-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.76	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
1103A: Houghton-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
1201A: Gilford-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.31	Very limited Cutbanks cave	1.00
1903A: Muskego-----	Very limited Seepage	1.00	Very limited Ponding Content of organic matter Depth to saturated zone	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
1903A: Houghton-----	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
3082A: Millington-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.81	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
3107A: Sawmill-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.02	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
3314A: Joliet-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Ponding Depth to saturated zone Thin layer Piping	1.00 1.00 1.00 0.43	Very limited Depth to hard bedrock Slow refill Cutbanks cave	1.00 0.28 0.10

Table 21a.--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
3316A: Romeo-----	Very limited Depth to bedrock Seepage	1.00 0.02	Very limited Ponding Depth to saturated zone Thin layer Piping	1.00 1.00 1.00 0.76	Very limited Depth to hard bedrock Slow refill Cutbanks cave	1.00 0.28 0.10
3451A: Lawson-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.83	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8082A: Millington-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.81	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8321A: Du Page-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.62	Somewhat limited Depth to water Slow refill Cutbanks cave	0.99 0.28 0.10
8451A: Lawson-----	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
W: Water-----	Not rated		Not rated		Not rated	

Table 21b.--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	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23A: Blount-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Depth to dense layer Cutbanks cave Too clayey	1.00 0.50 0.10 0.02	Very limited Depth to saturated zone	1.00
23B: Blount-----	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 Depth to dense layer Cutbanks cave Too clayey	1.00 0.50 0.10 0.02	Very limited Depth to saturated zone	1.00
49A: Watseka-----	Not limited		Very limited Depth to saturated zone Too sandy	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00	Very limited Wind erosion Depth to saturated zone Limited AWC*	1.00 1.00 1.00
67A: Harpster-----	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 0.10	Very limited Ponding (any duration) Depth to saturated zone	1.00 1.00 1.00
69A: Milford-----	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 0.10	Very limited Ponding (any duration) Depth to saturated zone	1.00 1.00 1.00
88D: Sparta-----	Very limited Slope	1.00	Very limited Too sandy Slope	1.00 1.00	Very limited Cutbanks cave Slope	1.00 0.04	Very limited Wind erosion Limited AWC* Slope	1.00 1.00 0.22
91A: Swygert-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.89	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.32 0.10	Very limited Depth to saturated zone Limited AWC*	1.00 0.19

See footnote at end of table

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91B2: Swygart-----	Somewhat limited Slope	0.16	Very limited Depth to saturated zone Water erosion Slope	1.00 0.89 0.16	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.32 0.10	Very limited Depth to saturated zone Limited AWC*	1.00 0.40
91C2: Swygart-----	Somewhat limited Slope	0.62	Very limited Depth to saturated zone Water erosion Slope	1.00 0.89 0.62	Very limited Depth to saturated zone Cutbanks cave Too clayey	1.00 0.10 0.08	Very limited Depth to saturated zone Limited AWC*	1.00 0.51
93C2: Rodman-----	Somewhat limited Slope	0.62	Somewhat limited Slope Water erosion	0.62 0.17	Very limited Cutbanks cave	1.00	Very limited Limited AWC*	1.00
93D2: Rodman-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.17	Very limited Cutbanks cave Slope	1.00 0.04	Very limited Limited AWC* Slope	1.00 0.22
98B: Ade-----	Somewhat limited Slope	0.25	Very limited Too sandy Slope	1.00 0.25	Very limited Cutbanks cave	1.00	Very limited Wind erosion Limited AWC*	1.00 0.96
102A: La Hogue-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.89	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00	Very limited Depth to saturated zone	1.00
103A: Houghton-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Wind erosion	1.00 1.00 1.00
125A: Selma-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.89	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding (any duration) Depth to saturated zone	1.00 1.00
132A: Starks-----	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	Very limited Depth to saturated zone	1.00

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134A: Camden-----	Not limited		Very limited Water erosion	1.00	Very limited Cutbanks cave	1.00	Not limited	
134B: Camden-----	Somewhat limited Slope	0.25	Very limited Water erosion Slope	1.00 0.25	Very limited Cutbanks cave	1.00	Very limited Water erosion	1.00
134C2: Camden-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	Very limited Cutbanks cave	1.00	Very limited Water erosion Slope	1.00 0.06
146A: Elliott-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Depth to dense layer Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone	1.00
146B, 146B2: Elliott-----	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 Depth to dense layer Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone Limited AWC*	1.00 0.52
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	Very limited Depth to saturated zone	1.00
150B: Onarga-----	Somewhat limited Slope	0.25	Very limited Too sandy Slope Water erosion	1.00 0.25 0.17	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC*	0.08
150C2: Onarga-----	Somewhat limited Slope	0.99	Very limited Too sandy Slope Water erosion	1.00 0.99 0.17	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC* Slope	0.13 0.06
151A: Ridgeville---	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.17	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00	Very limited Depth to saturated zone	1.00

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
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	Very limited Ponding (any duration) Depth to saturated zone	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	Very limited Ponding (any duration) Depth to saturated zone	1.00 1.00
184A: Roby-----	Not limited		Very limited Depth to saturated zone Too sandy Water erosion	1.00 1.00 1.00 0.17	Very limited Depth to saturated zone Cutbanks cave	1.00 1.00	Very limited Depth to saturated zone Limited AWC*	1.00 0.23
189A: Martinton----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Very limited Depth to saturated zone	1.00
197A: Troxel-----	Not limited		Somewhat limited Water erosion	0.89	Somewhat limited Depth to saturated zone Cutbanks cave	0.16 0.10	Not limited	
201A: Gilford-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy Water erosion	1.00 1.00 1.00 0.17	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding (any duration) Depth to saturated zone	1.00 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	Very limited Ponding (any duration) Depth to saturated zone	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	Very limited Depth to saturated zone	1.00

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
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 Depth to dense layer Cutbanks cave Too clayey	0.99 0.50 0.10 0.03	Not limited	
223C2: Varna-----	Somewhat limited Slope	0.62	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.62	Somewhat limited Depth to saturated zone Depth to dense layer Cutbanks cave	0.99 0.50 0.10	Not limited	
223D2: Varna-----	Very limited Slope	1.00	Very limited Water erosion Slope Depth to saturated zone	1.00 1.00 1.00	Somewhat limited Depth to saturated zone Depth to dense layer Cutbanks cave Slope	0.99 0.50 0.10 0.04	Somewhat limited Slope	0.22
228B: Nappanee-----	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 Depth to dense layer Too clayey Cutbanks cave	1.00 0.50 0.32 0.10	Very limited Depth to saturated zone Limited AWC*	1.00 0.47
228C2: Nappanee-----	Somewhat limited Slope	0.62	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.62	Very limited Depth to saturated zone Depth to dense layer Too clayey Cutbanks cave	1.00 0.50 0.32 0.10	Very limited Depth to saturated zone Limited AWC*	1.00 1.00
232A: Ashkum-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.89	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone	1.00 1.00
235A: Bryce-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.89	Very limited Ponding Depth to saturated zone Too clayey Cutbanks cave	1.00 1.00 0.50 0.10	Very limited Ponding (any duration) Depth to saturated zone Limited AWC*	1.00 1.00 0.60

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
238A: Rantoul-----	Not limited		Very limited Ponding	1.00	Very limited Ponding	1.00	Very limited Ponding (any duration)	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.89	Too clayey	0.59	Limited AWC*	0.20
					Cutbanks cave	0.10		
240C2: Plattville---	Somewhat limited Slope	0.62	Somewhat limited Water erosion	0.89	Somewhat limited Depth to bedrock	0.42	Not limited	
	Depth to bedrock	0.42	Slope	0.62	Cutbanks cave	0.10		
			Depth to bedrock	0.42				
241C3: Chatsworth---	Somewhat limited Slope	0.62	Very limited Water erosion	1.00	Very limited Depth to saturated zone	1.00	Very limited Restricted permeability	1.00
			Depth to saturated zone	1.00	Depth to dense layer	0.50	Limited AWC*	1.00
			Slope	0.62	Cutbanks cave	0.10		
					Too clayey	0.02		
241D3: Chatsworth---	Very limited Slope	1.00	Very limited Water erosion	1.00	Very limited Depth to saturated zone	1.00	Very limited Restricted permeability	1.00
			Slope	1.00	Depth to dense layer	0.50	Limited AWC*	1.00
			Depth to saturated zone	1.00	Too clayey	0.32	Slope	0.22
					Cutbanks cave	0.10		
					Slope	0.04		
241E3: Chatsworth---	Very limited Slope	1.00	Very limited Water erosion	1.00	Very limited Depth to saturated zone	1.00	Very limited Restricted permeability	1.00
			Slope	1.00	Slope	1.00	Limited AWC*	1.00
			Depth to saturated zone	1.00	Depth to dense layer	0.50	Slope	1.00
					Too clayey	0.32		
					Cutbanks cave	0.10		
241F: Chatsworth---	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Restricted permeability	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00	Limited AWC*	1.00
			Water erosion	0.89	Depth to dense layer	0.50	Slope	1.00
					Too clayey	0.32		
					Cutbanks cave	0.10		
290A: Warsaw-----	Not limited		Somewhat limited Water erosion	0.89	Very limited Cutbanks cave	1.00	Not limited	

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290B: Warsaw-----	Somewhat limited Slope	0.16	Somewhat limited Water erosion Slope	0.89 0.16	Very limited Cutbanks cave	1.00	Not limited	
290C2: Warsaw-----	Somewhat limited Slope	0.62	Somewhat limited Water erosion Slope	0.89 0.62	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC*	0.45
293A: Andres-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.89	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Very limited Depth to saturated zone	1.00
293B: Andres-----	Somewhat limited Slope	0.25	Very limited Depth to saturated zone Water erosion Slope	1.00 0.89 0.25	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Very limited Depth to saturated zone	1.00
294A: Symerton----	Not limited		Somewhat limited Water erosion	0.89	Somewhat limited Depth to saturated zone Cutbanks cave	0.85 0.10	Not limited	
294B: Symerton----	Somewhat limited Slope	0.25	Very limited Depth to saturated zone Water erosion Slope	1.00 0.56 0.25	Very limited Cutbanks cave Depth to saturated zone	1.00 0.97	Not limited	
294C2: Symerton----	Somewhat limited Slope	0.99	Very limited Depth to saturated zone Slope Water erosion	1.00 0.99 0.89	Somewhat limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Limited AWC* Slope	0.15 0.06
295A: Mokena-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.89	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone	1.00
295B: Mokena-----	Somewhat limited Slope	0.16	Very limited Depth to saturated zone Water erosion Slope	1.00 0.89 0.16	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone	1.00

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298A: Beecher-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Depth to dense layer Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone Limited AWC*	1.00 0.04
298B, 298B2: Beecher-----	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 Depth to dense layer Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone Limited AWC*	1.00 0.34
311C: Ritchey-----	Very limited Depth to bedrock Slope	1.00 0.62	Very limited Water erosion Depth to bedrock Slope	1.00 1.00 0.62	Very limited Depth to bedrock Cutbanks cave	1.00 0.10	Very limited Limited AWC* Depth to bedrock	1.00 0.96
311D: Ritchey-----	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Water erosion Depth to bedrock Slope	1.00 1.00 1.00	Very limited Depth to bedrock Cutbanks cave Slope	1.00 0.10 0.04	Very limited Limited AWC* Depth to bedrock Slope	1.00 0.96 0.22
314A: Joliet-----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Ponding Depth to saturated zone Water erosion	1.00 1.00 1.00 0.89	Very limited Depth to bedrock Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Limited AWC* Depth to bedrock	1.00 1.00 1.00 0.96
315A: Channahon----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Water erosion	1.00 0.89	Very limited Depth to bedrock Cutbanks cave	1.00 0.10	Very limited Limited AWC* Depth to bedrock	1.00 0.96
315B: Channahon----	Very limited Depth to bedrock Slope	1.00 0.16	Very limited Depth to bedrock Water erosion Slope	1.00 0.89 0.16	Very limited Depth to bedrock Cutbanks cave	1.00 0.10	Very limited Limited AWC* Depth to bedrock	1.00 0.96
315C2: Channahon----	Very limited Depth to bedrock Slope	1.00 0.62	Very limited Depth to bedrock Water erosion Slope	1.00 0.89 0.62	Very limited Depth to bedrock Cutbanks cave	1.00 0.10	Very limited Limited AWC* Depth to bedrock	1.00 0.96

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
316A: Romeo-----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Ponding Depth to saturated zone Water erosion	1.00 1.00 1.00 0.17	Very limited Depth to bedrock Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10 0.10	Very limited Ponding (any duration) Depth to saturated zone Limited AWC* Depth to bedrock	1.00 1.00 1.00 1.00 0.98
317A: Millsdale----	Very limited Depth to bedrock	1.00	Very limited Water erosion Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 1.00	Very limited Depth to bedrock Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Depth to bedrock Limited AWC*	1.00 1.00 1.00 1.00 0.23
318A: Lorenzo-----	Somewhat limited Content of large stones	0.15	Somewhat limited Water erosion Content of large stones	0.56 0.15	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC*	0.77
318B: Lorenzo-----	Somewhat limited Content of large stones Slope	0.23 0.16	Somewhat limited Water erosion Content of large stones Slope	0.56 0.23 0.16	Very limited Cutbanks cave	1.00	Very limited Limited AWC*	1.00
318C2: Lorenzo-----	Somewhat limited Slope Content of large stones	0.62 0.30	Somewhat limited Slope Water erosion Content of large stones	0.62 0.56 0.30	Very limited Cutbanks cave	1.00	Very limited Limited AWC*	1.00
318D2: Lorenzo-----	Very limited Slope Content of large stones	1.00 0.35	Very limited Slope Water erosion Content of large stones	1.00 0.56 0.35	Very limited Cutbanks cave Slope	1.00 0.04	Very limited Limited AWC* Slope	1.00 0.22
320A: Frankfort----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.32 0.10	Very limited Depth to saturated zone Limited AWC*	1.00 0.43
320B, 320B2: Frankfort----	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 Too clayey Cutbanks cave	1.00 0.32 0.10	Very limited Depth to saturated zone Limited AWC*	1.00 0.48

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
320C2: Frankfort----	Somewhat limited Slope	0.62	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
			Water erosion Slope	0.89 0.62	Too clayey Cutbanks cave	0.32 0.10	Limited AWC*	0.88
325A: Dresden-----	Somewhat limited Content of large stones	0.02	Very limited Too sandy	1.00	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC*	0.26
			Water erosion Content of large stones	0.89 0.02				
325B: Dresden-----	Somewhat limited Slope Content of large stones	0.16 0.03	Very limited Too sandy	1.00	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC*	0.33
			Water erosion Slope Content of large stones	0.89 0.16 0.03				
325C2: Dresden-----	Somewhat limited Slope Content of large stones	0.62 0.01	Very limited Too sandy	1.00	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC*	0.22
			Water erosion Slope Content of large stones	0.89 0.62 0.01				
327A: Fox-----	Not limited		Very limited Water erosion Too sandy	1.00 1.00	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC*	0.30
327B: Fox-----	Somewhat limited Slope	0.16	Very limited Water erosion Too sandy Slope	1.00 1.00 0.16	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC*	0.35
327C2: Fox-----	Somewhat limited Slope	0.62	Very limited Too sandy Water erosion Slope	1.00 0.89 0.62	Very limited Cutbanks cave	1.00	Somewhat limited Limited AWC*	0.62
329A: Will-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy Water erosion	1.00 1.00 1.00 0.89	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding (any duration) Depth to saturated zone Limited AWC*	1.00 1.00 0.41

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
330A: Peotone-----	Not limited		Very limited Water erosion	1.00	Very limited Ponding	1.00	Very limited Ponding (any duration)	1.00
			Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave Too clayey	0.10 0.02		
343A: Kane-----	Not limited		Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
			Too sandy	1.00	Cutbanks cave	1.00		
			Water erosion	0.89				
356A: Elpaso-----	Not limited		Very limited Water erosion	1.00	Very limited Ponding	1.00	Very limited Ponding (any duration)	1.00
			Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10		
369A: Waupecan-----	Not limited		Very limited Water erosion	1.00	Very limited Cutbanks cave	1.00	Not limited	
369B: Waupecan-----	Somewhat limited Slope	0.16	Very limited Water erosion	1.00	Very limited Cutbanks cave	1.00	Not limited	
			Slope	0.16				
380A: Fieldon-----	Not limited		Very limited Ponding	1.00	Very limited Ponding	1.00	Very limited Ponding (any duration)	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Too sandy	1.00	Cutbanks cave	1.00		
			Water erosion	0.17				
387B: Ockley-----	Somewhat limited Slope	0.16	Somewhat limited Water erosion	0.89	Very limited Cutbanks cave	1.00	Not limited	
			Slope	0.16				
403D: Elizabeth----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Limited AWC*	1.00
	Slope	1.00	Slope	1.00	Cutbanks cave	0.10	Depth to bedrock	0.97
	Content of large stones	0.21	Content of large stones	0.21	Slope	0.04	Slope	0.22
			Water erosion	0.17				
403E, 403F: Elizabeth----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Depth to bedrock	1.00	Very limited Limited AWC*	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.28	Content of large stones	0.28	Cutbanks cave	0.10	Depth to bedrock	0.97
			Water erosion	0.17				

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
440A: Jasper-----	Not limited		Somewhat limited Water erosion	0.89	Very limited Cutbanks cave	1.00	Not limited	
440B: Jasper-----	Somewhat limited Slope	0.25	Somewhat limited Water erosion Slope	0.89 0.25	Very limited Cutbanks cave	1.00	Not limited	
440C2: Jasper-----	Somewhat limited Slope	0.99	Somewhat limited Slope Water erosion	0.99 0.89	Very limited Cutbanks cave	1.00	Somewhat limited Slope	0.06
494B: Kankakee-----	Very limited Content of large stones Slope	1.00 0.16	Very limited Content of large stones Water erosion Slope	1.00 0.89 0.16	Somewhat limited Cutbanks cave Content of large stones	0.10 0.01	Somewhat limited Content of rock fragments Limited AWC*	0.50 0.08
513A: Granby-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding (any duration) Depth to saturated zone Limited AWC*	1.00 1.00 1.00
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	Very limited Ponding (any duration) Depth to saturated zone	1.00 1.00
526A: Grundelein---	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	Very limited Depth to saturated zone	1.00
530B: Ozaukee-----	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 Depth to dense layer Cutbanks cave Too clayey	0.99 0.50 0.10 0.02	Somewhat limited Limited AWC*	0.17

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
530C2: Ozaukee-----	Somewhat limited Slope	0.62	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.62	Very limited Depth to saturated zone Depth to dense layer Cutbanks cave Too clayey	1.00 0.50 0.10 0.02	Somewhat limited Limited AWC*	0.44
530C3: Ozaukee-----	Somewhat limited Slope	0.62	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.62	Somewhat limited Depth to saturated zone Depth to dense layer Cutbanks cave Too clayey	0.99 0.50 0.10 0.02	Very limited Water erosion Limited AWC*	1.00 0.66
530D2: Ozaukee-----	Very limited Slope	1.00	Very limited Water erosion Slope Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to saturated zone Depth to dense layer Cutbanks cave Slope Too clayey	1.00 0.50 0.10 0.04 0.02	Somewhat limited Limited AWC* Slope	0.44 0.22
530D3: Ozaukee-----	Very limited Slope	1.00	Very limited Water erosion Slope Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to saturated zone Depth to dense layer Cutbanks cave Slope Too clayey	1.00 0.50 0.10 0.04 0.02	Very limited Water erosion Limited AWC* Slope	1.00 0.73 0.22
530E2, 530F: Ozaukee-----	Very limited Slope	1.00	Very limited Water erosion Slope Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to saturated zone Slope Depth to dense layer Cutbanks cave Too clayey	1.00 1.00 0.50 0.10 0.02	Very limited Slope Limited AWC*	1.00 0.33
531B: Markham-----	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 Cutbanks cave Too clayey	1.00 0.10 0.02	Not limited	

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
531C2: Markham-----	Somewhat limited Slope	0.62	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.62	Very limited Depth to saturated zone Cutbanks cave Too clayey	1.00 0.10 0.02	Somewhat limited Limited AWC*	0.05
531D2: Markham-----	Very limited Slope	1.00	Very limited Water erosion Slope Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to saturated zone Cutbanks cave Slope Too clayey	1.00 0.10 0.04 0.02	Somewhat limited Slope Limited AWC*	0.22 0.05
541A: Graymont-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone Cutbanks cave	1.00 0.10	Not limited	
541B: Graymont-----	Somewhat limited Slope	0.25	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.25	Somewhat limited Depth to saturated zone Cutbanks cave	0.99 0.10	Not limited	
541C2: Graymont-----	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 Cutbanks cave	1.00 0.10	Somewhat limited Slope	0.06
560D2: St. Clair----	Very limited Slope	1.00	Very limited Water erosion Slope Depth to saturated zone	1.00 1.00 1.00	Somewhat limited Depth to saturated zone Too clayey Depth to dense layer Cutbanks cave Slope	0.99 0.68 0.50 0.10 0.04	Somewhat limited Limited AWC* Slope	0.88 0.22
560E: St. Clair----	Very limited Slope	1.00	Very limited Slope Depth to saturated zone Water erosion	1.00 1.00 0.89	Very limited Depth to saturated zone Slope Depth to dense layer Too clayey Cutbanks cave	1.00 1.00 0.50 0.32 0.10	Very limited Limited AWC* Slope	1.00 1.00
570B: Martinsville	Somewhat limited Slope	0.16	Very limited Water erosion Slope	1.00 0.16	Very limited Cutbanks cave	1.00	Not limited	

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
570C2: Martinsville	Somewhat limited Slope	0.62	Very limited Water erosion Slope	1.00 0.62	Very limited Cutbanks cave	1.00	Not limited	
570D2: Martinsville	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 1.00	Very limited Cutbanks cave Slope	1.00 0.04	Somewhat limited Slope	0.22
570E2, 570F: Martinsville	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 1.00	Very limited Cutbanks cave Slope	1.00 1.00	Very limited Slope	1.00
594A: Reddick-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.89	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone	1.00 1.00
614A: Chenoa-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Very limited Depth to saturated zone	1.00
614B: Chenoa-----	Somewhat limited Slope	0.25	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.25	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Very limited Depth to saturated zone	1.00
688B: Braidwood----	Somewhat limited Slope	0.36	Very limited Water erosion Slope	1.00 0.36	Very limited Cutbanks cave Depth to dense layer	1.00 0.50	Not limited	
688D: Braidwood----	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 1.00	Very limited Cutbanks cave Slope Depth to dense layer	1.00 0.91 0.50	Somewhat limited Slope	0.94
688G: Braidwood----	Very limited Slope Content of large stones	1.00 0.01	Very limited Water erosion Slope Content of large stones	1.00 1.00 0.01	Very limited Slope Cutbanks cave Depth to dense layer	1.00 1.00 0.50	Very limited Slope Limited AWC*	1.00 0.08

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
719A: Symerton-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.89	Somewhat limited Depth to saturated zone Cutbanks cave	0.99 0.10	Somewhat limited Limited AWC*	0.18
719B: Symerton-----	Somewhat limited Slope	0.25	Very limited Depth to saturated zone Water erosion Slope	1.00 0.89 0.25	Somewhat limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Limited AWC*	0.10
719C2: Symerton-----	Somewhat limited Slope	0.99	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.99	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Limited AWC* Slope	0.40 0.06
740A: Darroch-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.89	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Very limited Depth to saturated zone	1.00
741B: Oakville-----	Somewhat limited Slope	0.25	Very limited Too sandy Slope	1.00 0.25	Very limited Cutbanks cave	1.00	Very limited Wind erosion Limited AWC*	1.00 1.00
741D: Oakville-----	Very limited Slope	1.00	Very limited Too sandy Slope	1.00 1.00	Very limited Cutbanks cave Slope	1.00 0.04	Very limited Wind erosion Limited AWC* Slope	1.00 1.00 0.22
741E, 741F: Oakville-----	Very limited Slope	1.00	Very limited Slope Too sandy	1.00 1.00	Very limited Cutbanks cave Slope	1.00 1.00	Very limited Wind erosion Limited AWC* Slope	1.00 1.00 1.00
792A: Bowes-----	Not limited		Very limited Water erosion	1.00	Very limited Cutbanks cave	1.00	Not limited	
792B: Bowes-----	Somewhat limited Slope	0.16	Very limited Water erosion Slope	1.00 0.16	Very limited Cutbanks cave	1.00	Very limited Water erosion	1.00
802B: Orthents-----	Somewhat limited Slope	0.25	Very limited Water erosion Slope	1.00 0.25	Somewhat limited Depth to saturated zone Cutbanks cave	0.47 0.10	Very limited Water erosion	1.00

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
802D: Orthents-----	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 1.00	Somewhat limited Depth to saturated zone Cutbanks cave Slope	0.47 0.10 0.04	Very limited Water erosion Slope	1.00 0.22
805B: Orthents-----	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 Too clayey Cutbanks cave	0.99 0.32 0.10	Very limited Restricted permeability Limited AWC* Water erosion	1.00 1.00 1.00
830: Landfills----	Not rated		Not rated		Not rated		Not rated	
864: Pits, quarry	Not rated		Not rated		Not rated		Not rated	
865: Pits, gravel	Not rated		Not rated		Not rated		Not rated	
903A: Muskego-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Wind erosion	1.00 1.00 1.00
Houghton----	Not limited		Very limited Ponding Depth to saturated zone Too sandy	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Wind erosion	1.00 1.00 1.00
969E2, 969F: Casco-----	Very limited Slope Content of large stones	1.00 0.24	Very limited Slope Too sandy Water erosion Content of large stones	1.00 1.00 0.89 0.24	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope Limited AWC*	1.00 1.00
Rodman-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.17	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Limited AWC* Slope	1.00 1.00
1067A: Harpster-----	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 0.10	Very limited Ponding (any duration) Depth to saturated zone	1.00 1.00

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1082A: Millington---	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.89	Very limited Ponding Flooding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Flooding	1.00 1.00 1.00
1103A: Houghton-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Wind erosion	1.00 1.00 1.00
1201A: Gilford-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.17	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding (any duration) Depth to saturated zone Limited AWC*	1.00 1.00 0.27
1903A: Muskego-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Wind erosion	1.00 1.00 1.00
Houghton-----	Not limited		Very limited Ponding Depth to saturated zone Too sandy	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Content of organic matter Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Wind erosion	1.00 1.00 1.00
3082A: Millington---	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.89	Very limited Ponding Flooding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Flooding	1.00 1.00 1.00
3107A: Sawmill-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.56	Very limited Ponding Flooding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Flooding	1.00 1.00 1.00

See footnote at end of table.

Table 21b.--Water Management--Continued

Map symbol and soil name	Grassed waterways surface drains		Terraces and diversions		Tile drains and underground outlets		Sprinkler irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3314A: Joliet-----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Ponding Depth to saturated zone Water erosion	1.00 1.00 1.00 0.89	Very limited Depth to bedrock Ponding Flooding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Limited AWC* Flooding Depth to bedrock	1.00 1.00 1.00 1.00 0.96
3316A: Romeo-----	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Ponding Depth to saturated zone Too sandy Water erosion	1.00 1.00 1.00 1.00 0.17	Very limited Depth to bedrock Ponding Flooding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00 0.10	Very limited Ponding (any duration) Depth to saturated zone Limited AWC* Flooding Depth to bedrock	1.00 1.00 1.00 1.00 0.98
3451A: Lawson-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.89	Very limited Flooding Depth to saturated zone Cutbanks cave	1.00 1.00 0.10	Very limited Depth to saturated zone Flooding	1.00 1.00
8082A: Millington---	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.89	Very limited Ponding Depth to saturated zone Flooding Cutbanks cave	1.00 1.00 0.60 0.10	Very limited Ponding (any duration) Depth to saturated zone	1.00 1.00
8321A: Du Page-----	Not limited		Somewhat limited Water erosion	0.89	Somewhat limited Flooding Depth to saturated zone Cutbanks cave	0.60 0.24 0.10	Not limited	
8451A: Lawson-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.89	Very limited Depth to saturated zone Flooding Cutbanks cave	1.00 0.60 0.10	Very limited Depth to saturated zone	1.00
W: Water-----	Not rated		Not rated		Not rated		Not rated	

* Available water capacity.

Table 22.--Engineering Index Properties

(Absence of an entry indicates that the 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	
23A:												
Blount-----	0-7	Silt loam	CL, ML	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	25-40	8-20
	7-13	Silt loam	CL, ML	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	20-35	8-18
	13-26	Silty clay loam, silty clay, clay loam	CH, CL, MH, ML	A-6, A-7-6, A-7-5	0-1	0-5	95-100	85-98	70-97	65-95	35-60	15-35
	26-32	Silty clay loam, clay loam, silty clay	CH, CL, ML, MH	A-6, A-7-6, A-7-5	0-1	0-5	95-100	80-95	65-93	60-90	35-55	10-30
	32-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6, A-7-5	0-1	0-10	90-100	80-93	65-92	60-90	30-50	10-25
23B:												
Blount-----	0-6	Silt loam	CL, ML	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	25-40	8-20
	6-10	Silt loam	CL, ML	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	20-35	8-18
	10-23	Silty clay loam, silty clay, clay loam	CH, CL, MH, ML	A-6, A-7-6, A-7-5	0-1	0-5	95-100	85-98	70-97	65-95	35-60	15-35
	23-34	Silty clay loam, clay loam, silty clay	CH, CL, ML, MH	A-6, A-7-6, A-7-5	0-1	0-5	95-100	80-95	65-93	60-90	35-55	10-30
	34-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6, A-7-5	0-1	0-10	90-100	80-93	65-92	60-90	30-50	10-25
49A:												
Watseka-----	0-10	Loamy fine sand	SC-SM, SM	A-2-4	0	0	100	95-100	80-100	10-30	10-25	NP-5
	10-32	Fine sand, sand, loamy fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	95-100	90-100	60-80	3-25	5-20	NP-4
	32-60	Fine sand, sand, loamy fine sand	SP, SM, SP-SM	A-2-4, A-3	0	0	90-100	90-100	60-80	3-25	0-20	NP-4
67A:												
Harpster----	0-18	Silty clay loam	ML, CL	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	40-46	15-19
	18-41	Silty clay loam	ML, CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	41-56	Silt loam	ML, CL	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-18
	56-60	Loam, silt loam	CL, CL-ML, SC, SC-SM, ML	A-4, A-6	0	0	100	95-100	70-90	45-70	22-33	4-14
69A:												
Milford-----	0-18	Silty clay loam	CH, CL, MH	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	40-55	20-30
	18-50	Silty clay, silty clay loam, clay loam	CH, CL, MH	A-7-6, A-7-5	0	0	100	95-100	90-100	75-100	40-60	20-40
	50-60	Stratified sandy loam to silty clay loam	CL, SC, ML	A-6, A-7-6, A-7-5	0	0	95-100	95-100	90-100	45-100	25-50	10-30

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
88D: Sparta-----	0-11	Loamy fine sand	SP-SM, SM	A-2-4, A-3	0	0	95-100	90-100	50-95	5-30	5-20	NP-4
	11-36	Loamy fine sand, fine sand, sand	SP-SM, SM	A-2-4, A-3	0	0	95-100	90-100	50-90	5-25	3-15	NP-3
	36-80	Sand, fine sand	SP, SM, SP-SM	A-2-4, A-3	0	0	90-100	85-100	50-85	2-20	0-14	NP
91A: Swygert-----	0-12	Silty clay loam	CL, ML	A-7-6, A-7-5, A-6	0	0	100	98-100	95-100	85-98	35-45	15-21
	12-26	Silty clay, clay	CH, CL, MH	A-7-6, A-7-5	0	0	100	98-100	95-100	85-98	45-60	22-35
	26-51	Silty clay, clay	CL, CH, MH	A-7-6, A-7-5	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	51-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6, A-7-5	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32
91B2: Swygert-----	0-7	Silty clay loam	CL, ML	A-7-6, A-7-5, A-6	0	0	100	98-100	95-100	85-98	39-46	18-25
	7-30	Silty clay, clay	CH, CL, MH	A-7-6, A-7-5	0	0	100	98-100	95-100	85-98	45-60	22-35
	30-48	Silty clay, clay	CL, CH, MH	A-7-6, A-7-5	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	48-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6, A-7-5	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32
91C2: Swygert-----	0-7	Silty clay loam	CL, ML	A-7-6, A-7-5, A-6	0	0	100	98-100	95-100	85-98	39-46	18-25
	7-18	Silty clay, clay	CH, CL, MH	A-7-6, A-7-5	0	0	100	98-100	95-100	85-98	45-60	22-35
	18-36	Silty clay, clay	CL, CH, MH	A-7-6, A-7-5	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	36-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6, A-7-5	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32
93C2: Rodman-----	0-8	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
	8-18	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
	18-60	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

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
93D2: Rodman-----	0-8	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
	8-12	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
	12-60	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
98B: Ade-----	0-22	Loamy fine sand	SP-SM, SM	A-2-4	0	0	100	100	65-90	10-35	0-14	NP
	22-29	Fine sand, loamy fine sand	SP-SM, SP, SM	A-2-4, A-3	0	0	100	100	65-90	3-20	0-14	NP
	29-60	Stratified sand to fine sandy loam	SP-SM, SP, SM	A-2-4, A-3	0	0	100	100	65-90	2-35	0-14	NP
	60-80	Fine sand	SP, SM, SP-SM	A-2-4, A-3	0	0	100	100	60-85	2-15	0-10	NP
102A: La Hogue----	0-16	Loam	ML, CL, CL-ML	A-4	0	0	100	95-100	80-100	50-80	20-35	3-10
	16-32	Sandy clay loam, loam, clay loam	SC, ML, SM, CL	A-4, A-6	0	0	100	95-100	80-100	40-85	25-40	8-20
	32-48	Sandy loam, loamy sand, loam	ML, SC, SM, SC-SM, CL	A-2-4, A-4, A-6, A-2-6	0	0	100	90-100	75-90	20-70	15-30	2-15
	48-60	Stratified loamy sand to silt loam	SC, SC-SM, ML, CL-ML, SM	A-2-4, A-4	0	0	95-100	80-100	60-90	15-70	18-25	NP-10
103A: Houghton----	0-19	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	19-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
125A: Selma-----	0-6	Loam	CL, ML	A-4, A-6	0	0	100	95-100	80-100	55-85	25-35	7-17
	6-13	Clay loam	CL, ML	A-6, A-4	0	0	100	95-100	80-100	55-85	25-40	8-20
	13-44	Loam, silty clay loam, sandy loam	CL, SC	A-6, A-4	0	0	100	85-100	80-95	38-85	24-36	11-19
	44-80	Stratified sand to silt loam	SM, SC-SM, SC, CL-ML, CL	A-4, A-2-4, A-6, A-2-6	0	0	90-100	80-100	60-90	10-70	15-35	5-20
132A: Starks-----	0-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	10-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	14-31	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-25
	31-43	Clay loam, silt loam, sandy loam	CL, SC, ML, SM	A-6, A-4	0	0	95-100	90-100	70-95	40-85	25-40	8-20
	43-60	Stratified loamy sand to clay loam	SC, CL, SC- SM, SM	A-2-4, A-4, A-6, A-2-6	0-1	0-5	90-100	80-100	65-90	15-80	5-30	NP-15

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
134A:												
Camden-----	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	8-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	13-38	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	38-56	Clay loam, loam, sandy loam	CL, SC, ML, CL-ML, SM	A-2-4, A-4, A-6	0	0-1	90-100	85-100	60-95	30-85	20-40	5-15
	56-60	Stratified silt loam to loamy sand	SM, SC, SC- SM, ML	A-2-4, A-4	0	0-3	85-100	80-98	50-90	15-75	5-25	NP-10
134B:												
Camden-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	9-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	14-35	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	35-62	Clay loam, loam, sandy loam	CL, SC, ML, CL-ML, SM	A-2-4, A-4, A-6	0	0-1	90-100	85-100	60-95	30-85	20-40	5-15
	62-80	Stratified silt loam to loamy sand	SM, SC, SC- SM, ML	A-2-4, A-4	0	0-3	85-100	80-98	50-90	15-75	5-25	NP-10
134C2:												
Camden-----	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	8-24	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	24-41	Clay loam, loam, sandy loam	CL, SC, ML, CL-ML, SM	A-2-4, A-4, A-6	0	0-1	90-100	85-100	60-95	30-85	20-40	5-15
	41-60	Stratified silt loam to loamy sand	SM, SC, SC- SM, ML	A-2-4, A-4	0	0-3	85-100	80-98	50-90	15-75	5-25	NP-10
146A:												
Elliott-----	0-6	Silt loam	ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	29-37	7-15
	6-11	Silty clay loam	ML, CL	A-7-5, A-7-6	0	0	100	100	95-100	85-100	40-46	15-19
	11-16	Silty clay	MH, CL, CH	A-7-5, A-7-6	0	0	100	95-100	90-100	85-100	42-56	18-30
	16-41	Silty clay loam	CL, ML	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	ML, CL	A-6	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17
146B:												
Elliott-----	0-9	Silt loam	ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	29-37	7-15
	9-13	Silty clay loam	ML, CL	A-7-5, A-7-6	0	0	100	100	95-100	85-100	40-46	15-19
	13-17	Silty clay loam, silty clay	CL, MH, CH	A-7-5, A-7-6	0	0	100	95-100	90-100	85-100	40-52	15-28
	17-35	Silty clay loam	ML, CL	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-42	12-20
	35-60	Silty clay loam	CL, ML	A-6	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17
146B2:												
Elliott-----	0-8	Silty clay loam	ML, CL	A-7-5, A-7-6	0	0	100	100	95-100	85-100	40-46	15-19
	8-14	Silty clay loam, silty clay	MH, CH, CL	A-7-5, A-7-6	0	0	100	95-100	90-100	85-100	40-52	15-28
	14-27	Silty clay loam	CL, ML	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-42	12-20
	27-60	Silty clay loam	CL, ML	A-6	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
149A: Brenton-----	0-12	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	30-40	8-15
	12-28	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	35-50	10-25
	28-44	Clay loam, silt loam, sandy loam	CL, SC, ML, SM	A-6, A-7-6	0	0	100	95-100	90-100	40-85	30-45	10-20
	44-60	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
150B: Onarga-----	0-13	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4, A-6	0	0	100	100	75-95	25-50	15-28	2-12
	13-29	Loam, sandy loam, fine sandy loam	SC, SC-SM, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	98-100	95-100	75-95	30-60	19-32	5-14
	29-60	Stratified sand to sandy loam	SM, SC-SM, SP-SM	A-2-4, A-4	0	0	95-100	90-100	65-95	5-40	10-20	NP-6
150C2: Onarga-----	0-7	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4, A-6	0	0	100	100	75-95	25-50	15-28	2-12
	7-27	Loam, sandy loam, fine sandy loam	SC, SC-SM, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	98-100	95-100	75-95	30-60	19-32	5-14
	27-64	Stratified sand to sandy loam	SM, SC-SM, SP-SM	A-2-4, A-4	0	0	95-100	90-100	65-95	5-40	10-20	NP-6
151A: Ridgeville	0-16	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	75-100	20-50	15-25	2-10
	16-40	Fine sandy loam, loam, sandy clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	0	98-100	95-100	75-95	35-60	20-35	5-15
	40-60	Loamy sand, sandy loam, fine sand	SC, SC-SM, SM, SP-SM	A-2-4, A-4	0	0	95-100	90-100	65-95	5-45	15-20	NP-8
152A: Drummer-----	0-14	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	95-100	95-100	85-100	30-50	15-30
	14-42	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
	42-50	Loam, clay loam, sandy loam	CL, ML, SM, SC	A-6, A-7-6	0	0-5	95-100	90-100	75-95	40-85	30-50	15-30
	50-60	Stratified loamy sand to silty clay loam	SM, SC, ML, CL	A-2, A-4, A-6	0	0-5	95-100	80-98	75-95	15-85	20-35	7-20

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
153A:												
Pella-----	0-12	Silty clay loam	ML, CL	A-7-6, A-7-5	0	0	100	95-100	90-100	85-100	40-50	15-25
	12-33	Silty clay loam	CL, ML	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, sandy loam	CL, SC, ML, SM	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	SM, SC, ML, 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
184A:												
Roby-----	0-6	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	75-100	20-50	15-25	2-10
	6-15	Loamy fine sand, fine sandy loam	SC-SM, SM, ML, CL-ML	A-2-4, A-4	0	0	98-100	95-100	70-95	20-55	15-20	NP-8
	15-32	Fine sandy loam, loam, sandy loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	0	98-100	95-100	75-95	35-60	20-35	5-15
	32-60	Stratified fine sand to fine sandy loam	SC, SC-SM, SM, SP-SM	A-2-4, A-4	0	0	95-100	90-100	65-95	5-45	15-20	NP-8
189A:												
Martinton---	0-12	Silt loam	CL, ML	A-6, A-7-6	0	0	95-100	95-100	90-100	75-95	30-45	10-20
	12-39	Silty clay loam, silty clay	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	70-95	35-50	20-30
	39-60	Stratified sandy loam to silty clay	CL, SC, ML, SM	A-6, A-7-6	0	0	90-100	80-100	75-100	35-90	25-45	10-25
197A:												
Troxel-----	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	20-30	5-15
	7-32	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-20
	32-62	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	90-100	80-100	25-45	10-25
	62-80	Stratified sandy loam to gravelly clay loam	CL-ML, CL, SC-SM, SC, ML	A-4, A-6, A-2-4, A-2-6	0-1	0-3	90-100	70-100	60-90	30-85	20-35	5-20
201A:												
Gilford-----	0-22	Fine sandy loam	SM, SC-SM, SC	A-2-4, A-4	0	0	95-100	95-100	65-85	30-50	15-25	2-10
	22-41	Sandy loam, fine sandy loam	SC, SM, SC-SM	A-4, A-2-4	0	0	95-100	95-100	60-75	20-45	15-30	NP-8
	41-60	Sand, fine sand, loamy sand	SP-SM, SP, SM	A-2-4, A-3	0	0	95-100	85-100	55-75	3-20	0-14	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
206A:												
Thorp-----	0-11	Silt loam	ML, CL	A-4, A-6	0	0	100	95-100	90-100	85-100	20-40	8-20
	11-15	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	90-100	85-100	15-35	7-15
	15-41	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	95-100	90-100	85-100	35-50	15-30
	41-49	Loam, clay loam, sandy clay loam	CL, SC, ML	A-7-6, A-4, A-6	0	0	90-100	85-100	75-95	45-90	20-45	8-25
	49-60	Stratified loamy sand to clay loam	SC, SC-SM, SM, CL, CL-ML	A-2-4, A-4, A-6, A-2-6	0	0	85-100	80-95	65-85	20-85	15-25	NP-15
219A:												
Millbrook---	0-7	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	7-24	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-25
	24-53	Clay loam, loam, sandy loam	SC, CL, SM, ML	A-6, A-7-6	0	0-3	95-100	85-100	70-95	40-85	25-50	10-25
	53-80	Stratified loamy sand to clay loam	CL-ML, CL, SC, SM	A-2-6, A-2-4, A-4, A-6	0-1	0-5	90-100	80-100	65-90	15-80	5-30	NP-15
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
223C2:												
Varna-----	0-9	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	80-95	25-40	8-20
	9-29	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
	29-50	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
	50-60	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
223D2:												
Varna-----	0-9	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	80-95	25-40	8-20
	9-31	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
	31-36	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
	36-60	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

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
241C3:	In				Pct	Pct					Pct	
Chatsworth--	0-5	Silty clay	MH, CH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	50-65	25-35
	5-16	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	45-75	20-45
	16-60	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	45-65	20-35
241D3:												
Chatsworth--	0-2	Silty clay	CH, MH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	50-65	25-35
	2-22	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	45-75	20-45
	22-60	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	45-65	20-35
241E3:												
Chatsworth--	0-7	Silty clay	CH, MH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	50-65	25-35
	7-21	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	45-75	20-45
	21-60	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	45-65	20-35
241F:												
Chatsworth--	0-4	Silty clay loam	CL, MH, CH	A-7-6, A-7-5, A-6	0	0	100	100	95-100	90-100	30-55	10-30
	4-24	Silty clay loam, clay	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	45-75	20-45
	24-60	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	45-65	20-35
290A:												
Warsaw-----	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	70-95	20-30	4-15
	11-28	Sandy clay loam, loam, clay loam, silty clay loam	CL, ML, SC, SM	A-4, A-6	0	0-3	90-100	85-100	70-95	40-90	20-40	8-20
	28-32	Gravelly loam, gravelly sandy clay loam, gravelly clay loam, gravelly sandy loam	CL, GC, SC, SC-SM	A-2-4, A-2-6, A-4, A-6	0-1	0-5	70-90	60-75	55-70	30-60	20-35	5-20
	32-80	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-80	15-75	7-20	2-10	0-15	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
290B: Warsaw-----	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	70-95	20-30	4-15
	10-24	Sandy clay loam, loam, clay loam, silty clay loam	CL, ML, SC, SM	A-4, A-6	0	0-3	90-100	85-100	70-95	40-90	20-40	8-20
	24-34	Gravelly loam, gravelly sandy clay loam, gravelly clay loam, gravelly sandy loam	CL, GC, SC, SC-SM	A-2-4, A-2-6, A-4, A-6	0-1	0-5	70-90	60-75	55-70	30-60	20-35	5-20
	34-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-80	15-75	7-20	2-10	0-15	NP
290C2: Warsaw-----	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	70-95	20-30	4-15
	8-16	Sandy clay loam, loam, clay loam, silty clay loam	CL, ML, SC, SM	A-4, A-6	0	0-3	90-100	85-100	70-95	40-90	20-40	8-20
	16-27	Gravelly loam, gravelly sandy clay loam, gravelly clay loam, gravelly sandy loam	CL, GC, SC, SC-SM	A-2-4, A-2-6, A-4, A-6	0-1	0-5	70-90	60-75	55-70	30-60	20-35	5-20
	27-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-80	15-75	7-20	2-10	0-15	NP
293A: Andres-----	0-11	Silt loam	CL, ML	A-4, A-6	0	0	95-100	90-100	80-95	65-90	29-33	7-13
	11-26	Clay loam, sandy clay loam, loam	ML, CL	A-6	0	0-1	95-100	85-100	75-95	50-80	31-39	11-18
	26-50	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
293B: Andres-----	0-10	Silt loam	CL, ML	A-4, A-6	0	0	95-100	90-100	80-95	65-90	29-33	7-13
	10-36	Clay loam, sandy clay loam, loam	CL, ML	A-6	0	0-1	95-100	85-100	75-95	50-80	31-39	11-18
	36-47	Silty clay loam, silt loam	CL, ML	A-6	0	0-1	95-100	85-100	80-95	70-95	33-39	12-17
	47-60	Silty clay loam, silt loam	CL, ML	A-6	0	0-3	95-100	85-100	80-95	70-95	30-39	10-17

Table 22.--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	
294A:												
Symerton----	0-12	Silt loam	ML, CL	A-6, A-4	0	0	95-100	90-100	80-100	65-90	29-33	7-13
	12-18	Silty clay loam	CL, ML	A-6	0	0	95-100	90-100	80-100	70-95	31-37	10-15
	18-41	Gravelly clay loam, loam, clay loam, gravelly loam	SC-SM, SC, CL, SM	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	41-50	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	50-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18
294B:												
Symerton----	0-15	Silt loam	ML, CL	A-6, A-4	0	0	95-100	90-100	80-100	65-90	29-33	7-13
	15-19	Silty clay loam	CL, ML	A-6	0	0	95-100	90-100	80-100	70-95	31-37	10-15
	19-35	Gravelly clay loam, loam, clay loam, gravelly loam	CL, SC-SM, SM, SC	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	35-39	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	39-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18
294C2:												
Symerton----	0-8	Silt loam	ML, CL	A-6, A-4	0	0	95-100	90-100	80-100	65-90	29-33	7-13
	8-31	Gravelly clay loam, loam, clay loam, gravelly loam	SC-SM, CL, SC, SM	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	31-40	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	40-60	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18
295A:												
Mokena-----	0-5	Silt loam	ML, CL	A-4, A-6	0	0	95-100	90-100	80-95	65-90	29-33	7-13
	5-15	Loam	ML, CL-ML, CL	A-6, A-4	0	0	95-100	90-100	80-95	60-80	25-35	5-15
	15-38	Clay loam, sandy clay loam, loam	ML, CL	A-6	0	0-1	95-100	85-100	75-95	50-80	31-39	11-18
	38-42	Silty clay, clay	CH, CL, MH	A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	80-100	45-60	20-35
	42-80	Silty clay, clay	CH, MH, CL	A-7-5, A-7-6	0	0-5	90-100	85-100	85-100	80-100	40-55	20-31
295B:												
Mokena-----	0-15	Silt loam	ML, CL	A-4, A-6	0	0	95-100	90-100	80-95	65-90	29-33	7-13
	15-31	Clay loam, sandy clay loam, loam	CL, ML	A-6	0	0-1	95-100	85-100	75-95	50-80	31-39	11-18
	31-44	Silty clay, clay	CH, MH, CL	A-7-6, A-7-5	0	0-2	95-100	90-100	85-100	80-100	45-60	20-35
	44-80	Silty clay, clay	CH, CL, MH	A-7-6, A-7-5	0	0-5	90-100	85-100	80-100	80-100	40-55	20-31

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
315B:												
Channahon---	0-11	Silt loam	ML, CL	A-4, A-6	0-1	0-5	90-100	80-100	75-95	70-90	20-40	7-20
	11-18	Loam, silt loam, clay loam, silty clay loam	CL	A-6, A-7-6	0-2	0-10	90-100	80-100	75-95	50-85	30-45	15-25
	18-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
315C2:												
Channahon---	0-6	Silt loam	CL, ML	A-4, A-6	0-1	0-5	90-100	80-100	75-95	70-90	20-40	7-20
	6-13	Loam, silt loam, clay loam, silty clay loam	CL	A-6, A-7-6	0-2	0-10	90-100	80-100	75-95	50-85	30-45	15-25
	13-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
316A:												
Romeo-----	0-8	Silt loam	CL	A-4, A-6	0-1	0-10	90-100	80-100	75-95	70-90	25-40	7-20
	8-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
317A:												
Millsdale---	0-18	Silty clay loam	CL, ML	A-6, A-7-6	0	0	90-100	85-100	80-100	75-95	30-50	12-25
	18-36	Silty clay, silty clay loam, clay loam	CL, CH, MH	A-7-6, A-7-5	0	0-5	85-100	80-100	75-100	60-95	40-60	20-35
	36-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
318A:												
Lorenzo-----	0-12	Loam	CL, ML	A-6	0	0-5	95-100	90-100	75-90	60-75	25-40	10-20
	12-21	Loam, clay loam, gravelly sandy clay loam	CL, ML, SC, SM	A-2-6, A-6, A-7-6	0	2-10	85-100	50-95	35-85	20-70	30-45	10-25
	21-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5
318B:												
Lorenzo-----	0-9	Loam	CL, ML	A-6	0	0-5	95-100	90-100	75-90	60-75	25-40	10-20
	9-18	Loam, clay loam, gravelly sandy clay loam	CL, ML, SC, SM	A-2-6, A-6, A-7-6	0	2-10	85-100	50-95	35-85	20-70	30-45	10-25
	18-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
318C2:												
Lorenzo-----	0-7	Loam	CL, ML	A-6	0	0-5	95-100	90-100	75-90	60-75	25-40	10-20
	7-16	Loam, clay loam, gravelly sandy clay loam	CL, ML, SC, SM	A-2-6, A-6, A-7-6	0	2-10	85-100	50-95	35-85	20-70	30-45	10-25
	16-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5
318D2:												
Lorenzo-----	0-5	Loam	CL, ML	A-6	0	0-5	95-100	90-100	75-90	60-75	25-40	10-20
	5-15	Loam, clay loam, gravelly sandy clay loam	CL, ML, SC, SM	A-2-6, A-6, A-7-6	0	2-10	85-100	50-95	35-85	20-70	30-45	10-25
	15-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5
320A:												
Frankfort---	0-9	Silt loam	CL, ML	A-4, A-6	0	0	98-100	95-100	90-100	80-95	25-40	8-20
	9-14	Silty clay loam	CL, ML	A-6, A-7-6	0	0	98-100	95-100	90-100	80-95	25-45	10-25
	14-24	Silty clay, clay	CL, CH, MH	A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	80-95	40-70	20-40
	24-34	Silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	75-95	30-50	15-30
	34-60	Silty clay loam, silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0-1	0-3	95-100	85-100	80-100	70-95	30-50	10-30
320B:												
Frankfort---	0-8	Silt loam	CL, ML	A-4, A-6	0	0	98-100	95-100	90-100	80-95	25-40	8-20
	8-12	Silty clay loam	CL, ML	A-6, A-7-6	0	0	98-100	95-100	90-100	80-95	25-45	10-25
	12-32	Silty clay, clay	CL, CH, MH	A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	80-95	40-70	20-40
	32-37	Silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	75-95	30-50	15-30
	37-60	Silty clay loam, silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0-1	0-3	95-100	85-100	80-100	70-95	30-50	10-30
320B2:												
Frankfort---	0-6	Silty clay loam	CL, ML	A-6, A-7-6	0	0	98-100	95-100	90-100	80-95	25-45	10-25
	6-21	Silty clay, clay	CL, CH, MH	A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	80-95	40-70	20-40
	21-35	Silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	75-95	30-50	15-30
	35-60	Silty clay loam, silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0-1	0-3	95-100	85-100	80-100	70-95	30-50	10-30

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
320C2:												
Frankfort---	0-7	Silty clay loam	CL, ML	A-6, A-7-6	0	0	98-100	95-100	90-100	80-95	25-45	10-25
	7-28	Silty clay, clay	CL, CH, MH	A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	80-95	40-70	20-40
	28-32	Silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	75-95	30-50	15-30
	32-60	Silty clay loam, silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0-1	0-3	95-100	85-100	80-100	70-95	30-50	10-30
325A:												
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
	7-19	Silty clay loam, clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	80-100	70-100	50-95	30-45	10-25
	19-30	Clay loam, gravelly clay loam, sandy clay loam, very gravelly loam	CL, ML, SC, SM	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
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
	7-16	Silty clay loam, clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	80-100	70-100	50-95	30-45	10-25
	16-30	Clay loam, gravelly clay loam, sandy clay loam, very gravelly loam	CL, ML, SC, SM	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

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
325C2: Dresden-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	70-98	20-40	5-15
	9-15	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
	15-32	Clay loam, gravelly clay loam, loam, very gravelly loam	CL, ML, SC, SM	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
327A: Fox-----	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	6-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	9-20	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
	20-27	Clay loam, sandy 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
	27-60	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
327B: Fox-----	0-4	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	4-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	7-13	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
	13-28	Clay loam, sandy 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

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
327C2:												
Fox-----	0-4	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	4-12	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0-1	95-100	85-100	75-100	70-95	25-50	10-25
	12-24	Clay loam, sandy 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
	24-60	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-----	0-16	Silty clay loam	CL, ML	A-4, A-6	0	0	95-100	90-100	85-98	75-95	25-40	8-20
	16-24	Loam, clay loam, silty clay loam	ML, CL	A-6, A-7-6	0-1	0-5	90-100	80-100	60-98	55-90	25-50	15-30
	24-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-2	1-10	40-85	15-70	10-40	1-15	0-14	NP
330A:												
Peotone----	0-13	Silty clay loam	CL, MH, CH	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	40-65	15-35
	13-50	Silty clay loam, silty clay	MH, CL, CH	A-7-6, A-7-5	0	0-3	98-100	95-100	90-100	85-100	40-70	15-40
	50-60	Silty clay loam, silt loam, silty clay	CL, CH, MH	A-6, A-7-6, A-7-5	0	0-5	95-100	95-100	90-100	75-100	30-60	15-30
343A:												
Kane-----	0-11	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	90-100	75-95	25-35	5-15
	11-26	Silty clay loam, clay loam, loam	ML, CL	A-6, A-7-6	0	0	95-100	95-100	90-100	75-95	35-45	10-20
	26-34	Clay loam, sandy loam, loam	CL, SC	A-4, A-6	0-1	0-5	90-100	80-95	60-90	40-70	20-35	8-15
	34-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP-GM, SP, SP-SM, GP	A-1-a, A-1-b	0-1	0-10	30-85	15-75	10-50	2-12	0-15	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
356A:												
Elpaso-----	0-21	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	95-100	90-100	35-50	15-30
	21-44	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	95-100	90-100	30-50	15-30
	44-69	Clay loam, silt loam, silty clay loam	ML, CL	A-6, A-7-6	0	0	100	85-100	80-100	70-100	25-45	10-25
	69-80	Clay loam, silt loam, silty clay loam	CL	A-6	0	0-5	95-100	85-100	75-100	70-98	20-35	10-20
369A:												
Waupecan----	0-14	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-95	20-35	8-15
	14-35	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-95	35-45	15-25
	35-49	Stratified gravelly loamy sand to sandy clay loam	CL-ML, ML, SM, SC, SC-SM	A-2-4, A-4	0	0	90-100	50-100	50-70	25-65	0-20	NP-10
	49-67	Stratified gravelly loamy sand to extremely gravelly coarse sand	GM, GP-GM, SP, SP-SM	A-1-a, A-1-b	0-5	5-35	40-95	15-80	10-50	1-15	0-14	NP
369B:												
Waupecan----	0-11	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-95	20-35	8-15
	11-39	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-95	35-45	15-25
	39-45	Stratified gravelly loamy sand to sandy clay loam	CL-ML, ML, SM, SC, SC-SM	A-2-4, A-4	0	0	90-100	50-100	50-70	25-65	0-20	NP-10
	45-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GM, GP-GM, SP, SP-SM	A-1-a, A-1-b	0-5	5-35	40-95	15-80	10-50	1-15	0-14	NP
380A:												
Fieldon-----	0-15	Loam	ML, CL, CL-ML	A-4	0	0	100	100	85-95	50-75	20-35	NP-10
	15-36	Fine sandy loam, very fine sandy loam, loam	CL-ML, SM, ML, SC-SM	A-4	0	0	100	100	70-90	35-60	15-30	NP-5
	36-60	Stratified fine sand to fine sandy loam	SM	A-2-4, A-4	0	0	100	100	60-100	15-40	0-14	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
403F: Elizabeth---	0-6	Silt loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	75-95	60-90	30-45	10-20
	6-11	Silt loam, loam, clay loam, cobbly silt loam	CL, ML	A-6, A-7-6	0-5	0-35	85-100	80-100	70-95	55-90	30-45	10-20
	11-14	Very cobbly silt loam, extremely cobbly loam, very cobbly loam, extremely cobbly clay loam	CL, ML	A-6	0-20	40-75	80-100	70-100	60-95	50-90	25-40	10-20
	14-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
440A: Jasper-----	0-11	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	85-100	50-70	25-35	5-15
	11-30	Clay loam, silty clay loam, loam	CL, ML, SC, SM	A-6, A-7-6	0	0	100	95-100	80-95	45-85	30-45	10-20
	30-47	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	90-100	70-85	30-60	20-30	5-15
	47-60	Stratified sand to silt loam	SC, SC-SM, SM, CL, CL-ML	A-2-4, A-4	0	0	100	85-100	60-85	15-65	5-25	NP-10
440B: Jasper-----	0-12	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	85-100	50-70	25-35	5-15
	12-26	Clay loam, silty clay loam, loam	CL, ML, SC, SM	A-6, A-7-6	0	0	100	95-100	80-95	45-85	30-45	10-20
	26-50	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	90-100	70-85	30-60	20-30	5-15
	50-60	Stratified sand to silt loam	SC, SC-SM, SM, CL, CL-ML	A-2-4, A-4	0	0	100	85-100	60-85	15-65	5-25	NP-10
440C2: Jasper-----	0-8	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	85-100	50-70	25-35	5-15
	8-23	Clay loam, silty clay loam, loam	CL, ML, SC, SM	A-6, A-7-6	0	0	100	95-100	80-95	45-85	30-45	10-20
	23-42	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	90-100	70-85	30-60	20-30	5-15
	42-60	Stratified sand to silt loam	SC, SC-SM, SM, CL, CL-ML	A-2-4, A-4	0	0	100	85-100	60-85	15-65	5-25	NP-10

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
494B:												
Kankakee----	0-14	Fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0-10	95-100	95-100	80-90	35-50	20-35	5-15
	14-22	Sandy loam, clay loam, sandy clay loam, loam	SC, SM, CL, ML	A-6, A-7-6	0-1	0-10	95-100	85-98	70-90	30-60	30-50	10-25
	22-27	Very cobbly loam, cobbly sandy loam, cobbly loam	SC, SC-SM, SM, CL	A-2-4, A-2-6, A-6, A-4	0-2	20-70	75-95	45-80	30-65	20-55	20-40	3-15
	27-60	Very cobbly loam, extremely cobbly sandy loam, cobbly loam	SM, SC-SM, SC, SP-SM	A-1-b, A-2-4, A-4	0-2	25-80	70-90	45-70	25-60	10-40	15-35	NP-10
513A:												
Granby-----	0-8	Fine sandy loam	SC-SM, SM	A-4, A-2-4	0	0	100	100	60-70	25-45	5-20	NP-5
	8-17	Sand, loamy sand, loamy fine sand	SP-SM, SM	A-2-4, A-3	0	0	100	95-100	50-75	5-25	0-15	NP-3
	17-30	Sand, fine sand, loamy fine sand	SP-SM, SM	A-2-4, A-3	0	0	100	95-100	50-75	5-25	0-15	NP-3
	30-80	Sand, fine sand, loamy sand	SP-SM, SP	A-2-4, A-3	0	0	100	90-100	50-70	0-20	0-14	NP
523A:												
Dunham-----	0-11	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-95	30-50	15-30
	11-31	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	90-100	85-95	35-45	15-25
	31-42	Clay loam, silt loam, sandy loam, gravelly loam	CL, ML, SC	A-2-6, A-4, A-6	0	0-5	90-100	70-100	55-90	30-80	25-40	8-20
	42-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM, GM, GP-GM	A-1-b, A-1-a	0-3	0-10	35-90	15-80	10-40	2-25	0-14	NP
526A:												
Grundelein--	0-13	Silt loam	ML, CL	A-4, A-6	0	0	100	100	90-100	85-100	30-40	8-15
	13-29	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
	29-43	Clay loam, sandy loam, silt loam, gravelly loam	ML, SC, CL	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
	43-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SM, SP-SM, GP-GM, GM	A-1-a, A-1-b	0-3	0-10	40-90	15-80	10-50	2-25	0-14	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
530B: Ozaukee-----	0-4	Silt loam	ML, CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	4-10	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0-2	95-100	95-100	90-100	85-95	20-35	5-15
	10-21	Silty clay loam, clay, silty clay	MH, CL, CH	A-7-5, A-7-6	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	21-39	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	39-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530C2: Ozaukee-----	0-6	Silt loam	ML, CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	6-21	Silty clay loam, clay, silty clay	CL, CH, MH	A-7-6, A-7-5	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	21-28	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	28-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530C3: Ozaukee-----	0-9	Silty clay loam	ML, CL	A-6, A-7-6	0	0-1	90-98	85-98	85-95	80-95	35-50	15-25
	9-21	Silty clay loam, clay, silty clay	CL, MH, CH	A-7-6, A-7-5	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	21-27	Silty clay loam, silty clay	CL, CH	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	27-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530D2: Ozaukee-----	0-6	Silt loam	ML, CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	6-20	Silty clay loam, clay, silty clay	CH, MH, CL	A-7-6, A-7-5	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	20-28	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	28-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530D3: Ozaukee-----	0-9	Silty clay loam	CL, ML	A-6, A-7-6	0	0-1	90-98	85-98	85-95	80-95	35-50	15-25
	9-21	Silty clay loam, clay, silty clay	CH, CL, MH	A-7-6, A-7-5	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	21-25	Silty clay loam, silty clay	CL, CH	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	25-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
530E2: Ozaukee-----	0-6	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	6-27	Silty clay loam, clay, silty clay	MH, CH, CL	A-7-6, A-7-5	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	27-31	Silty clay loam, silty clay	CL, CH	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	31-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530F: Ozaukee-----	0-5	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	5-29	Silty clay loam, clay, silty clay	CL, CH, MH	A-7-6, A-7-5	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	29-36	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	36-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
531B: Markham-----	0-8	Silt loam	ML, CL, CL-ML	A-4, A-6	0-1	0-2	95-100	95-100	90-100	85-95	25-40	6-17
	8-21	Silty clay, silty clay loam	CH, CL	A-7-6, A-7-5	0-1	0-5	95-100	90-100	85-100	80-95	40-55	20-35
	21-32	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-2	0-5	90-100	85-100	80-100	75-95	30-50	15-30
	32-60	Silty clay loam, clay loam	ML, CL	A-6, A-7-6	0-2	0-10	90-100	85-100	75-95	70-95	30-45	13-25
531C2: Markham-----	0-8	Silt loam	ML, CL-ML, CL	A-4, A-6	0-1	0-2	95-100	95-100	90-100	85-95	25-40	6-17
	8-20	Silty clay, silty clay loam	CH, CL	A-7-5, A-7-6	0-1	0-5	95-100	90-100	85-100	80-95	40-55	20-35
	20-29	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-2	0-5	90-100	85-100	80-100	75-95	30-50	15-30
	29-60	Silty clay loam, clay loam	ML, CL	A-6, A-7-6	0-2	0-10	90-100	85-100	75-95	70-95	30-45	13-25
531D2: Markham-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0-1	0-2	95-100	95-100	90-100	85-95	25-40	6-17
	7-20	Silty clay, silty clay loam	CH, CL	A-7-5, A-7-6	0-1	0-5	95-100	90-100	85-100	80-95	40-55	20-35
	20-30	Silty clay, silty clay loam	ML, CL	A-6, A-7-6	0-2	0-5	90-100	85-100	80-100	75-95	30-50	15-30
	30-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-2	0-10	90-100	85-100	75-95	70-95	30-45	13-25

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
541A:												
Graymont----	0-12	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	12-21	Silty clay loam, silt loam	ML, CL	A-7-6, A-6	0	0	100	100	95-100	90-100	30-50	10-25
	21-33	Silty clay loam, silt loam	CL, CH, ML, MH	A-6, A-7-6	0	0-5	90-100	85-99	80-95	80-90	30-55	10-30
	33-60	Silty clay loam, silt loam	ML, CL	A-4, A-6, A-7-6	0	0-5	90-100	80-98	80-95	80-90	25-50	8-25
541B:												
Graymont----	0-12	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	12-33	Silty clay loam, silt loam	CL, ML	A-7-6, A-6	0	0	100	100	95-100	90-100	30-50	10-25
	33-38	Silty clay loam, silt loam	CH, ML, CL, MH	A-6, A-7-6	0	0-5	90-100	85-99	80-95	80-90	30-55	10-30
	38-60	Silty clay loam, silt loam	ML, CL	A-4, A-6, A-7-6	0	0-5	90-100	80-98	80-95	80-90	25-50	8-25
541C2:												
Graymont----	0-9	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	9-30	Silty clay loam, silt loam	ML, CL	A-7-6, A-6	0	0	100	100	95-100	90-100	30-50	10-25
	30-38	Silty clay loam, silt loam	ML, MH, CL, CH	A-6, A-7-6	0	0-5	90-100	85-99	80-95	80-90	30-55	10-30
	38-60	Silty clay loam, silt loam	ML, CL	A-4, A-6, A-7-6	0	0-5	90-100	80-98	80-95	80-90	25-50	8-25
560D2:												
St. Clair---	0-5	Silty clay loam	CL, ML	A-6, A-7-6	0	0-1	95-100	95-100	90-100	80-98	30-45	10-30
	5-8	Silty clay loam	CL, ML	A-6, A-7-6	0	0-1	95-100	95-100	90-100	80-98	30-45	10-30
	8-22	Silty clay, clay	CL, CH, MH	A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	80-98	40-70	20-40
	22-37	Silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0	0-2	90-100	85-100	80-100	75-95	30-50	15-30
	37-65	Silty clay loam, silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0-1	0-3	90-100	80-98	75-97	70-95	30-50	10-30
560E:												
St. Clair---	0-5	Silty clay loam	CL, ML	A-6, A-7-6	0	0-1	95-100	95-100	90-100	80-98	30-45	10-30
	5-12	Silty clay, clay	CL, CH, MH	A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	80-98	40-70	20-40
	12-26	Silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0	0-2	90-100	85-100	80-100	75-95	30-50	15-30
	26-60	Silty clay loam, silty clay, clay	CL, ML	A-6, A-7-5, A-7-6	0-1	0-3	90-100	80-98	75-97	70-95	30-50	10-30

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
570B: Martinsville	0-7	Loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-95	50-70	15-25	3-8
	7-13	Sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	90-100	75-95	45-70	15-25	3-8
	13-48	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	45-90	25-40	7-15
	48-63	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
	63-80	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	0-6	Loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-95	50-70	15-25	3-8
	6-9	Sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	90-100	75-95	45-70	15-25	3-8
	9-35	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	45-90	25-40	7-15
	35-54	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
	54-80	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	0-5	Loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-95	50-70	15-25	3-8
	5-13	Sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	90-100	75-95	45-70	15-25	3-8
	13-35	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	45-90	25-40	7-15
	35-55	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
	55-80	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 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
570E2:												
Martinsville	0-4	Loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-95	50-70	15-25	3-8
	4-13	Sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	90-100	75-95	45-70	15-25	3-8
	13-47	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	45-90	25-40	7-15
	47-60	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
	60-80	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
570F:												
Martinsville	0-4	Loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-95	50-70	15-25	3-8
	4-11	Sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	90-100	75-95	45-70	15-25	3-8
	11-43	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	45-90	25-40	7-15
	43-58	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
	58-75	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
594A:												
Reddick-----	0-13	Clay loam	ML, CL	A-6, A-7-6	0	0	95-100	85-98	80-90	60-85	30-45	10-25
	13-32	Clay loam, silty clay loam, loam	CL, ML	A-6, A-7-6	0	0-5	95-100	85-98	80-90	55-85	30-45	10-25
	32-47	Silty clay, silty clay loam	ML, CH, CL	A-6, A-7-6	0	0-5	95-100	85-100	85-95	75-95	35-55	15-35
	47-60	Silty clay loam, silty clay	CL, ML	A-6, A-7-6	0	0-5	95-100	85-100	85-95	75-95	30-50	15-30
614A:												
Chenoa-----	0-12	Silty clay loam	CL, ML	A-7-5, A-7-6	0	0	100	100	97-100	93-100	40-46	15-19
	12-32	Silty clay loam, silty clay	CL, MH, CH	A-7-6	0	0	100	100	97-100	93-100	45-52	22-28
	32-36	Silty clay loam, silt loam	ML, CL	A-7-6, A-6	0	0-1	95-100	85-98	80-95	70-95	33-43	12-20
	36-60	Silty clay loam, silt loam	CL, ML	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
614B:												
Chenoa-----	0-15	Silty clay loam	ML, CL	A-7-5, A-7-6	0	0	100	100	97-100	93-100	40-46	15-19
	15-28	Silty clay loam, silty clay	MH, CH, CL	A-7-6	0	0	100	100	97-100	93-100	45-52	22-28
	28-47	Silty clay loam, silt loam	CL, ML	A-7-6, A-6	0	0-1	95-100	85-98	80-95	70-95	33-43	12-20
	47-60	Silty clay loam, silt loam	CL, ML	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17
688B:												
Braidwood---	0-9	Loam	CL, ML	A-6, A-4	0	0-5	95-100	90-100	70-95	55-75	25-35	8-15
	9-22	Silt loam, loam	ML, CL	A-6, A-4	0-1	0-5	95-100	90-100	70-90	50-85	25-35	8-15
	22-42	Silt loam, loam, sandy loam	CL, CL-ML, SC-SM, ML, SM	A-2-4, A-4	0-1	0-10	90-100	85-100	60-90	30-75	0-20	NP-10
	42-64	Stratified sand to silt loam	SM, ML, SC-SM, SP-SM	A-2-4, A-4	0-2	0-10	90-100	85-100	55-85	10-75	0-20	NP-5
688D:												
Braidwood---	0-8	Loam	CL, ML	A-6, A-4	0	0-5	95-100	90-100	70-95	55-75	25-35	8-15
	8-16	Silt loam, loam	CL, ML	A-6, A-4	0-1	0-5	95-100	90-100	70-90	50-85	25-35	8-15
	16-42	Silt loam, loam, sandy loam	CL, CL-ML, SC-SM, ML, SM	A-2-4, A-4	0-1	0-10	90-100	85-100	60-90	30-75	0-20	NP-10
	42-65	Stratified sand to silt loam	SC-SM, SP-SM, SM, ML	A-2-4, A-4	0-2	0-10	90-100	85-100	55-85	10-75	0-20	NP-5
688G:												
Braidwood---	0-6	Loam	CL, ML	A-6, A-4	0	0-5	95-100	90-100	70-95	55-75	25-35	8-15
	6-15	Silt loam, loam	ML, CL	A-6, A-4	0-1	0-5	95-100	90-100	70-90	50-85	25-35	8-15
	15-37	Silt loam, loam, sandy loam	CL, CL-ML, SC-SM, ML, SM	A-2-4, A-4	0-1	0-10	90-100	85-100	60-90	30-75	0-20	NP-10
	37-65	Stratified sand to silt loam	SP-SM, SC-SM, ML, SM	A-2-4, A-4	0-2	0-10	90-100	85-100	55-85	10-75	0-20	NP-5
719A:												
Symerton----	0-13	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4, A-6	0	0-1	98-100	95-100	75-95	25-50	15-28	2-12
	13-32	Gravelly clay loam, loam, clay loam, gravelly loam	SC-SM, SM, SC, CL	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	32-44	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	44-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
719B: Symerton----	0-17	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4, A-6	0	0-1	98-100	95-100	75-95	25-50	15-28	2-12
	17-31	Gravelly clay loam, loam, clay loam, gravelly loam	CL, SC, SM, SC-SM	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	31-39	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	39-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18
719C2: Symerton----	0-9	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4, A-6	0	0-1	98-100	95-100	75-95	25-50	15-28	2-12
	9-22	Gravelly clay loam, loam, clay loam, gravelly loam	SC-SM, SM, SC, CL	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	22-31	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	31-60	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18
740A: Darroch-----	0-15	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	95-100	80-100	70-90	15-30	3-15
	15-21	Silt loam, clay loam, loam	ML, CL	A-4, A-6	0	0	95-100	90-100	75-100	60-90	20-40	7-20
	21-29	Clay loam, sandy clay loam, loam, fine sandy loam	SC-SM, SC, CL-ML, CL, ML	A-2-6, A-4, A-6, A-2-4	0	0	95-100	90-100	70-100	30-80	20-40	5-20
	29-60	Stratified sandy loam to silt loam	SM, CL-ML, SC-SM, ML, CL	A-4	0	0	90-100	80-100	70-90	35-85	15-25	NP-8
741B: Oakville----	0-7	Fine sand	SP, SM, SP-SM	A-2-4, A-3	0	0	100	95-100	60-90	0-20	0-14	NP
	7-40	Fine sand, loamy fine sand	SP-SM, SP, SM	A-2-4, A-3	0	0	100	95-100	65-95	0-30	0-14	NP
	40-60	Loamy sand, fine sand	SP-SM, SP, SM	A-2-4, A-3	0	0	100	95-100	60-90	0-30	0-14	NP
741D: Oakville----	0-6	Fine sand	SM, SP-SM, SP	A-2-4, A-3	0	0	100	95-100	60-90	0-20	0-14	NP
	6-30	Fine sand, loamy fine sand	SM, SP-SM, SP	A-2-4, A-3	0	0	100	95-100	65-95	0-30	0-14	NP
	30-60	Loamy sand, fine sand	SP, SP-SM, SM	A-2-4, A-3	0	0	100	95-100	60-90	0-30	0-14	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
741E:												
Oakville----	0-5	Fine sand	SM, SP-SM, SP	A-2-4, A-3	0	0	100	95-100	60-90	0-20	0-14	NP
	5-29	Fine sand, loamy fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	95-100	65-95	0-30	0-14	NP
	29-60	Loamy sand, fine sand	SP-SM, SM, SP	A-2-4, A-3	0	0	100	95-100	60-90	0-30	0-14	NP
741F:												
Oakville----	0-5	Fine sand	SM, SP-SM, SP	A-2-4, A-3	0	0	100	95-100	60-90	0-20	0-14	NP
	5-32	Fine sand, loamy fine sand	SM, SP-SM, SP	A-2-4, A-3	0	0	100	95-100	65-95	0-30	0-14	NP
	32-60	Loamy sand, fine sand	SM, SP-SM, SP	A-2-4, A-3	0	0	100	95-100	60-90	0-30	0-14	NP
792A:												
Bowes-----	0-8	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-20
	8-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	11-31	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	90-100	35-45	15-25
	31-61	Gravelly clay loam, gravelly sandy loam, very gravelly loamy sand	CL, SM, CL- ML, SC	A-2-4, A-4, A-6	0-2	0-20	45-90	30-80	25-75	15-70	10-30	NP-15
	61-80	Stratified extremely gravelly coarse sand to gravelly sandy loam	GM, GP-GM, SP, SP-SM	A-1-a, A-1-b	0-2	5-35	30-85	15-80	10-50	2-20	0-20	NP-3
792B:												
Bowes-----	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-20
	8-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	12-37	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	90-100	35-45	15-25
	37-43	Gravelly clay loam, gravelly sandy loam, very gravelly loamy sand	CL, SM, CL- ML, SC	A-2-4, A-4, A-6	0-2	0-20	45-90	30-80	25-75	15-70	10-30	NP-15
	43-70	Stratified extremely gravelly coarse sand to gravelly sandy loam	GM, GP-GM, SP, SP-SM	A-1-a, A-1-b	0-2	5-35	30-85	15-80	10-50	2-20	0-20	NP-3
802B, 802D:												
Orthents----	0-6	Loam	ML, CL	A-6, A-4	0-1	0-5	95-100	85-100	80-95	50-80	20-40	8-20
	6-60	Loam, silt loam, clay loam	ML, CL	A-6, A-4	0-1	0-5	95-100	80-100	75-95	50-80	20-40	8-20

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
805B:												
Orthents----	0-6	Silty clay	CH, CL, MH	A-7-6	0	0	98-100	90-100	85-100	80-98	45-55	20-40
	6-60	Silty clay, clay, silty clay loam	CL, CH	A-7-6	0	0	98-100	85-100	80-98	75-95	40-55	25-45
830: Landfills.												
864: Pits, quarry.												
865: Pits, gravel.												
903A:												
Muskego-----	0-5	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	5-36	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	36-80	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	75-96	40-50	2-8
Houghton----	0-19	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	19-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
969E2:												
Casco-----	0-5	Loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	70-95	50-80	20-30	3-10
	5-19	Gravelly clay loam, sandy clay loam, gravelly loam	CL, 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
969F:												
Casco-----	0-4	Loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	70-95	50-80	20-30	3-10
	4-15	Gravelly clay loam, sandy clay loam, gravelly loam	CL, 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
	15-60	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

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
969F: Rodman-----	0-11	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
	11-14	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
1067A: Harpster----	0-18	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	40-46	15-19
	18-41	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	41-56	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-18
	56-60	Loam, silt loam	ML, SC-SM, SC, CL-ML, CL	A-4, A-6	0	0	100	95-100	70-90	45-70	22-33	4-14
1082A: Millington--	0-21	Silt loam	CL, CL-ML, ML	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
1103A: Houghton----	0-12	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	12-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
1201A: Gilford-----	0-12	Fine sandy loam	SM, SC-SM, SC	A-2-4, A-4	0	0	95-100	95-100	65-85	30-50	15-25	2-10
	12-36	Sandy loam, fine sandy loam	SC-SM, SC, SM	A-4, A-2-4	0	0	95-100	95-100	60-75	20-45	15-30	NP-8
	36-60	Sand, fine sand, loamy sand	SP-SM, SP, SM	A-2-4, A-3	0	0	95-100	85-100	55-75	3-20	0-14	NP
1903A: Muskego-----	0-5	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	5-36	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	36-80	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	75-96	40-50	2-8
Houghton----	0-19	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	19-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
3082A: Millington--	0-26	Silt loam	CL-ML, CL, ML	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	CL, ML	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	CL, ML	A-4, A-7-6, A-6	0	0	90-100	80-100	60-95	40-85	20-45	5-20

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
3107A:												
Sawmill-----	0-29	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	29-48	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	48-60	Silty clay loam, clay loam, silt loam	CL, ML	A-7-6, A-6	0	0	100	90-100	85-100	80-95	37-46	16-22
3314A:												
Joliet-----	0-13	Silt loam	CL	A-6, A-4	0-1	0-5	90-100	80-100	75-95	70-90	25-40	7-20
	13-19	Loam, clay loam, silty clay loam	CL	A-6, A-7-6	0-1	0-5	90-100	80-100	60-98	55-90	30-50	20-35
	19-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
3316A:												
Romeo-----	0-10	Silt loam	CL	A-4, A-6	0-1	0-10	90-100	80-100	75-95	70-90	25-40	7-20
	10-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
3451A:												
Lawson-----	0-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-100	20-40	5-20
	13-53	Silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-100	20-35	5-15
	53-80	Silt loam, silty clay loam, loam	CL, ML	A-6, A-7-6	0	0	100	100	90-100	60-100	20-45	10-25
8082A:												
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	CL, ML	A-4, A-7-6, A-6	0	0	90-100	80-100	60-95	40-85	20-45	5-20
8321A:												
Du Page-----	0-30	Silt loam	CL, ML	A-6, A-7-6	0	0	95-100	90-100	85-100	70-95	30-45	11-21
	30-35	Sandy loam, loam, gravelly sandy clay loam, silt loam	CL, ML	A-4, A-6, A-7-6	0	0	90-100	70-100	65-100	45-90	25-45	7-20
	35-60	Stratified silt loam to gravelly sandy clay loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0	0	85-100	65-100	60-95	40-90	15-40	5-20

Table 23.--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	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	g/cc	In/hr	In/in	Pct	Pct					
23A:												
Blount-----	0-7	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.32	.32	4	6	48
	7-13	15-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	13-26	35-48	1.40-1.70	0.06-0.6	0.12-0.19	3.0-5.9	0.2-1.0	.37	.37			
	26-32	27-45	1.50-1.70	0.06-0.2	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
	32-60	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
23B:												
Blount-----	0-6	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.32	.32	4	6	48
	6-10	15-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	10-23	35-48	1.40-1.70	0.06-0.6	0.12-0.19	3.0-5.9	0.2-1.0	.37	.37			
	23-34	27-45	1.50-1.70	0.06-0.2	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
	34-60	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
49A:												
Watseka-----	0-10	2-13	1.35-1.55	6-20	0.10-0.12	0.0-2.9	1.0-2.5	.02	.02	5	2	134
	10-32	1-10	1.45-1.65	6-20	0.06-0.11	0.0-2.9	0.0-0.5	.10	.10			
	32-60	1-10	1.50-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
67A:												
Harpster-----	0-18	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-6.0	.24	.24	5	4L	86
	18-41	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	41-56	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			
	56-60	15-27	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	0.0-0.5	.32	.32			
69A:												
Milford-----	0-18	35-40	1.30-1.50	0.6-2	0.20-0.23	6.0-8.9	4.0-6.0	.20	.20	5	4	86
	18-50	35-42	1.40-1.60	0.2-0.6	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	50-60	18-30	1.50-1.70	0.2-0.6	0.20-0.22	3.0-5.9	0.0-1.0	.37	.37			
88D:												
Sparta-----	0-11	2-10	1.30-1.50	6-20	0.06-0.09	0.0-2.9	0.5-2.0	.02	.02	5	2	134
	11-36	1-8	1.40-1.60	6-20	0.05-0.11	0.0-2.9	0.0-0.5	.10	.10			
	36-80	0-5	1.50-1.70	6-20	0.04-0.07	0.0-2.9	0.0-0.5	.05	.05			
91A:												
Swygert-----	0-12	27-35	1.30-1.50	0.2-0.6	0.19-0.22	3.0-5.9	3.0-5.0	.20	.20	4	7	38
	12-26	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	26-51	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	51-60	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
91B2:												
Swygert-----	0-7	30-38	1.35-1.55	0.2-0.6	0.18-0.21	3.0-5.9	2.0-4.0	.20	.20	4	7	38
	7-30	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	30-48	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	48-60	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
91C2:												
Swygert-----	0-7	30-38	1.35-1.55	0.2-0.6	0.18-0.21	3.0-5.9	2.0-4.0	.20	.20	4	7	38
	7-18	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	18-36	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	36-60	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
93C2:												
Rodman-----	0-8	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
	8-18	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	18-60	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
93D2: Rodman-----	0-8	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
	8-12	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	12-60	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
98B: Ade-----	0-22	3-12	1.35-1.55	6-20	0.10-0.12	0.0-2.9	1.0-2.0	.02	.02	5	2	134
	22-29	3-12	1.40-1.60	6-20	0.06-0.11	0.0-2.9	0.2-1.0	.15	.15			
	29-60	3-16	1.40-1.60	6-20	0.06-0.14	0.0-2.9	0.2-0.5	.17	.17			
	60-80	1-8	1.50-1.70	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.15	.15			
102A: La Hogue-----	0-16	15-27	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	3.0-4.0	.24	.24	5	5	56
	16-32	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	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	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-----	0-19	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	3	2	134
	19-60	---	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
125A: Selma-----	0-6	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	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	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	7-18	1.60-1.90	2-6	0.07-0.19	0.0-2.9	0.0-1.0	.24	.24			
132A: Starks-----	0-10	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	10-14	15-27	1.30-1.50	0.6-2	0.21-0.23	0.0-2.9	0.5-1.0	.49	.49			
	14-31	27-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	31-43	10-30	1.45-1.65	0.6-2	0.12-0.19	0.0-2.9	0.2-0.5	.32	.32			
	43-60	5-30	1.50-1.75	0.6-6	0.10-0.18	0.0-2.9	0.0-0.5	.28	.28			
134A: Camden-----	0-8	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
	8-13	14-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.5-1.0	.49	.49			
	13-38	22-35	1.35-1.55	0.6-2	0.14-0.24	3.0-5.9	0.2-1.0	.37	.37			
	38-56	18-30	1.45-1.65	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	56-60	5-20	1.55-1.70	0.6-6	0.07-0.17	0.0-2.9	0.0-0.5	.28	.28			
134B: Camden-----	0-9	14-27	1.25-1.45	0.6-2	0.21-0.25	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-14	14-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.5-1.0	.49	.49			
	14-35	22-35	1.35-1.55	0.6-2	0.14-0.24	3.0-5.9	0.2-1.0	.37	.37			
	35-62	18-30	1.45-1.65	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	62-80	5-20	1.55-1.70	0.6-6	0.07-0.17	0.0-2.9	0.0-0.5	.28	.28			
134C2: Camden-----	0-8	14-27	1.25-1.45	0.6-2	0.21-0.25	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	8-24	22-35	1.35-1.55	0.6-2	0.14-0.24	3.0-5.9	0.2-1.0	.37	.37			
	24-41	18-30	1.45-1.65	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	41-60	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	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	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	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	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	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 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
146B: Elliott-----	0-9	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
	9-13	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	2.5-4.0	.20	.20			
	13-17	38-45	1.40-1.60	0.06-0.6	0.11-0.14	6.0-8.9	0.5-1.5	.32	.32			
	17-35	27-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	35-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
146B2: Elliott-----	0-8	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	2.5-4.0	.20	.20	4	7	38
	8-14	38-45	1.40-1.60	0.06-0.6	0.11-0.14	6.0-8.9	0.5-1.5	.32	.32			
	14-27	27-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	27-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
149A: Brenton-----	0-12	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
	12-28	25-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	28-44	18-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	44-60	5-30	1.50-1.70	0.6-6	0.11-0.20	0.0-2.9	0.0-0.5	.28	.28			
150B: Onarga-----	0-13	8-15	1.30-1.65	0.6-6	0.14-0.18	0.0-2.9	1.0-3.0	.17	.17	5	3	86
	13-29	12-18	1.45-1.70	0.6-6	0.15-0.19	0.0-2.9	0.2-1.0	.24	.24			
	29-60	2-10	1.65-1.90	2-20	0.05-0.13	0.0-2.9	0.0-0.5	.15	.15			
150C2: Onarga-----	0-7	8-15	1.30-1.65	0.6-6	0.14-0.18	0.0-2.9	1.0-2.0	.17	.17	5	3	86
	7-27	12-18	1.45-1.70	0.6-6	0.15-0.19	0.0-2.9	0.2-1.0	.24	.24			
	27-64	2-10	1.65-1.90	2-20	0.05-0.13	0.0-2.9	0.0-0.5	.15	.15			
151A: Ridgeville-----	0-16	10-15	1.30-1.65	0.6-6	0.15-0.18	0.0-2.9	2.0-4.0	.17	.17	5	3	86
	16-40	12-22	1.45-1.70	0.6-6	0.15-0.19	0.0-2.9	0.2-1.0	.24	.24			
	40-60	3-10	1.55-1.90	2-20	0.05-0.13	0.0-2.9	0.0-0.5	.15	.15			
152A: Drummer-----	0-14	27-35	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-7.0	.24	.24	5	7	38
	14-42	20-35	1.20-1.45	0.6-2	0.21-0.24	3.0-5.9	0.5-2.0	.37	.37			
	42-50	15-33	1.30-1.55	0.6-2	0.17-0.20	3.0-5.9	0.2-0.5	.32	.32			
	50-60	10-32	1.40-1.70	0.6-6	0.11-0.19	0.0-2.9	0.0-0.2	.28	.28			
153A: Pella-----	0-12	27-35	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-6.0	.24	.24	5	7	38
	12-33	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	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	10-30	1.40-1.70	0.6-6	0.10-0.22	0.0-2.9	0.0-0.2	.28	.28			
184A: Roby-----	0-6	10-15	1.25-1.45	0.6-6	0.12-0.15	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	6-15	3-15	1.25-1.55	0.6-6	0.09-0.15	0.0-2.9	0.2-0.5	.20	.20			
	15-32	12-18	1.40-1.70	0.6-6	0.12-0.19	0.0-2.9	0.1-0.5	.24	.24			
	32-60	3-15	1.50-1.85	2-20	0.04-0.17	0.0-2.9	0.0-0.5	.15	.15			
189A: Martinton-----	0-12	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.24	.24	5	6	48
	12-39	35-45	1.25-1.45	0.2-0.6	0.11-0.20	3.0-5.9	0.5-2.0	.37	.37			
	39-60	15-42	1.40-1.60	0.2-0.6	0.11-0.22	3.0-5.9	0.0-0.5	.37	.37			
197A: Troxel-----	0-7	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
	7-32	18-27	1.30-1.50	0.6-2	0.21-0.23	0.0-2.9	1.0-3.0	.32	.32			
	32-62	25-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	62-80	15-35	1.40-1.65	0.6-2	0.11-0.20	3.0-5.9	0.1-0.5	.28	.32			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
201A: Gilford-----	0-22	10-18	1.45-1.65	2-6	0.16-0.18	0.0-2.9	3.0-5.0	.17	.17	5	3	86
	22-41	8-18	1.55-1.75	2-6	0.12-0.14	0.0-2.9	0.2-1.5	.24	.24			
	41-60	1-8	1.65-1.85	6-20	0.05-0.08	0.0-2.9	0.0-0.5	.05	.05			
206A: Thorpe-----	0-11	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	4.0-6.0	.28	.28	5	6	48
	11-15	18-25	1.30-1.50	0.2-0.6	0.20-0.22	0.0-2.9	0.2-1.0	.43	.43			
	15-41	22-35	1.35-1.55	0.06-0.2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	41-49	18-30	1.40-1.60	0.6-2	0.10-0.20	3.0-5.9	0.2-0.5	.32	.32			
	49-60	5-30	1.50-1.70	0.6-6	0.05-0.13	0.0-2.9	0.0-0.1	.28	.28			
219A: Millbrook-----	0-7	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
	7-24	25-35	1.45-1.65	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	24-53	18-32	1.45-1.70	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	53-80	10-30	1.50-1.75	0.6-6	0.11-0.19	0.0-2.9	0.0-0.5	.28	.28			
223B: Varna-----	0-12	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	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	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	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
223C2: Varna-----	0-9	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.24	.24	4	6	48
	9-29	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	29-50	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	50-60	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
223D2: Varna-----	0-9	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.24	.24	4	6	48
	9-31	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	31-36	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	36-60	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
228B: Nappanee-----	0-4	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	4-9	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	9-23	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	23-46	40-55	1.60-1.80	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	46-60	30-45	1.70-1.90	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
228C2: Nappanee-----	0-5	27-38	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	1.0-2.5	.28	.28	4	7	38
	5-8	27-35	1.30-1.50	0.6-2	0.16-0.21	3.0-5.9	0.2-1.0	.37	.37			
	8-23	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	23-27	40-55	1.60-1.80	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	27-80	30-45	1.70-1.90	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
232A: Ashkum-----	0-12	35-40	1.20-1.45	0.2-0.6	0.18-0.21	6.0-8.9	3.0-7.0	.20	.20	5	4	86
	12-29	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	0.5-2.5	.32	.32			
	29-54	30-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	54-60	27-35	1.55-1.75	0.2-0.6	0.07-0.15	3.0-5.9	0.0-0.5	.43	.43			
235A: Bryce-----	0-13	40-50	1.30-1.50	0.2-0.6	0.12-0.16	6.0-8.9	4.0-7.0	.17	.17	5	4	86
	13-45	42-52	1.35-1.60	0.06-0.2	0.09-0.13	6.0-8.9	0.5-3.0	.32	.32			
	45-58	40-60	1.50-1.70	0.02-0.06	0.07-0.11	6.0-8.9	0.1-0.5	.32	.32			
	58-66	38-55	1.60-1.75	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
238A:												
Rantoul-----	0-17	40-50	1.35-1.55	0.2-0.6	0.12-0.23	6.0-8.9	4.0-7.0	.20	.20	5	4	86
	17-40	42-60	1.45-1.65	0.02-0.06	0.09-0.13	6.0-8.9	0.5-3.0	.32	.32			
	40-60	35-55	1.50-1.70	0.02-0.06	0.08-0.18	6.0-8.9	0.0-1.0	.37	.37			
240C2:												
Plattville-----	0-9	20-27	1.25-1.45	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.24	.24	4	6	48
	9-12	20-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-2.0	.32	.32			
	12-26	24-35	1.40-1.60	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	26-42	22-32	1.45-1.65	0.6-2	0.12-0.16	3.0-5.9	0.0-0.5	.32	.32			
	42-60	---	---	0.06-0.6	---	---	---	---	---			
241C3:												
Chatsworth-----	0-5	40-60	1.35-1.60	0.02-0.06	0.09-0.16	3.0-5.9	0.5-1.0	.32	.32	2	4	86
	5-16	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	16-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			
241D3:												
Chatsworth-----	0-2	40-60	1.35-1.60	0.02-0.06	0.09-0.16	3.0-5.9	0.5-1.0	.32	.32	2	4	86
	2-22	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	22-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			
241E3:												
Chatsworth-----	0-7	40-60	1.35-1.60	0.02-0.06	0.09-0.16	3.0-5.9	0.5-1.0	.32	.32	2	4	86
	7-21	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	21-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			
241F:												
Chatsworth-----	0-4	27-40	1.40-1.65	0.02-0.06	0.14-0.19	3.0-5.9	1.0-2.0	.28	.28	3	7	38
	4-24	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	24-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.32	.32			
290A:												
Warsaw-----	0-11	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.5-4.0	.24	.24	4	5	56
	11-28	20-32	1.35-1.60	0.6-2	0.16-0.19	3.0-5.9	0.5-2.0	.32	.32			
	28-32	18-30	1.40-1.65	0.6-2	0.10-0.16	3.0-5.9	0.2-1.5	.28	.32			
	32-80	2-8	1.50-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
290B:												
Warsaw-----	0-10	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.5-4.0	.24	.24	4	5	56
	10-24	20-32	1.35-1.60	0.6-2	0.16-0.19	3.0-5.9	0.5-2.0	.32	.32			
	24-34	18-30	1.40-1.65	0.6-2	0.10-0.16	3.0-5.9	0.2-1.5	.28	.32			
	34-60	2-8	1.50-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
290C2:												
Warsaw-----	0-8	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.24	.24	4	5	56
	8-16	20-32	1.35-1.60	0.6-2	0.16-0.19	3.0-5.9	0.5-2.0	.32	.32			
	16-27	18-30	1.40-1.65	0.6-2	0.10-0.16	3.0-5.9	0.2-1.5	.28	.32			
	27-60	2-8	1.50-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
293A:												
Andres-----	0-11	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
	11-26	24-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.32			
	26-50	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	22-35	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
293B:												
Andres-----	0-10	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
	10-36	24-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.32			
	36-47	22-35	1.55-1.75	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	47-60	22-35	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
294A: Symerton-----	0-12	20-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	2.5-4.0	.24	.24	5	6	48
	12-18	27-35	1.40-1.60	0.6-2	0.17-0.22	3.0-5.9	0.5-2.0	.32	.32			
	18-41	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.32	.32			
	41-50	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	50-60	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
294B: Symerton-----	0-15	20-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	2.5-4.0	.24	.24	5	6	48
	15-19	27-35	1.40-1.60	0.6-2	0.17-0.22	3.0-5.9	1.0-3.0	.24	.24			
	19-35	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.28	.32			
	35-39	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	39-60	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
294C2: Symerton-----	0-8	20-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	2.0-3.0	.24	.24	5	6	48
	8-31	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.32	.32			
	31-40	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	40-60	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
295A: Mokena-----	0-5	20-27	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	3.5-5.0	.24	.24	4	6	48
	5-15	20-27	1.40-1.55	0.6-2	0.17-0.21	0.0-2.9	3.0-4.0	.24	.24			
	15-38	24-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.32			
	38-42	40-60	1.55-1.75	0.06-0.2	0.05-0.12	6.0-8.9	0.1-0.5	.32	.32			
	42-80	40-60	1.65-1.85	0.02-0.06	0.03-0.07	3.0-5.0	0.0-0.5	.37	.37			
295B: Mokena-----	0-15	20-27	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	3.5-5.0	.24	.24	4	6	48
	15-31	24-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.32			
	31-44	40-60	1.55-1.75	0.06-0.2	0.05-0.12	6.0-8.9	0.1-0.5	.32	.32			
	44-80	40-60	1.65-1.85	0.02-0.06	0.03-0.07	3.0-5.0	0.0-0.5	.37	.37			
298A: Beecher-----	0-9	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	9-21	35-50	1.40-1.60	0.06-0.6	0.11-0.15	3.0-5.9	0.2-1.0	.37	.37			
	21-37	27-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	37-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
298B: Beecher-----	0-7	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	7-24	35-50	1.40-1.60	0.06-0.6	0.11-0.15	3.0-5.9	0.2-1.0	.37	.37			
	24-36	27-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	36-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
298B2: Beecher-----	0-8	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.5-3.5	.28	.28	4	6	48
	8-22	35-50	1.40-1.60	0.06-0.6	0.11-0.15	3.0-5.9	0.2-1.0	.37	.37			
	22-30	27-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	30-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
311C: Ritchey-----	0-6	18-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	2	6	48
	6-10	18-25	1.25-1.45	0.6-2	0.20-0.23	0.0-2.9	0.5-1.5	.37	.37			
	10-19	25-35	1.35-1.60	0.6-2	0.14-0.20	3.0-5.9	0.2-1.0	.32	.32			
	19-60	---	---	0.06-0.6	---	---	---	---	---			
311D: Ritchey-----	0-4	18-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	2	6	48
	4-8	18-25	1.25-1.45	0.6-2	0.20-0.23	0.0-2.9	0.5-1.5	.37	.37			
	8-16	25-35	1.35-1.60	0.6-2	0.14-0.20	3.0-5.9	0.2-1.0	.32	.32			
	16-60	---	---	0.06-0.6	---	---	---	---	---			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
314A: Joliet-----	0-15	18-27	1.15-1.35	0.6-2	0.17-0.23	0.0-2.9	4.0-5.0	.24	.24	2	6	48
	15-19	23-33	1.35-1.55	0.6-2	0.14-0.20	3.0-5.9	0.5-2.0	.32	.32			
	19-60	---	---	0.06-0.6	---	---	---	---	---			
315A: Channahon-----	0-8	18-27	1.20-1.40	0.6-2	0.17-0.23	0.0-2.9	2.0-4.0	.24	.24	2	6	48
	8-16	25-35	1.35-1.60	0.6-2	0.14-0.22	3.0-5.9	0.0-1.5	.32	.32			
	16-60	---	---	0.06-0.6	---	---	---	---	---			
315B: Channahon-----	0-11	18-27	1.20-1.40	0.6-2	0.17-0.23	0.0-2.9	2.0-4.0	.24	.24	2	6	48
	11-18	25-35	1.35-1.60	0.6-2	0.14-0.22	3.0-5.9	0.0-1.5	.32	.32			
	18-60	---	---	0.06-0.6	---	---	---	---	---			
315C2: Channahon-----	0-6	18-27	1.20-1.40	0.6-2	0.17-0.23	0.0-2.9	2.0-3.0	.24	.24	2	6	48
	6-13	25-35	1.35-1.60	0.6-2	0.14-0.22	3.0-5.9	0.0-1.5	.32	.32			
	13-60	---	---	0.06-0.6	---	---	---	---	---			
316A: Romeo-----	0-8	15-27	1.20-1.35	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	1	6	48
	8-60	---	---	0.06-0.6	---	---	---	---	---			
317A: Millsdale-----	0-18	27-35	1.30-1.50	0.6-2	0.17-0.22	3.0-5.9	4.0-7.0	.20	.20	3	7	38
	18-36	35-45	1.40-1.65	0.2-0.6	0.12-0.18	6.0-8.9	0.2-2.5	.37	.37			
	36-60	---	---	0.06-0.6	---	---	---	---	---			
318A: Lorenzo-----	0-12	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-4.0	.24	.24	3	6	48
	12-21	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	21-60	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
318B: Lorenzo-----	0-9	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-4.0	.24	.24	3	6	48
	9-18	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	18-60	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
318C2: Lorenzo-----	0-7	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-3.0	.24	.24	3	6	48
	7-16	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	16-60	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
318D2: Lorenzo-----	0-5	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-3.0	.24	.24	3	6	48
	5-15	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	15-60	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
320A: Frankfort-----	0-9	20-27	1.25-1.45	0.6-2	0.21-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	9-14	27-32	1.30-1.50	0.6-2	0.19-0.22	0.0-2.9	0.5-2.0	.37	.37			
	14-24	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	24-34	40-55	1.60-1.75	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	34-60	35-50	1.65-1.85	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
320B: Frankfort-----	0-8	20-27	1.25-1.45	0.6-2	0.21-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	8-12	27-32	1.30-1.50	0.6-2	0.19-0.22	0.0-2.9	0.5-2.0	.37	.37			
	12-32	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	32-37	40-55	1.60-1.75	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	37-60	35-50	1.65-1.85	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
320B2: Frankfort-----	0-6	27-35	1.30-1.50	0.6-2	0.19-0.22	3.0-5.9	2.0-3.0	.24	.24	4	7	38
	6-21	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	21-35	40-55	1.60-1.75	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	35-60	35-50	1.65-1.85	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
320C2: Frankfort-----	0-7	27-35	1.30-1.50	0.6-2	0.19-0.22	3.0-5.9	2.0-3.0	.24	.24	4	7	38
	7-28	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	28-32	40-55	1.60-1.75	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	32-60	35-50	1.65-1.85	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
325A: Dresden-----	0-7	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
	7-19	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	19-30	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	1-5	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
325B: Dresden-----	0-7	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
	7-16	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	16-30	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	1-5	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
325C2: Dresden-----	0-9	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
	9-15	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	15-32	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	1-5	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
327A: Fox-----	0-6	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
	6-9	15-25	1.35-1.55	0.6-2	0.16-0.23	0.0-2.9	0.2-1.0	.37	.37			
	9-20	18-35	1.50-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	20-27	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.32			
	27-60	0-2	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
327B: Fox-----	0-4	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
	4-7	15-25	1.35-1.55	0.6-2	0.16-0.23	0.0-2.9	0.2-1.0	.37	.37			
	7-13	18-35	1.50-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	13-28	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	0-2	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
327C2: Fox-----	0-4	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
	4-12	18-35	1.50-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	12-24	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.32			
	24-60	0-2	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
329A: Will-----	0-16	27-35	1.25-1.40	0.6-2	0.18-0.23	3.0-5.9	4.0-6.0	.20	.20	4	7	38
	16-24	23-33	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.5-2.0	.32	.32			
	24-60	0-10	1.65-1.85	20-100	0.02-0.04	0.0-2.9	0.1-1.0	.02	.05			
330A: Peotone-----	0-13	33-40	1.20-1.40	0.2-0.6	0.21-0.23	6.0-8.9	5.0-7.0	.24	.24	5	4	86
	13-50	35-45	1.30-1.60	0.2-0.6	0.11-0.20	6.0-8.9	0.5-3.0	.37	.37			
	50-60	25-42	1.40-1.65	0.2-0.6	0.10-0.20	6.0-8.9	0.2-0.5	.43	.43			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
343A: Kane-----	0-11	18-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	5	56
	11-26	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.5-1.5	.32	.32			
	26-34	15-30	1.40-1.60	0.6-2	0.12-0.18	3.0-5.9	0.2-1.0	.32	.32			
	34-60	1-10	1.60-1.85	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
356A: Elpaso-----	0-21	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	4.0-7.0	.24	.24	5	7	38
	21-44	24-40	1.20-1.40	0.6-2	0.22-0.24	3.0-5.9	0.2-2.0	.37	.37			
	44-69	20-40	1.35-1.60	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	69-80	15-30	1.60-1.85	0.2-0.6	0.05-0.15	3.0-5.9	0.0-0.5	.43	.43			
369A: Waupecan-----	0-14	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	4	6	48
	14-35	25-35	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	35-49	10-25	1.55-1.75	0.6-6	0.08-0.18	0.0-2.9	0.2-0.5	.28	.32			
	49-67	0-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
369B: Waupecan-----	0-11	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	4	6	48
	11-39	25-35	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	39-45	10-25	1.55-1.75	0.6-6	0.08-0.18	0.0-2.9	0.2-0.5	.28	.32			
	45-60	0-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
380A: Fieldon-----	0-15	15-22	1.25-1.45	0.6-2	0.18-0.20	0.0-2.9	3.0-6.0	.24	.24	5	4L	86
	15-36	10-18	1.45-1.65	0.6-2	0.15-0.17	0.0-2.9	0.2-2.0	.24	.24			
	36-60	5-15	1.60-1.80	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.15	.15			
387B: Ockley-----	0-9	12-25	1.30-1.45	0.6-2	0.20-0.23	0.0-2.9	1.0-3.0	.24	.24	4	5	56
	9-41	22-34	1.40-1.60	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	41-58	10-32	1.40-1.65	0.6-2	0.08-0.19	3.0-5.9	0.1-0.5	.28	.32			
	58-70	2-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
403D: Elizabeth-----	0-4	18-27	1.15-1.25	0.6-2	0.18-0.24	0.0-2.9	2.5-5.0	.24	.24	2	4L	86
	4-7	18-35	1.25-1.45	0.6-2	0.16-0.23	3.0-5.9	1.0-3.0	.24	.24			
	7-12	18-35	1.30-1.50	0.6-2	0.02-0.10	0.0-2.9	1.0-2.0	.17	.24			
	12-60	---	---	0.06-0.6	---	---	---	---	---			
403E: Elizabeth-----	0-5	18-27	1.15-1.25	0.6-2	0.18-0.24	0.0-2.9	2.5-5.0	.24	.24	2	4L	86
	5-13	18-35	1.25-1.45	0.6-2	0.16-0.23	3.0-5.9	1.0-3.0	.24	.24			
	13-16	18-35	1.30-1.50	0.6-2	0.02-0.10	0.0-2.9	1.0-2.0	.17	.24			
	16-60	---	---	0.06-0.6	---	---	---	---	---			
403F: Elizabeth-----	0-6	18-27	1.15-1.25	0.6-2	0.18-0.24	0.0-2.9	2.5-5.0	.24	.24	2	4L	86
	6-11	18-35	1.25-1.45	0.6-2	0.16-0.23	3.0-5.9	1.0-3.0	.20	.24			
	11-14	18-35	1.30-1.50	0.6-2	0.02-0.10	0.0-2.9	1.0-2.0	.17	.24			
	14-60	---	---	0.06-0.6	---	---	---	---	---			
440A: Jasper-----	0-11	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
	11-30	20-32	1.40-1.60	0.6-2	0.16-0.18	3.0-5.9	0.5-1.5	.32	.32			
	30-47	12-30	1.40-1.60	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.28	.28			
	47-60	5-20	1.50-1.70	0.6-6	0.10-0.21	0.0-2.9	0.0-0.5	.24	.24			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
440B: Jasper-----	0-12	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
	12-26	20-32	1.40-1.60	0.6-2	0.16-0.18	3.0-5.9	0.5-1.5	.32	.32			
	26-50	12-30	1.40-1.60	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.28	.28			
	50-60	5-20	1.50-1.70	0.6-6	0.10-0.21	0.0-2.9	0.0-0.5	.24	.24			
440C2: Jasper-----	0-8	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
	8-23	20-32	1.40-1.60	0.6-2	0.16-0.18	3.0-5.9	0.5-1.5	.32	.32			
	23-42	12-30	1.40-1.60	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.28	.28			
	42-60	5-20	1.50-1.70	0.6-6	0.10-0.21	0.0-2.9	0.0-0.5	.24	.24			
494B: Kankakee-----	0-14	10-20	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	2.0-4.0	.24	.24	4	3	86
	14-22	18-35	1.40-1.60	0.6-2	0.12-0.19	3.0-5.9	0.2-1.0	.32	.32			
	22-27	10-25	1.45-1.65	0.6-6	0.07-0.15	0.0-2.9	0.1-0.5	.24	.28			
	27-60	5-20	1.50-1.70	2-6	0.05-0.13	0.0-2.9	0.0-0.5	.17	.24			
513A: Granby-----	0-8	2-18	1.30-1.60	2-6	0.12-0.17	0.0-2.9	3.0-5.0	.17	.17	5	3	86
	8-17	0-14	1.35-1.55	6-20	0.07-0.12	0.0-2.9	0.5-2.0	.05	.05			
	17-30	0-14	1.45-1.65	6-20	0.06-0.11	0.0-2.9	0.2-1.5	.10	.10			
	30-80	0-10	1.50-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
523A: Dunham-----	0-11	27-35	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-6.0	.24	.24	4	7	38
	11-31	23-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-2.0	.37	.37			
	31-42	10-30	1.35-1.60	0.6-6	0.15-0.20	3.0-5.9	0.1-0.5	.32	.32			
	42-60	1-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
526A: Grundelein-----	0-13	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
	13-29	22-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	29-43	10-30	1.35-1.60	0.6-6	0.15-0.20	3.0-5.9	0.1-0.5	.32	.32			
	43-60	1-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
530B: Ozaukee-----	0-4	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	4-10	15-27	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	10-21	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	21-39	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	39-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530C2: Ozaukee-----	0-6	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	4	6	48
	6-21	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	21-28	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	28-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530C3: Ozaukee-----	0-9	27-40	1.45-1.60	0.2-0.6	0.10-0.21	3.0-5.9	0.5-1.0	.37	.37	3	7	38
	9-21	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	21-27	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	27-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530D2: Ozaukee-----	0-6	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	4	6	48
	6-20	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	20-28	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	28-60	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 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
530D3: Ozaukee-----	0-9	27-40	1.45-1.60	0.2-0.6	0.10-0.21	3.0-5.9	0.5-1.0	.37	.37	3	7	38
	9-21	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	21-25	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	25-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530E2: Ozaukee-----	0-6	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	4	6	48
	6-27	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	27-31	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	31-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530F: Ozaukee-----	0-5	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	5-29	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	29-36	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	36-60	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
531B: Markham-----	0-8	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	8-21	35-50	1.40-1.60	0.06-0.6	0.11-0.20	3.0-5.9	0.2-1.0	.37	.37			
	21-32	30-45	1.55-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	32-60	27-38	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
531C2: Markham-----	0-8	20-27	1.10-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.28	.28	4	6	48
	8-20	35-50	1.40-1.60	0.06-0.6	0.11-0.20	3.0-5.9	0.2-1.0	.37	.37			
	20-29	30-45	1.55-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	29-60	27-38	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
531D2: Markham-----	0-7	20-27	1.10-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.28	.28	4	6	48
	7-20	35-50	1.40-1.60	0.06-0.6	0.11-0.20	3.0-5.9	0.2-1.0	.37	.37			
	20-30	30-45	1.55-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	30-60	27-38	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
541A: Graymont-----	0-12	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	12-21	25-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.2-2.0	.37	.37			
	21-33	22-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	33-60	24-34	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
541B: Graymont-----	0-12	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	12-33	25-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.2-2.0	.37	.37			
	33-38	22-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	38-60	24-34	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
541C2: Graymont-----	0-9	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	9-30	25-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.2-2.0	.37	.37			
	30-38	22-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	38-60	24-34	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
560D2: St. Clair-----	0-5	27-38	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	1.0-2.5	.28	.28	4	7	38
	5-8	27-35	1.30-1.50	0.6-2	0.16-0.21	3.0-5.9	0.2-1.0	.37	.37			
	8-22	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	22-37	40-55	1.60-1.80	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	37-65	35-55	1.70-1.90	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
560E: St. Clair-----	0-5	27-38	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	1.0-3.0	.28	.28	4	7	38
	5-12	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	12-26	40-55	1.60-1.80	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	26-60	35-55	1.70-1.90	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
570B: Martinsville-----	0-7	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
	7-13	8-20	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.37	.37			
	13-48	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	48-63	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	63-80	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-----	0-6	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
	6-9	8-20	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.37	.37			
	9-35	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	35-54	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	54-80	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
570D2: Martinsville-----	0-5	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
	5-13	8-20	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.37	.37			
	13-35	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	35-55	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	55-80	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
570E2: Martinsville-----	0-4	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
	4-13	8-20	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.37	.37			
	13-47	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	47-60	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	60-80	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
570F: Martinsville-----	0-4	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
	4-11	8-20	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.37	.37			
	11-43	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	43-58	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	58-75	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
594A: Reddick-----	0-13	27-35	1.25-1.45	0.6-2	0.17-0.23	3.0-5.9	4.0-6.0	.17	.17	5	6	48
	13-32	22-35	1.45-1.65	0.6-2	0.15-0.20	3.0-5.9	0.5-2.0	.32	.32			
	32-47	30-45	1.50-1.70	0.2-0.6	0.12-0.18	3.0-5.9	0.2-1.0	.37	.37			
	47-60	25-43	1.60-1.80	0.06-0.2	0.07-0.15	3.0-5.9	0.0-0.5	.43	.43			
614A: Chenoa-----	0-12	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-5.0	.28	.28	5	7	38
	12-32	35-45	1.30-1.50	0.6-2	0.18-0.21	6.0-8.9	0.5-1.5	.37	.37			
	32-36	25-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	36-60	24-35	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
614B: Chenoa-----	0-15	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-5.0	.28	.28	5	7	38
	15-28	35-45	1.30-1.50	0.6-2	0.18-0.21	6.0-8.9	0.5-1.5	.37	.37			
	28-47	25-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	47-60	24-35	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
688B: Braidwood-----	0-9	18-27	1.30-1.60	0.6-2	0.17-0.20	0.0-2.9	0.5-4.0	.32	.32	5	4L	86
	9-22	18-27	1.40-1.70	0.6-2	0.15-0.18	0.0-2.9	0.2-1.0	.43	.43			
	22-42	5-27	1.70-2.00	0.6-2	0.09-0.16	0.0-2.9	0.2-1.0	.43	.43			
	42-64	3-27	1.80-2.10	0.2-0.6	0.06-0.12	0.0-2.9	0.2-1.0	.43	.43			
688D: Braidwood-----	0-8	18-27	1.30-1.60	0.6-2	0.17-0.20	0.0-2.9	0.5-4.0	.32	.32	5	4L	86
	8-16	18-27	1.40-1.70	0.6-2	0.15-0.18	0.0-2.9	0.2-1.0	.43	.43			
	16-42	5-27	1.70-2.00	0.6-2	0.09-0.16	0.0-2.9	0.2-1.0	.43	.43			
	42-65	3-27	1.80-2.10	0.2-0.6	0.06-0.12	0.0-2.9	0.2-1.0	.43	.43			
688G: Braidwood-----	0-6	18-27	1.30-1.60	0.6-2	0.17-0.20	0.0-2.9	0.5-4.0	.32	.32	5	4L	86
	6-15	18-27	1.40-1.70	0.6-2	0.15-0.18	0.0-2.9	0.2-1.0	.43	.43			
	15-37	5-27	1.70-2.00	0.6-2	0.09-0.16	0.0-2.9	0.2-1.0	.43	.43			
	37-65	3-27	1.80-2.10	0.2-0.6	0.06-0.12	0.0-2.9	0.2-1.0	.43	.43			
719A: Symerton-----	0-13	8-18	1.30-1.65	0.6-6	0.14-0.18	0.0-2.9	1.5-3.5	.17	.17	5	3	86
	13-32	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.32	.32			
	32-44	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	44-60	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
719B: Symerton-----	0-17	8-18	1.30-1.65	0.6-6	0.14-0.18	0.0-2.9	1.5-3.5	.17	.17	5	3	86
	17-31	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.32	.32			
	31-39	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	39-60	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
719C2: Symerton-----	0-9	8-18	1.30-1.65	0.6-6	0.14-0.18	0.0-2.9	1.0-3.0	.17	.17	5	3	86
	9-22	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.32	.32			
	22-31	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	31-60	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
740A: Darroch-----	0-15	12-26	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	2.5-4.0	.24	.24	5	5	56
	15-21	18-35	1.45-1.60	0.6-2	0.18-0.22	3.0-5.9	0.5-1.5	.32	.32			
	21-29	18-35	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	29-60	5-20	1.50-1.70	0.6-6	0.11-0.21	0.0-2.9	0.0-0.5	.28	.28			
741B: Oakville-----	0-7	0-10	1.30-1.55	6-20	0.07-0.09	0.0-2.9	0.5-2.0	.02	.02	5	1	250
	7-40	0-10	1.35-1.65	6-20	0.06-0.11	0.0-2.9	0.1-0.5	.15	.15			
	40-60	0-10	1.40-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
741D: Oakville-----	0-6	0-10	1.30-1.55	6-20	0.07-0.09	0.0-2.9	0.5-2.0	.02	.02	5	1	250
	6-30	0-10	1.35-1.65	6-20	0.06-0.11	0.0-2.9	0.1-0.5	.15	.15			
	30-60	0-10	1.40-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
741E: Oakville-----	0-5	0-10	1.30-1.55	6-20	0.07-0.09	0.0-2.9	0.5-2.0	.02	.02	5	1	250
	5-29	0-10	1.35-1.65	6-20	0.06-0.11	0.0-2.9	0.1-0.5	.15	.15			
	29-60	0-10	1.40-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
741F: Oakville-----	0-5	0-10	1.30-1.55	6-20	0.07-0.09	0.0-2.9	0.5-2.0	.02	.02	5	1	250
	5-32	0-10	1.35-1.65	6-20	0.06-0.11	0.0-2.9	0.1-0.5	.15	.15			
	32-60	0-10	1.40-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
792A:												
Bowes-----	0-8	18-27	1.30-1.50	0.6-2	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	4	6	48
	8-11	15-25	1.35-1.55	0.6-2	0.21-0.24	0.0-2.9	0.5-1.5	.43	.43			
	11-31	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	31-61	10-32	1.55-1.75	0.6-6	0.10-0.16	3.0-5.9	0.1-0.5	.28	.32			
	61-80	2-10	1.60-1.80	20-100	0.02-0.08	0.0-2.9	0.0-0.5	.02	.05			
792B:												
Bowes-----	0-8	18-27	1.30-1.50	0.6-2	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	4	6	48
	8-12	15-25	1.35-1.55	0.6-2	0.21-0.24	0.0-2.9	0.5-1.5	.43	.43			
	12-37	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	37-43	10-32	1.55-1.75	0.6-6	0.10-0.16	3.0-5.9	0.1-0.5	.28	.32			
	43-70	2-10	1.60-1.80	20-100	0.02-0.08	0.0-2.9	0.0-0.5	.02	.05			
802B, 802D:												
Orthents, loamy----	0-6	22-27	1.70-1.75	0.2-0.6	0.18-0.22	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	6-60	22-30	1.70-1.80	0.2-0.6	0.12-0.20	3.0-5.9	0.2-1.0	.43	.43			
805B:												
Orthents, clayey----	0-6	40-55	1.50-1.65	0.02-0.06	0.08-0.14	6.0-8.9	0.5-2.0	.43	.43	5	4	86
	6-60	35-60	1.60-1.90	0.02-0.06	0.03-0.10	6.0-8.9	0.2-1.0	.43	.43			
830:												
Landfills.												
864:												
Pits, quarry.												
865:												
Pits, gravel.												
903A:												
Muskego-----	0-5	---	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---	1	2	134
	5-36	---	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---			
	36-80	18-35	0.30-1.10	0.06-0.2	0.18-0.24	3.0-5.9	6.0-20	.32	.32			
Houghton-----	0-19	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	3	2	134
	19-60	---	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
969E2:												
Casco-----	0-5	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	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	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	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	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	10-60	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
969F:												
Casco-----	0-4	12-25	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	4-15	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.2-1.0	.28	.32			
	15-60	0-5	1.45-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
Rodman-----	0-11	8-25	1.20-1.50	2-6	0.10-0.12	0.0-2.9	2.0-4.0	.20	.24	3	8	0
	11-14	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	14-60	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
1067A:												
Harpster-----	0-18	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-6.0	.24	.24	5	4L	86
	18-41	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	41-56	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			
	56-60	15-27	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	0.0-0.5	.32	.32			

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	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	g/cc	In/hr	In/in	Pct	Pct					
1082A:												
Millington-----	0-21	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	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	18-35	1.50-1.70	0.6-2	0.14-0.20	3.0-5.9	0.1-2.0	.28	.28			
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	---	---			
1201A:												
Gilford-----	0-12	10-18	1.45-1.65	2-6	0.16-0.18	0.0-2.9	3.0-5.0	.17	.17	5	3	86
	12-36	8-18	1.55-1.75	2-6	0.12-0.14	0.0-2.9	0.2-1.5	.24	.24			
	36-60	1-8	1.65-1.85	6-20	0.05-0.08	0.0-2.9	0.0-0.5	.05	.05			
1903A:												
Muskego-----	0-5	---	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---	1	2	134
	5-36	---	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---			
	36-80	18-35	0.30-1.10	0.06-0.2	0.18-0.24	3.0-5.9	6.0-20	.32	.32			
Houghton-----	0-19	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	3	2	134
	19-60	---	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
3082A:												
Millington-----	0-26	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	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	18-35	1.50-1.70	0.6-2	0.14-0.20	3.0-5.9	0.1-2.0	.28	.28			
3107A:												
Sawmill-----	0-29	27-35	1.25-1.40	0.6-2	0.19-0.22	3.0-5.9	4.0-7.0	.28	.28	5	7	38
	29-48	27-35	1.30-1.45	0.6-2	0.17-0.20	3.0-5.9	1.0-3.5	.32	.32			
	48-60	25-35	1.35-1.50	0.6-2	0.17-0.20	3.0-5.9	0.2-2.0	.32	.32			
3314A:												
Joliet-----	0-13	18-27	1.15-1.35	0.6-2	0.17-0.23	0.0-2.9	4.0-5.0	.24	.24	2	6	48
	13-19	23-33	1.35-1.55	0.6-2	0.14-0.20	3.0-5.9	0.5-2.0	.32	.32			
	19-60	---	---	0.06-0.6	---	---	---	---	---			
3316A:												
Romeo-----	0-10	15-27	1.20-1.35	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	1	6	48
	10-60	---	---	0.06-0.6	---	---	---	---	---			
3451A:												
Lawson-----	0-13	12-27	1.20-1.50	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.32	.32	5	5	56
	13-53	15-30	1.20-1.50	0.6-2	0.18-0.22	0.0-2.9	2.0-4.0	.32	.32			
	53-80	18-30	1.45-1.65	0.6-2	0.18-0.20	3.0-5.9	0.2-2.0	.49	.49			
8082A:												
Millington-----	0-26	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	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	18-35	1.50-1.70	0.6-2	0.14-0.20	3.0-5.9	0.1-2.0	.28	.28			
8321A:												
Du Page-----	0-30	18-27	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.32	.32	5	4L	86
	30-35	18-27	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	0.5-3.0	.32	.32			
	35-60	6-24	1.50-1.70	0.6-2	0.08-0.20	0.0-2.9	0.2-1.0	.32	.32			

Table 24.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
23A:				
Blount-----	0-7	5.1-7.3	13-20	0
	7-13	5.1-7.3	7.0-16	0
	13-26	4.5-6.5	17-26	0
	26-32	6.1-7.8	13-24	0-25
	32-60	7.4-8.4	13-21	15-35
23B:				
Blount-----	0-6	5.1-7.3	13-20	0
	6-10	5.1-7.3	7.0-16	0
	10-23	4.5-6.5	17-26	0
	23-34	6.1-7.8	13-24	0-25
	34-60	7.4-8.4	13-21	15-35
49A:				
Watseka-----	0-10	5.6-7.3	3.0-13	0
	10-32	5.1-7.3	1.0-7.0	0
	32-60	5.6-7.3	1.0-7.0	0
67A:				
Harpster-----	0-18	7.9-8.4	27-40	15-40
	18-41	7.4-8.4	18-27	5-40
	41-56	7.9-8.4	9.0-23	5-40
	56-60	7.9-8.4	4.0-16	10-40
69A:				
Milford-----	0-18	5.6-7.3	26-36	0
	18-50	5.6-7.8	22-29	0-10
	50-60	6.6-8.4	4.0-18	0-30
88D:				
Sparta-----	0-11	5.1-7.3	2.0-10	0
	11-36	5.1-7.3	1.0-6.0	0
	36-80	5.1-7.8	0.0-2.0	0
91A:				
Swygert-----	0-12	5.6-7.3	20-31	0
	12-26	5.6-7.3	20-31	0
	26-51	7.4-8.4	10-25	2-20
	51-60	7.9-8.4	9.0-20	15-30
91B2:				
Swygert-----	0-7	5.6-7.3	20-31	0
	7-30	5.6-7.3	20-31	0
	30-48	7.4-8.4	10-25	2-20
	48-60	7.9-8.4	9.0-20	15-30
91C2:				
Swygert-----	0-7	5.6-7.3	20-31	0
	7-18	5.6-7.3	20-31	0
	18-36	7.4-8.4	10-25	2-20
	36-60	7.9-8.4	9.0-20	15-30
93C2:				
Rodman-----	0-8	6.6-7.8	8.0-19	0-15
	8-18	6.6-7.8	2.0-17	0-25
	18-60	7.4-8.4	0.0-7.0	10-45

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
93D2:				
Rodman-----	0-8	6.6-7.8	8.0-19	0-15
	8-12	6.6-7.8	2.0-17	0-25
	12-60	7.4-8.4	0.0-7.0	10-45
98B:				
Ade-----	0-22	5.1-6.5	3.0-12	0
	22-29	5.1-6.0	2.0-10	0
	29-60	5.6-7.3	2.0-11	0
	60-80	6.1-7.8	1.0-6.0	0-10
102A:				
La Hogue-----	0-16	5.6-7.3	15-24	0
	16-32	5.1-7.3	13-25	0
	32-48	5.6-7.3	6.0-15	0
	48-60	6.1-7.8	3.0-13	0-10
103A:				
Houghton-----	0-19	4.5-7.8	140-200	0
	19-60	4.5-7.8	100-200	0
125A:				
Selma-----	0-6	6.1-7.8	20-28	0
	6-13	6.1-7.8	22-31	0
	13-44	6.1-8.4	11-23	0-20
	44-80	6.6-8.4	7.0-20	0-20
132A:				
Starks-----	0-10	5.1-7.3	12-22	0
	10-14	5.1-7.3	10-18	0
	14-31	5.1-6.5	16-23	0
	31-43	5.6-7.8	6.0-19	0-5
	43-60	6.1-8.4	3.0-19	0-10
134A:				
Camden-----	0-8	5.1-7.3	10-22	0
	8-13	5.1-7.3	9.0-18	0
	13-38	5.1-7.3	13-23	0
	38-56	5.1-7.3	10-19	0
	56-60	5.6-8.4	3.0-13	0-20
134B:				
Camden-----	0-9	5.1-7.3	10-22	0
	9-14	5.1-7.3	9.0-18	0
	14-35	5.1-7.3	13-23	0
	35-62	5.1-7.3	10-19	0
	62-80	5.6-8.4	3.0-13	0-20
134C2:				
Camden-----	0-8	5.1-7.3	10-20	0
	8-24	5.1-7.3	13-23	0
	24-41	5.1-7.3	10-19	0
	41-60	5.6-8.4	3.0-13	0-20
146A:				
Elliott-----	0-6	5.6-7.3	16-32	0
	6-11	5.6-7.3	27-40	0
	11-16	6.1-7.3	17-38	0
	16-41	6.6-7.8	13-24	0-15
	41-60	7.4-8.4	11-22	10-35

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
146B:				
Elliott-----	0-9	5.6-7.3	16-32	0
	9-13	5.6-7.3	27-40	0
	13-17	6.1-7.3	15-36	0
	17-35	6.6-7.8	13-24	0-15
	35-60	7.4-8.4	11-22	10-35
146B2:				
Elliott-----	0-8	5.6-7.3	27-40	0
	8-14	6.1-7.3	15-36	0
	14-27	6.6-7.8	13-24	0-15
	27-60	7.4-8.4	11-22	10-35
149A:				
Brenton-----	0-12	5.6-7.3	18-26	0
	12-28	5.6-7.3	15-23	0
	28-44	5.6-7.8	12-19	0-5
	44-60	6.6-8.4	3.0-19	0-20
150B:				
Onarga-----	0-13	5.1-7.3	7.0-15	0
	13-29	4.5-7.3	7.0-13	0
	29-60	5.6-7.3	1.0-7.0	0
150C2:				
Onarga-----	0-7	5.1-7.3	7.0-13	0
	7-27	4.5-7.3	7.0-13	0
	27-64	5.6-7.3	1.0-7.0	0
151A:				
Ridgeville-----	0-16	5.6-7.3	10-17	0
	16-40	5.6-6.5	7.0-13	0
	40-60	6.1-7.3	2.0-7.0	0
152A:				
Drummer-----	0-14	5.6-7.8	24-35	0
	14-42	5.6-7.8	13-25	0
	42-50	6.1-8.4	9.0-21	0-20
	50-60	6.6-8.4	6.0-20	0-40
153A:				
Pella-----	0-12	6.1-7.8	24-33	0
	12-33	6.6-7.8	17-23	0-10
	33-42	7.4-8.4	9.0-19	5-30
	42-60	7.8-8.4	6.0-18	5-40
184A:				
Roby-----	0-6	4.5-7.3	7.0-13	0
	6-15	4.5-6.0	2.0-10	0
	15-32	4.5-6.0	7.0-12	0
	32-60	5.6-8.4	2.0-10	0-15
189A:				
Martinton-----	0-12	5.6-7.3	18-24	0
	12-39	5.6-7.8	18-24	0-10
	39-60	7.4-8.4	7.0-22	5-30
197A:				
Troxel-----	0-7	5.6-7.3	16-27	0
	7-32	5.6-7.3	12-23	0
	32-62	5.6-7.3	15-23	0
	62-80	5.6-7.8	9.0-22	0-15

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
201A:				
Gilford-----	0-22	5.6-7.3	12-21	0
	22-41	5.6-7.3	5.0-14	0
	41-60	6.6-8.4	1.0-6.0	0-30
206A:				
Thorp-----	0-11	5.1-7.3	20-28	0
	11-15	5.1-7.3	11-17	0
	15-41	5.1-7.3	14-23	0
	41-49	5.6-7.8	11-19	0-5
	49-60	6.1-8.4	3.0-19	0-20
219A:				
Millbrook-----	0-7	5.1-7.3	15-24	0
	7-24	5.1-7.3	15-23	0
	24-53	5.1-7.8	11-20	0-5
	53-80	5.6-8.4	6.0-19	0-20
223B:				
Varna-----	0-12	5.6-7.3	15-22	0
	12-30	5.6-7.3	18-28	0
	30-48	7.4-8.4	15-25	0-15
	48-60	7.9-8.4	13-21	5-30
223C2:				
Varna-----	0-9	5.6-7.3	14-20	0
	9-29	5.6-7.3	18-28	0
	29-50	7.4-8.4	15-25	0-15
	50-60	7.9-8.4	13-21	5-30
223D2:				
Varna-----	0-9	5.6-7.3	14-20	0
	9-31	5.6-7.3	18-28	0
	31-36	7.4-8.4	15-25	0-15
	36-60	7.9-8.4	13-21	5-30
228B:				
Nappanee-----	0-4	5.1-7.3	12-20	0
	4-9	5.1-7.3	9.0-16	0
	9-23	5.6-7.8	23-32	0
	23-46	7.4-8.4	20-29	10-30
	46-60	7.9-8.4	15-24	15-35
228C2:				
Nappanee-----	0-5	5.1-7.3	15-24	0
	5-8	5.1-7.3	13-20	0
	8-23	5.6-7.8	23-32	0
	23-27	7.4-8.4	20-29	10-30
	27-80	7.9-8.4	15-24	15-35
232A:				
Ashkum-----	0-12	5.6-7.3	22-38	0
	12-29	6.1-7.3	22-39	0-5
	29-54	6.6-7.8	13-24	0-15
	54-60	7.4-8.4	11-22	10-25
235A:				
Bryce-----	0-13	5.6-7.8	30-42	0
	13-45	6.1-7.8	23-33	0-5
	45-58	7.4-8.4	21-33	0-15
	58-66	7.4-8.4	12-34	10-25

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
238A:				
Rantoul-----	0-17	6.1-7.3	32-44	0
	17-40	6.1-8.4	26-42	0-15
	40-60	7.4-8.4	21-35	5-25
240C2:				
Plattville-----	0-9	5.6-7.3	14-20	0
	9-12	5.6-7.3	10-22	0
	12-26	5.6-7.8	12-20	0
	26-42	6.6-8.4	11-17	0-20
	42-60	---	---	---
241C3:				
Chatsworth-----	0-5	6.1-8.4	25-32	0-20
	5-16	6.6-8.4	21-31	0-25
	16-60	7.4-8.4	21-31	5-30
241D3:				
Chatsworth-----	0-2	6.1-8.4	25-32	0-20
	2-22	6.6-8.4	21-31	0-25
	22-60	7.4-8.4	21-31	5-30
241E3:				
Chatsworth-----	0-7	6.1-8.4	25-32	0-20
	7-21	6.6-8.4	21-31	0-25
	21-60	7.4-8.4	21-31	5-30
241F:				
Chatsworth-----	0-4	6.1-8.4	15-24	0-15
	4-24	6.6-8.4	21-31	0-25
	24-60	7.4-8.4	21-31	5-30
290A:				
Warsaw-----	0-11	5.6-7.3	14-23	0
	11-28	5.1-6.5	11-22	0
	28-32	6.1-8.4	9.0-22	0-10
	32-80	7.9-8.4	1.0-7.0	10-30
290B:				
Warsaw-----	0-10	5.6-7.3	14-23	0
	10-24	5.1-6.5	11-22	0
	24-34	6.1-8.4	9.0-22	0-10
	34-60	7.9-8.4	1.0-7.0	10-30
290C2:				
Warsaw-----	0-8	5.6-7.3	13-21	0
	8-16	5.1-6.5	11-22	0
	16-27	6.1-8.4	9.0-22	0-10
	27-60	7.9-8.4	1.0-7.0	10-30
293A:				
Andres-----	0-11	5.6-7.3	10-22	0
	11-26	6.1-7.8	11-22	0-5
	26-50	6.6-8.4	13-24	0-15
	50-60	7.4-8.4	11-22	15-30
293B:				
Andres-----	0-10	5.6-7.3	10-22	0
	10-36	6.1-7.8	11-22	0-5
	36-47	6.6-8.4	13-24	0-15
	47-60	7.4-8.4	11-22	15-30

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
294A:				
Symerton-----	0-12	5.6-7.3	10-22	0
	12-18	5.6-7.3	14-25	0
	18-41	5.6-7.8	8.0-22	0-5
	41-50	7.4-8.4	9.0-23	0-15
	50-60	7.4-8.4	9.0-23	5-30
294B:				
Symerton-----	0-15	5.6-7.3	10-22	0
	15-19	5.6-7.3	15-27	0
	19-35	5.6-7.8	8.0-22	0-5
	35-39	7.4-8.4	9.0-23	0-15
	39-60	7.4-8.4	9.0-23	5-30
294C2:				
Symerton-----	0-8	5.6-7.3	9.0-20	0
	8-31	5.6-7.8	8.0-22	0-5
	31-40	7.4-8.4	9.0-23	0-15
	40-60	7.4-8.4	9.0-23	5-30
295A:				
Mokena-----	0-5	5.6-7.3	15-24	0
	5-15	5.6-7.3	13-21	0
	15-38	6.1-7.8	13-22	0
	38-42	6.1-8.4	20-31	0-15
	42-80	7.4-8.4	20-31	5-30
295B:				
Mokena-----	0-15	5.6-7.3	15-24	0
	15-31	6.1-7.8	13-22	0
	31-44	6.1-8.4	20-31	0-15
	44-80	7.4-8.4	20-31	5-30
298A:				
Beecher-----	0-9	5.1-7.3	17-24	0
	9-21	4.5-7.3	15-33	0
	21-37	6.1-7.8	13-24	0-15
	37-60	7.4-8.4	11-22	10-35
298B:				
Beecher-----	0-7	5.1-7.3	17-24	0
	7-24	4.5-7.3	15-33	0
	24-36	6.1-7.8	13-24	0-15
	36-60	7.4-8.4	11-22	10-35
298B2:				
Beecher-----	0-8	5.1-7.3	16-23	0
	8-22	4.5-7.3	15-33	0
	22-30	6.1-7.8	13-24	0-15
	30-60	7.4-8.4	11-22	10-35
311C:				
Ritchey-----	0-6	5.6-7.8	12-22	0
	6-10	5.6-7.8	10-16	0
	10-19	6.6-8.4	15-23	0-20
	19-60	---	---	---
311D:				
Ritchey-----	0-4	5.6-7.8	12-22	0
	4-8	5.6-7.8	10-16	0
	8-16	6.6-8.4	15-23	0-20
	16-60	---	---	---

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
314A:				
Joliet-----	0-15	6.1-8.4	19-27	0-20
	15-19	6.1-8.4	14-24	0-20
	19-60	---	---	---
315A:				
Channahon-----	0-8	6.1-8.4	16-24	0-15
	8-16	6.1-8.4	15-24	0-20
	16-60	---	---	---
315B:				
Channahon-----	0-11	6.1-8.4	16-24	0-15
	11-18	6.1-8.4	15-24	0-20
	18-60	---	---	---
315C2:				
Channahon-----	0-6	6.1-8.4	16-22	0-15
	6-13	6.1-8.4	15-24	0-20
	13-60	---	---	---
316A:				
Romeo-----	0-8	6.1-8.4	15-26	0-20
	8-60	---	---	---
317A:				
Millsdale-----	0-18	6.1-7.3	21-32	0
	18-36	6.1-8.4	17-28	0-15
	36-60	---	---	---
318A:				
Lorenzo-----	0-12	5.6-7.3	13-22	0
	12-21	5.6-7.8	10-20	15-35
	21-60	7.4-8.4	0.0-4.0	15-40
318B:				
Lorenzo-----	0-9	5.6-7.3	13-22	0
	9-18	5.6-7.8	10-20	15-35
	18-60	7.4-8.4	0.0-4.0	15-40
318C2:				
Lorenzo-----	0-7	5.6-7.3	13-20	0
	7-16	5.6-7.8	10-20	15-35
	16-60	7.4-8.4	0.0-4.0	15-40
318D2:				
Lorenzo-----	0-5	5.6-7.3	13-20	0
	5-15	5.6-7.8	10-20	15-35
	15-60	7.4-8.4	0.0-4.0	15-40
320A:				
Frankfort-----	0-9	5.6-7.3	14-22	0
	9-14	5.6-7.3	15-20	0
	14-24	6.1-7.8	23-32	0
	24-34	7.4-8.4	20-29	5-15
	34-60	7.9-8.4	17-26	15-30
320B:				
Frankfort-----	0-8	5.6-7.3	14-22	0
	8-12	5.6-7.3	15-20	0
	12-32	6.1-7.8	23-32	0
	32-37	7.4-8.4	20-29	5-15
	37-60	7.9-8.4	17-26	15-30

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
320B2:				
Frankfort-----	0-6	5.6-7.3	17-24	0
	6-21	6.1-7.8	23-32	0
	21-35	7.4-8.4	20-29	5-15
	35-60	7.9-8.4	17-26	15-30
320C2:				
Frankfort-----	0-7	5.6-7.3	17-24	0
	7-28	6.1-7.8	23-32	0
	28-32	7.4-8.4	20-29	5-15
	32-60	7.9-8.4	17-26	15-30
325A:				
Dresden-----	0-7	5.6-7.3	13-22	0
	7-19	5.6-7.3	14-20	0
	19-30	5.6-7.8	10-16	0-15
	30-60	7.4-8.4	0.0-4.0	15-40
325B:				
Dresden-----	0-7	5.6-7.3	13-22	0
	7-16	5.6-7.3	14-20	0
	16-30	5.6-7.8	10-16	0-15
	30-60	7.4-8.4	0.0-4.0	15-40
325C2:				
Dresden-----	0-9	5.6-7.3	13-20	0
	9-15	5.6-7.3	14-20	0
	15-32	5.6-7.8	10-16	0-15
	32-60	7.4-8.4	0.0-4.0	15-40
327A:				
Fox-----	0-6	5.1-7.3	11-21	0
	6-9	5.1-7.3	9.0-17	0
	9-20	5.1-7.3	11-22	0
	20-27	5.6-7.8	10-22	0-30
	27-60	7.4-8.4	0.0-3.0	5-45
327B:				
Fox-----	0-4	5.1-7.3	11-21	0
	4-7	5.1-7.3	9.0-17	0
	7-13	5.1-7.3	11-22	0
	13-28	5.6-7.8	10-22	0-30
	28-60	7.4-8.4	0.0-3.0	5-45
327C2:				
Fox-----	0-4	5.1-7.3	11-19	0
	4-12	5.1-7.3	11-22	0
	12-24	5.6-7.8	10-22	0-30
	24-60	7.4-8.4	0.0-3.0	5-45
329A:				
Will-----	0-16	5.6-7.3	22-28	0
	16-24	6.1-8.4	14-24	0-20
	24-60	7.4-8.4	0.0-5.0	15-35
330A:				
Pectone-----	0-13	5.6-7.8	30-38	0
	13-50	6.1-7.8	22-33	0
	50-60	6.6-8.4	15-26	0-15

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
343A:				
Kane-----	0-11	5.6-7.3	17-26	0
	11-26	5.6-7.3	16-24	0
	26-34	6.1-7.8	12-20	0-15
	34-60	7.9-8.4	0.0-7.0	15-40
356A:				
Elpaso-----	0-21	5.6-7.3	26-35	0
	21-44	6.1-7.8	14-25	0-5
	44-69	6.6-7.8	12-25	0-15
	69-80	7.4-8.4	9.0-20	5-30
369A:				
Waupecan-----	0-14	6.1-7.3	17-26	0
	14-35	5.6-7.3	16-23	0
	35-49	5.6-7.8	6.0-16	0-10
	49-67	7.4-8.4	0.0-8.0	0-30
369B:				
Waupecan-----	0-11	6.1-7.3	17-26	0
	11-39	5.6-7.3	16-23	0
	39-45	5.6-7.8	6.0-16	0-10
	45-60	7.4-8.4	0.0-8.0	0-30
380A:				
Fieldon-----	0-15	7.4-8.4	15-25	5-25
	15-36	7.4-8.4	6.0-15	5-25
	36-60	7.4-8.4	3.0-10	5-25
387B:				
Ockley-----	0-9	5.6-7.3	8.0-19	0
	9-41	4.5-6.5	11-19	0
	41-58	5.1-7.3	5.0-17	0
	58-70	7.4-8.4	1.0-4.0	10-40
403D:				
Elizabeth-----	0-4	6.1-8.4	15-26	0-5
	4-7	6.1-8.4	12-27	0-20
	7-12	6.1-8.4	12-25	0-40
	12-60	---	---	---
403E:				
Elizabeth-----	0-5	6.1-8.4	15-26	0-5
	5-13	6.1-8.4	12-27	0-20
	13-16	6.1-8.4	12-25	0-40
	16-60	---	---	---
403F:				
Elizabeth-----	0-6	6.1-8.4	15-26	0-5
	6-11	6.1-8.4	12-27	0-20
	11-14	6.1-8.4	12-25	0-40
	14-60	---	---	---
440A:				
Jasper-----	0-11	5.6-7.3	13-25	0
	11-30	5.1-7.3	13-22	0
	30-47	5.6-7.8	7.0-19	0-5
	47-60	6.1-8.4	3.0-13	0-25

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
440B:				
Jasper-----	0-12	5.6-7.3	13-25	0
	12-26	5.1-7.3	13-22	0
	26-50	5.6-7.8	7.0-19	0-5
	50-60	6.1-8.4	3.0-13	0-25
440C2:				
Jasper-----	0-8	5.6-7.3	13-23	0
	8-23	5.1-7.3	13-22	0
	23-42	5.6-7.8	7.0-19	0-5
	42-60	6.1-8.4	3.0-13	0-25
494B:				
Kankakee-----	0-14	5.6-7.3	10-20	0
	14-22	5.6-7.8	11-23	0
	22-27	6.1-7.8	6.0-16	0-10
	27-60	7.4-8.4	3.0-13	0-20
513A:				
Granby-----	0-8	5.6-7.3	6.0-20	0
	8-17	5.6-7.3	1.0-12	0
	17-30	5.6-7.8	0.0-11	0
	30-80	6.1-8.4	0.0-7.0	0-10
523A:				
Dunham-----	0-11	5.6-7.3	25-34	0
	11-31	5.6-7.3	16-26	0
	31-42	6.1-7.8	6.0-19	0-20
	42-60	7.4-8.4	1.0-7.0	15-40
526A:				
Grundelein-----	0-13	5.6-7.3	19-30	0
	13-29	5.6-7.3	16-26	0
	29-43	6.1-7.8	6.0-19	0-20
	43-60	7.4-8.4	1.0-7.0	15-40
530B:				
Ozaukee-----	0-4	6.1-7.3	9.0-20	0
	4-10	6.1-7.3	7.0-16	0
	10-21	6.1-7.3	20-26	0
	21-39	7.4-8.4	15-22	0-20
	39-60	7.9-8.4	13-19	10-40
530C2:				
Ozaukee-----	0-6	6.1-7.3	9.0-18	0
	6-21	6.1-7.3	20-26	0
	21-28	7.4-8.4	15-22	0-20
	28-60	7.9-8.4	13-19	10-40
530C3:				
Ozaukee-----	0-9	6.1-7.3	14-22	0
	9-21	6.1-7.3	20-26	0
	21-27	7.4-8.4	15-22	0-20
	27-60	7.9-8.4	13-19	10-40
530D2:				
Ozaukee-----	0-6	6.1-7.3	9.0-18	0
	6-20	6.1-7.3	20-26	0
	20-28	7.4-8.4	15-22	0-20
	28-60	7.9-8.4	13-19	10-40

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
530D3:				
Ozaukee-----	0-9	6.1-7.3	14-22	0
	9-21	6.1-7.3	20-26	0
	21-25	7.4-8.4	15-22	0-20
	25-60	7.9-8.4	13-19	10-40
530E2:				
Ozaukee-----	0-6	6.1-7.3	9.0-18	0
	6-27	6.1-7.3	20-26	0
	27-31	7.4-8.4	15-22	0-20
	31-60	7.9-8.4	13-19	10-40
530F:				
Ozaukee-----	0-5	6.1-7.3	9.0-20	0
	5-29	6.1-7.3	20-26	0
	29-36	7.4-8.4	15-22	0-20
	36-60	7.9-8.4	13-19	10-40
531B:				
Markham-----	0-8	5.6-7.3	14-22	0
	8-21	5.1-7.3	17-27	0
	21-32	7.4-8.4	15-24	0-10
	32-60	7.9-8.4	13-20	5-30
531C2:				
Markham-----	0-8	5.6-7.3	14-20	0
	8-20	5.1-7.3	17-27	0
	20-29	7.4-8.4	15-24	0-10
	29-60	7.9-8.4	13-20	5-30
531D2:				
Markham-----	0-7	5.6-7.3	14-20	0
	7-20	5.1-7.3	17-27	0
	20-30	7.4-8.4	15-24	0-10
	30-60	7.9-8.4	13-20	5-30
541A:				
Graymont-----	0-12	6.1-7.3	19-26	0
	12-21	5.6-7.3	15-25	0
	21-33	6.6-7.8	12-23	0-10
	33-60	7.4-8.4	13-20	5-30
541B:				
Graymont-----	0-12	6.1-7.3	19-26	0
	12-33	5.6-7.3	15-25	0
	33-38	6.6-7.8	12-23	0-10
	38-60	7.4-8.4	13-20	5-30
541C2:				
Graymont-----	0-9	6.1-7.3	19-24	0
	9-30	5.6-7.3	15-25	0
	30-38	6.6-7.8	12-23	0-10
	38-60	7.4-8.4	13-20	5-30
560D2:				
St. Clair-----	0-5	5.1-7.3	15-24	0
	5-8	5.1-7.3	13-20	0
	8-22	5.6-7.8	23-32	0
	22-37	7.4-8.4	20-29	0-20
	37-65	7.9-8.4	17-29	15-35

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
560E:				
St. Clair-----	0-5	5.1-7.3	15-25	0
	5-12	5.6-7.8	23-32	0
	12-26	7.4-8.4	20-29	0-20
	26-60	7.9-8.4	17-29	15-35
570B:				
Martinsville----	0-7	5.1-7.3	7.0-16	0
	7-13	5.1-7.3	4.0-13	0
	13-48	5.1-7.3	10-19	0
	48-63	5.1-7.3	7.0-14	0
	63-80	5.6-7.8	2.0-11	0-25
570C2:				
Martinsville----	0-6	5.1-7.3	7.0-14	0
	6-9	5.1-7.3	4.0-13	0
	9-35	5.1-7.3	10-19	0
	35-54	5.1-7.3	7.0-14	0
	54-80	5.6-7.8	2.0-11	0-25
570D2:				
Martinsville----	0-5	5.1-7.3	7.0-14	0
	5-13	5.1-7.3	4.0-13	0
	13-35	5.1-7.3	10-19	0
	35-55	5.1-7.3	7.0-14	0
	55-80	5.6-7.8	2.0-11	0-25
570E2:				
Martinsville----	0-4	5.1-7.3	7.0-14	0
	4-13	5.1-7.3	4.0-13	0
	13-47	5.1-7.3	10-19	0
	47-60	5.1-7.3	7.0-14	0
	60-80	5.6-7.8	2.0-11	0-25
570F:				
Martinsville----	0-4	5.1-7.3	7.0-16	0
	4-11	5.1-7.3	4.0-13	0
	11-43	5.1-7.3	10-19	0
	43-58	5.1-7.3	7.0-14	0
	58-75	5.6-7.8	2.0-11	0-25
594A:				
Reddick-----	0-13	6.1-7.8	24-33	0
	13-32	6.1-7.8	14-25	0
	32-47	6.6-8.4	15-27	15-30
	47-60	7.4-8.4	18-29	0-15
614A:				
Chenoa-----	0-12	6.1-7.3	27-40	0
	12-32	5.6-7.3	22-35	0
	32-36	6.6-8.4	13-24	0-15
	36-60	7.4-8.4	11-22	15-30
614B:				
Chenoa-----	0-15	6.1-7.3	27-40	0
	15-28	5.6-7.3	22-35	0
	28-47	6.6-8.4	13-24	0-15
	47-60	7.4-8.4	11-22	15-30

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
688B:				
Braidwood-----	0-9	7.4-8.4	4.0-8.0	0-25
	9-22	7.4-8.4	3.0-6.0	5-35
	22-42	7.4-8.4	1.0-5.0	5-35
	42-64	7.4-8.4	0.0-5.0	5-35
688D:				
Braidwood-----	0-8	7.4-8.4	4.0-8.0	0-25
	8-16	7.4-8.4	3.0-6.0	5-35
	16-42	7.4-8.4	1.0-5.0	5-35
	42-65	7.4-8.4	0.0-5.0	5-35
688G:				
Braidwood-----	0-6	7.4-8.4	4.0-8.0	0-25
	6-15	7.4-8.4	3.0-6.0	5-35
	15-37	7.4-8.4	1.0-5.0	5-35
	37-65	7.4-8.4	0.0-5.0	5-35
719A:				
Symerton-----	0-13	5.6-7.3	8.0-16	0
	13-32	5.6-7.8	8.0-22	0-5
	32-44	7.4-8.4	9.0-23	0-15
	44-60	7.4-8.4	9.0-23	5-30
719B:				
Symerton-----	0-17	5.6-7.3	8.0-16	0
	17-31	5.6-7.8	8.0-22	0-5
	31-39	7.4-8.4	9.0-23	0-15
	39-60	7.4-8.4	9.0-23	5-30
719C2:				
Symerton-----	0-9	5.6-7.3	7.0-15	0
	9-22	5.6-7.8	8.0-22	0-5
	22-31	7.4-8.4	9.0-23	0-15
	31-60	7.4-8.4	9.0-23	5-30
740A:				
Darroch-----	0-15	5.6-7.3	12-24	0
	15-21	5.6-7.3	11-24	0
	21-29	5.6-7.3	11-23	0
	29-60	7.4-8.4	3.0-13	10-40
741B:				
Oakville-----	0-7	4.5-7.3	1.0-4.0	0
	7-40	4.5-7.3	0.0-2.0	0
	40-60	4.5-7.3	0.0-2.0	0
741D:				
Oakville-----	0-6	4.5-7.3	1.0-4.0	0
	6-30	4.5-7.3	0.0-2.0	0
	30-60	4.5-7.3	0.0-2.0	0
741E:				
Oakville-----	0-5	4.5-7.3	1.0-4.0	0
	5-29	4.5-7.3	0.0-2.0	0
	29-60	4.5-7.3	0.0-2.0	0
741F:				
Oakville-----	0-5	4.5-7.3	1.0-4.0	0
	5-32	4.5-7.3	0.0-2.0	0
	32-60	4.5-7.3	0.0-2.0	0

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
792A:				
Bowes-----	0-8	5.1-7.3	16-24	0
	8-11	5.1-7.3	9.0-20	0
	11-31	5.1-6.5	16-23	0
	31-61	5.6-7.8	6.0-18	0-10
	61-80	7.4-8.4	2.0-7.0	10-40
792B:				
Bowes-----	0-8	5.1-7.3	16-24	0
	8-12	5.1-7.3	9.0-20	0
	12-37	5.1-6.5	16-23	0
	37-43	5.6-7.8	6.0-18	0-10
	43-70	7.4-8.4	2.0-7.0	10-40
802B, 802D:				
Orthents, loamy	0-6	5.6-7.8	10-25	0-10
	6-60	5.6-8.4	10-20	0-20
805B:				
Orthents, clayey	0-6	5.6-7.8	22-38	0-10
	6-60	6.1-8.4	15-35	0-25
830:				
Landfills.				
864:				
Pits, quarry.				
865:				
Pits, gravel.				
903A:				
Muskego-----	0-5	5.6-7.3	140-180	0
	5-36	5.6-7.8	150-190	0
	36-80	6.6-8.4	10-45	0-60
Houghton-----	0-19	4.5-7.8	140-200	0
	19-60	4.5-7.8	100-200	0
969E2:				
Casco-----	0-5	5.6-7.3	8.0-19	0
	5-19	5.6-7.8	11-23	0-5
	19-60	7.4-8.4	0.0-4.0	1-25
Rodman-----	0-6	6.6-7.8	8.0-19	0-15
	6-10	6.6-7.8	2.0-17	0-25
	10-60	7.4-8.4	0.0-7.0	10-45
969F:				
Casco-----	0-4	5.6-7.3	8.0-21	0
	4-15	5.6-7.8	11-23	0-5
	15-60	7.4-8.4	0.0-4.0	1-25
Rodman-----	0-11	6.6-7.8	8.0-21	0-15
	11-14	6.6-7.8	2.0-17	0-25
	14-60	7.4-8.4	0.0-7.0	10-45
1067A:				
Harpster-----	0-18	7.9-8.4	27-40	15-40
	18-41	7.4-8.4	18-27	5-40
	41-56	7.9-8.4	9.0-23	5-40
	56-60	7.9-8.4	4.0-16	10-40

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	In	pH	meq/100 g	Pct
1082A:				
Millington-----	0-21	7.4-8.4	20-28	5-20
	21-37	7.4-8.4	14-27	5-30
	37-60	7.4-8.4	11-25	10-30
1103A:				
Houghton-----	0-12	4.5-7.8	140-200	0
	12-60	4.5-7.8	100-200	0
1201A:				
Gilford-----	0-12	5.6-7.3	12-21	0
	12-36	5.6-7.3	5.0-14	0
	36-60	6.6-8.4	1.0-6.0	0-30
1903A:				
Muskego-----	0-5	5.6-7.3	140-180	0
	5-36	5.6-7.8	150-190	0
	36-80	6.6-8.4	10-45	0-60
Houghton-----	0-19	4.5-7.8	140-200	0
	19-60	4.5-7.8	100-200	0
3082A:				
Millington-----	0-26	7.4-8.4	20-28	5-20
	26-36	7.4-8.4	14-27	5-30
	36-62	7.4-8.4	11-25	10-30
3107A:				
Sawmill-----	0-29	6.1-7.3	23-35	0
	29-48	6.6-7.8	18-30	0-5
	48-60	6.6-8.4	15-27	0-10
3314A:				
Joliet-----	0-13	6.1-8.4	19-27	0-20
	13-19	6.1-8.4	14-24	0-20
	19-60	---	---	---
3316A:				
Romeo-----	0-10	6.1-8.4	15-26	0-20
	10-60	---	---	---
3451A:				
Lawson-----	0-13	6.1-7.8	13-28	0
	13-53	6.1-7.8	13-29	0
	53-80	6.1-7.8	11-23	0
8082A:				
Millington-----	0-26	7.4-8.4	20-28	5-20
	26-36	7.4-8.4	14-27	5-30
	36-62	7.4-8.4	11-25	10-30
8321A:				
Du Page-----	0-30	6.6-8.4	17-26	0-15
	30-35	7.4-8.4	11-22	5-40
	35-60	7.4-8.4	4.0-17	5-40

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation- exchange capacity	Calcium carbonate equivalent
	<i>In</i>	<i>pH</i>	<i>meq/100 g</i>	<i>Pct</i>
8451A:				
Lawson-----	0-14	6.1-7.8	13-28	0
	14-33	6.1-7.8	13-29	0
	33-80	6.1-7.8	11-23	0
W:				
Water.				

Table 25.--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	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			<i>Ft</i>	<i>Ft</i>		<i>Ft</i>				
23A, 23B: Blount-----	C	Jan-May	0.5-2.0	2.5-5.5	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
49A: Watseka-----	A	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
67A: Harpster-----	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
69A: Milford-----	C	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
88D: Sparta-----	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
91A, 91B2, 91C2: Swygert-----	C	Jan-May	1.0-2.0	2.9-5.1	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
93C2, 93D2: Rodman-----	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
98B: Ade-----	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
102A: La Hogue-----	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
103A: Houghton-----	A	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
125A: Selma-----	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
132A: Starks-----	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
134A, 134B, 134C2: Camden-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
146A, 146B, 146B2: Elliott-----	C	Jan-May	1.0-2.0	1.7-4.3	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft		Ft				
149A: Brenton-----	B	Jan-May Jun-Dec	1.0-2.0 >6.0	>6.0 >6.0	Apparent ---	--- ---	--- ---	None None	--- ---	None None
150B: Onarga-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
150C2: Onarga-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
151A: Ridgeville-----	B	Jan-May Jun-Dec	1.0-2.0 >6.0	>6.0 >6.0	Apparent ---	--- ---	--- ---	None None	--- ---	None None
152A: Drummer-----	B	Jan-May Jun-Dec	0.0-1.0 >6.0	>6.0 >6.0	Apparent ---	0.0-0.5 ---	Brief ---	Frequent ---	--- ---	None None
153A: Pella-----	B	Jan-May Jun-Dec	0.0-1.0 >6.0	>6.0 >6.0	Apparent ---	0.0-0.5 ---	Brief ---	Frequent ---	--- ---	None None
184A: Roby-----	B	Jan-May Jun-Dec	0.5-2.0 >6.0	>6.0 >6.0	Apparent ---	--- ---	--- ---	None None	--- ---	None None
189A: Martinton-----	C	Jan-May Jun-Dec	1.0-2.0 >6.0	>6.0 >6.0	Apparent ---	--- ---	--- ---	None None	--- ---	None None
197A: Troxel-----	B	Jan Feb-Apr May-Dec	>6.0 4.0-6.0 >6.0	>6.0 >6.0 >6.0	--- Apparent ---	--- --- ---	--- --- ---	None None None	--- --- ---	None None None
201A: Gilford-----	B	Jan-May Jun-Dec	0.0-1.0 >6.0	>6.0 >6.0	Apparent ---	0.0-0.5 ---	Brief ---	Frequent ---	--- ---	None None
206A: Thorp-----	C	Jan-May Jun-Dec	0.0-1.0 >6.0	>6.0 >6.0	Apparent ---	0.0-0.5 ---	Brief ---	Frequent ---	--- ---	None None
219A: Millbrook-----	B	Jan-May Jun-Dec	0.5-2.0 >6.0	>6.0 >6.0	Apparent ---	--- ---	--- ---	None None	--- ---	None None
223B, 223C2, 223D2: Varna-----	C	Jan Feb-Apr May-Dec	>6.0 2.0-3.5 >6.0	>6.0 2.2-5.5 >6.0	--- Perched ---	--- --- ---	--- --- ---	None None None	--- --- ---	None None None
228B, 228C2: Nappanee-----	D	Jan-May Jun-Dec	0.5-2.0 >6.0	2.0-5.5 >6.0	Perched ---	--- ---	--- ---	None None	--- ---	None None
232A: Ashkum-----	C	Jan-May Jun-Dec	0.0-1.0 >6.0	>6.0 >6.0	Apparent ---	0.0-0.5 ---	Brief ---	Frequent ---	--- ---	None None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			<i>Ft</i>	<i>Ft</i>		<i>Ft</i>				
235A: Bryce-----	D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
238A: Rantoul-----	D	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
240C2: Plattville-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
241C3, 241D3, 241E3, 241F: Chatsworth-----	D	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
290A, 290B, 290C2: Warsaw-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
293A, 293B: Andres-----	C	Jan-May	1.0-2.0	3.0-5.5	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
294A, 294B, 294C2: Symerton-----	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.5-4.7	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
295A, 295B: Mokena-----	C	Jan-May	1.0-2.0	2.5-5.5	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
298A, 298B, 298B2: Beecher-----	C	Jan-May	0.5-2.0	2.0-4.3	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
311C, 311D: Ritchey-----	D	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
314A: Joliet-----	D	Jan-May	0.0-1.0	0.8-1.7	Perched	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
315A, 315B, 315C2: Channahon-----	D	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
316A: Romeo-----	D	Jan-May	0.0-0.5	0.2-0.8	Perched	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
317A: Millsdale-----	C	Jan-Jun	0.0-1.0	1.7-3.3	Perched	0.0-0.5	Brief	Frequent	---	None
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
318A, 318B, 318C2, 318D2: Lorenzo-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			<i>Ft</i>	<i>Ft</i>		<i>Ft</i>				
320A, 320B, 320B2, 320C2: Frankfort-----	D	Jan-May	0.5-2.0	2.0-4.0	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
325A, 325B, 325C2: Dresden-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
327A, 327B, 327C2: Fox-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
329A: Will-----	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
330A: Peotone-----	C	Jan-Jun	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
343A: Kane-----	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
356A: Elpaso-----	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
369A, 369B: Waupecan-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
380A: Fieldon-----	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
387B: Ockley-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
403D, 403E, 403F: Elizabeth-----	D	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
440A, 440B, 440C2: Jasper-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
494B: Kankakee-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
513A: Granby-----	A	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
523A: Dunham-----	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
526A: Grundelein-----	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft		Ft				
530B, 530C2, 530C3, 530D2, 530D3, 530E2, 530F: Ozaukee-----	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.3	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
531B, 531C2, 531D2: Markham-----	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-5.1	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
541A, 541B, 541C2: Graymont-----	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.3	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
560D2, 560E: St. Clair-----	D	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
570B, 570C2, 570D2, 570E2, 570F: Martinsville-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
594A: Reddick-----	C	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
614A, 614B: Chenoa-----	C	Jan-May	1.0-2.0	2.1-4.3	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
688B, 688D, 688G: Braidwood-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
719A, 719B, 719C2: Symerton-----	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.5-4.7	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
740A: Darroch-----	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
741B, 741D, 741E, 741F: Oakville-----	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
792A, 792B: Bowes-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
802B, 802D: Orthents, loamy-----	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	3.5-5.0	3.7-5.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
805B: Orthents, clayey-----	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			<i>Ft</i>	<i>Ft</i>		<i>Ft</i>				
830: Landfills-----	---	Jan-Dec	---	---	---	---	---	None	---	None
864: Pits, quarry-----	---	Jan-Dec	---	---	---	---	---	None	---	---
865: Pits, gravel-----	---	Jan-Dec	---	---	---	---	---	None	---	---
903A: Muskego-----	A	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
Houghton-----	A	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
969E2, 969F: Casco-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Rodman-----	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
1067A: Harpster-----	D	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Dec	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
1082A: Millington-----	D	Jan	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Brief	Frequent
		Feb-Apr	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Frequent
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Frequent
		Dec	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Brief	Frequent
1103A: Houghton-----	D	Jan-Apr	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent	---	None
		May-Jun	0.0-0.5	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jul-Oct	0.0-0.5	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Nov	0.0-0.5	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Dec	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent	---	None
1201A: Gilford-----	D	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
		May-Jun	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Dec	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft		Ft				
1903A:										
Muskego-----	D	Jan-Apr	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent	---	None
		May-Jun	0.0-0.5	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jul-Oct	0.0-0.5	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Nov	0.0-0.5	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Dec	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent	---	None
Houghton-----	D	Jan-Apr	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent	---	None
		May-Jun	0.0-0.5	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jul-Oct	0.0-0.5	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Nov	0.0-0.5	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Dec	0.0-0.5	>6.0	Apparent	0.0-1.0	Very long	Frequent	---	None
3082A:										
Millington-----	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Frequent
3107A:										
Sawmill-----	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Frequent
3314A:										
Joliet-----	D	Jan-May	0.0-1.0	0.8-1.7	Perched	0.0-0.5	Brief	Frequent	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Frequent
3316A:										
Romeo-----	D	Jan-May	0.0-0.5	0.2-0.8	Perched	0.0-0.5	Brief	Frequent	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Frequent
3451A:										
Lawson-----	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	None	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	---
		Nov-Dec	>6.0	>6.0	---	---	---	None	Brief	Frequent
8082A:										
Millington-----	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Occasional
8321A:										
Du Page-----	B	Jan	>6.0	>6.0	---	---	---	None	Brief	Occasional
		Feb-Apr	3.5-6.0	>6.0	Apparent	---	---	None	Brief	Occasional
		May-Jun	>6.0	>6.0	---	---	---	None	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	None	Brief	Occasional

Table 26.--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
		In		In	In			
23A: Blount-----	Dense material	30-48	---	0	---	High	High	High
23B: Blount-----	Dense material	30-48	---	0	---	High	High	High
49A: Watseka-----	---	---	---	0	---	Moderate	Low	High
67A: Harpster-----	---	---	---	0	---	High	High	Low
69A: Milford-----	---	---	---	0	---	High	High	Low
88D: Sparta-----	---	---	---	0	---	Low	Low	High
91A: Swygert-----	Dense material	35-55	---	0	---	Moderate	High	Moderate
91B2: Swygert-----	Dense material	35-55	---	0	---	Moderate	High	Moderate
91C2: Swygert-----	Dense material	35-55	---	0	---	Moderate	High	Moderate
93C2: Rodman-----	---	---	---	0	---	Low	Low	Low
93D2: Rodman-----	---	---	---	0	---	Low	Low	Low
98B: Ade-----	---	---	---	0	---	Low	Low	High
102A: La Hogue-----	---	---	---	0	---	High	High	Moderate
103A: Houghton-----	---	---	---	6-18	55-60	High	High	Low
125A: Selma-----	---	---	---	0	---	High	High	Low
132A: Starks-----	---	---	---	0	---	High	High	Moderate
134A: Camden-----	---	---	---	0	---	High	Moderate	Moderate
134B: Camden-----	---	---	---	0	---	High	Moderate	Moderate
134C2: Camden-----	---	---	---	0	---	High	Moderate	Moderate

Table 26.--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			
146A: Elliott-----	Dense material	20-45		0	---	Moderate	High	Moderate
146B: Elliott-----	Dense material	20-45	---	0	---	Moderate	High	Moderate
146B2: Elliott-----	Dense material	20-45	---	0	---	Moderate	High	Moderate
149A: Brenton-----	---	---	---	0	---	High	High	Moderate
150B: Onarga-----	---	---	---	0	---	Moderate	Low	High
150C2: Onarga-----	---	---	---	0	---	Moderate	Low	High
151A: Ridgeville-----	---	---	---	0	---	Moderate	Moderate	Moderate
152A: Drummer-----	---	---	---	0	---	High	High	Moderate
153A: Pella-----	---	---	---	0	---	High	High	Low
184A: Roby-----	---	---	---	0	---	High	Moderate	High
189A: Martinton-----	---	---	---	0	---	Moderate	High	Moderate
197A: Troxel-----	---	---	---	0	---	High	Moderate	Moderate
201A: Gilford-----	---	---	---	0	---	High	High	Moderate
206A: Thorp-----	---	---	---	0	---	High	High	Moderate
219A: Millbrook-----	---	---	---	0	---	High	High	Moderate
223B: Varna-----	Dense material	24-60	---	0	---	Moderate	High	Moderate
223C2: Varna-----	Dense material	24-60	---	0	---	Moderate	High	Moderate
223D2: Varna-----	Dense material	24-60	---	0	---	Moderate	High	Moderate
228B: Nappanee-----	Dense material	24-60	---	0	---	High	High	Moderate
228C2: Nappanee-----	Dense material	24-60	---	0	---	High	High	Moderate
232A: Ashkum-----	---	---	---	0	---	High	High	Low

Table 26.--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			
235A: Bryce-----	---	---	---	0	---	High	High	Moderate
238A: Rantoul-----	---	---	---	0	---	High	High	Low
240C2: Plattville-----	Bedrock (lithic)	40-60	Strongly cemented	0	---	Moderate	Moderate	Moderate
241C3: Chatsworth-----	Dense material	10-24	---	0	---	Moderate	High	Low
241D3: Chatsworth-----	Dense material	10-24	---	0	---	Moderate	High	Low
241E3: Chatsworth-----	Dense material	10-24	---	0	---	Moderate	High	Low
241F: Chatsworth-----	Dense material	10-24	---	0	---	Moderate	High	Low
290A: Warsaw-----	---	---	---	0	---	Moderate	Moderate	Moderate
290B: Warsaw-----	---	---	---	0	---	Moderate	Moderate	Moderate
290C2: Warsaw-----	---	---	---	0	---	Moderate	Moderate	Moderate
293A: Andres-----	---	---	---	0	---	Moderate	High	Low
293B: Andres-----	---	---	---	0	---	Moderate	High	Low
294A: Symerton-----	---	---	---	0	---	Moderate	High	Moderate
294B: Symerton-----	---	---	---	0	---	Moderate	High	Moderate
294C2: Symerton-----	---	---	---	0	---	Moderate	High	Moderate
295A: Mokena-----	Dense material	30-60	---	0	---	Moderate	High	Low
295B: Mokena-----	Dense material	30-60	---	0	---	Moderate	High	Low
298A: Beecher-----	Dense material	24-45	---	0	---	High	High	High
298B: Beecher-----	Dense material	24-45	---	0	---	High	High	High
298B2: Beecher-----	Dense material	24-45	---	0	---	High	High	High
311C: Ritchey-----	Bedrock (lithic)	10-20	Strongly cemented	0	---	Moderate	Moderate	Moderate

Table 26.--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			
311D: Ritchey-----	Bedrock (lithic)	10-20	Strongly cemented	0	---	Moderate	Moderate	Moderate
314A: Joliet-----	Bedrock (lithic)	10-20	Strongly cemented	0	---	High	High	Low
315A: Channahon-----	Bedrock (lithic)	10-20	Strongly cemented	0	---	Moderate	Moderate	Low
315B: Channahon-----	Bedrock (lithic)	10-20	Strongly cemented	0	---	Moderate	Moderate	Low
315C2: Channahon-----	Bedrock (lithic)	10-20	Strongly cemented	0	---	Moderate	Moderate	Low
316A: Romeo-----	Bedrock (lithic)	2-10	Strongly cemented	0	---	High	High	Low
317A: Millsdale-----	Bedrock (lithic)	20-40	Strongly cemented	0	---	High	High	Low
318A: Lorenzo-----	---	---	---	0	---	Moderate	Moderate	Moderate
318B: Lorenzo-----	---	---	---	0	---	Moderate	Moderate	Moderate
318C2: Lorenzo-----	---	---	---	0	---	Moderate	Moderate	Moderate
318D2: Lorenzo-----	---	---	---	0	---	Moderate	Moderate	Moderate
320A: Frankfort-----	Dense material	24-42	---	0	---	High	High	Moderate
320B: Frankfort-----	Dense material	24-42	---	0	---	High	High	Moderate
320B2: Frankfort-----	Dense material	24-42	---	0	---	High	High	Moderate
320C2: Frankfort-----	Dense material	24-42	---	0	---	High	High	Moderate
325A: Dresden-----	---	---	---	0	---	Moderate	Moderate	Moderate
325B: Dresden-----	---	---	---	0	---	Moderate	Moderate	Moderate
325C2: Dresden-----	---	---	---	0	---	Moderate	Moderate	Moderate
327A: Fox-----	---	---	---	0	---	Moderate	Moderate	Moderate
327B: Fox-----	---	---	---	0	---	Moderate	Moderate	Moderate
327C2: Fox-----	---	---	---	0	---	Moderate	Moderate	Moderate

Table 26.--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			
329A: Will-----	---	---	---	0	---	High	High	Moderate
330A: Peotone-----	---	---	---	0	---	High	High	Moderate
343A: Kane-----	---	---	---	0	---	Moderate	High	Moderate
356A: Elpaso-----	---	---	---	0	---	High	High	Moderate
369A: Waupecan-----	---	---	---	0	---	High	Moderate	Moderate
369B: Waupecan-----	---	---	---	0	---	High	Moderate	Moderate
380A: Fieldon-----	---	---	---	0	---	High	High	Low
387B: Ockley-----	---	---	---	0	---	Moderate	Moderate	High
403D: Elizabeth-----	Bedrock (lithic)	7-20	Strongly cemented	0	---	Moderate	Low	Low
403E: Elizabeth-----	Bedrock (lithic)	7-20	Strongly cemented	0	---	Moderate	Low	Low
403F: Elizabeth-----	Bedrock (lithic)	7-20	Strongly cemented	0	---	Moderate	Low	Low
440A: Jasper-----	---	---	---	0	---	Moderate	Moderate	Moderate
440B: Jasper-----	---	---	---	0	---	Moderate	Moderate	Moderate
440C2: Jasper-----	---	---	---	0	---	Moderate	Moderate	Moderate
494B: Kankakee-----	---	---	---	0	---	Moderate	Moderate	Moderate
513A: Granby-----	---	---	---	0	---	Moderate	High	Moderate
523A: Dunham-----	---	---	---	0	---	High	High	Moderate
526A: Grundelein-----	---	---	---	0	---	High	High	Moderate
530B: Ozaukee-----	Dense material	20-45	---	0	---	Moderate	High	Low
530C2: Ozaukee-----	Dense material	20-45	---	0	---	Moderate	High	Low
530C3: Ozaukee-----	Dense material	20-45	---	0	---	Moderate	High	Low

Table 26.--Soil Features--Continued

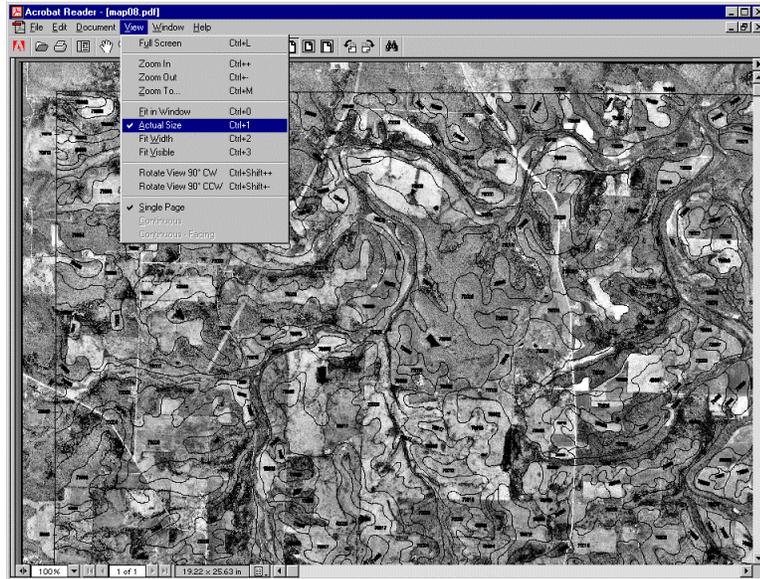
Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
530D2: Ozaukee-----	Dense material	20-45	---	0	---	Moderate	High	Low
530D3: Ozaukee-----	Dense material	20-45	---	0	---	Moderate	High	Low
530E2: Ozaukee-----	Dense material	20-45	---	0	---	Moderate	High	Low
530F: Ozaukee-----	Dense material	20-45	---	0	---	Moderate	High	Low
531B: Markham-----	Dense material	20-55	---	0	---	Moderate	High	Moderate
531C2: Markham-----	Dense material	20-55	---	0	---	Moderate	High	Moderate
531D2: Markham-----	Dense material	20-55	---	0	---	Moderate	High	Moderate
541A: Graymont-----	---	---	---	0	---	High	High	Moderate
541B: Graymont-----	---	---	---	0	---	High	High	Moderate
541C2: Graymont-----	---	---	---	0	---	High	High	Moderate
560D2: St. Clair-----	Dense material	20-48	---	0	---	Moderate	High	Moderate
560E: St. Clair-----	Dense material	20-48	---	0	---	Moderate	High	Moderate
570B: Martinsville-----	---	---	---	0	---	Moderate	Moderate	Moderate
570C2: Martinsville-----	---	---	---	0	---	Moderate	Moderate	Moderate
570D2: Martinsville-----	---	---	---	0	---	Moderate	Moderate	Moderate
570E2: Martinsville-----	---	---	---	0	---	Moderate	Moderate	Moderate
570F: Martinsville-----	---	---	---	0	---	Moderate	Moderate	Moderate
594A: Reddick-----	---	---	---	0	---	High	High	Low
614A: Chenoa-----	---	---	---	0	---	Moderate	High	Moderate
614B: Chenoa-----	---	---	---	0	---	Moderate	High	Moderate
688B: Braidwood-----	---	---	---	0	---	Moderate	Low	Low

Table 26.--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			
688D: Braidwood-----	---	---	---	0	---	Moderate	Low	Low
688G: Braidwood-----	---	---	---	0	---	Moderate	Low	Low
719A: Symerton-----	---	---	---	0	---	Moderate	High	Moderate
719B: Symerton-----	---	---	---	0	---	Moderate	High	Moderate
719C2: Symerton-----	---	---	---	0	---	Moderate	High	Moderate
740A: Darroch-----	---	---	---	0	---	High	High	Moderate
741B: Oakville-----	---	---	---	0	---	Low	Low	High
741D: Oakville-----	---	---	---	0	---	Low	Low	High
741E: Oakville-----	---	---	---	0	---	Low	Low	High
741F: Oakville-----	---	---	---	0	---	Low	Low	High
792A: Bowes-----	---	---	---	0	---	High	Moderate	Moderate
792B: Bowes-----	---	---	---	0	---	High	Moderate	Moderate
802B: Orthents, loamy----	---	---	---	0	---	Moderate	Moderate	Moderate
802D: Orthents, loamy----	---	---	---	0	---	Moderate	Moderate	Moderate
805B: Orthents, clayey----	---	---	---	0	---	Moderate	High	Moderate
830: Landfills.								
864: Pits, quarry.								
865: Pits, gravel.								
903A: Muskego-----	---	---	---	0	35-45	High	High	Moderate
Houghton-----	---	---	---	6-18	55-60	High	High	High
969E2: Casco-----	---	---	---	0	---	Moderate	Moderate	Moderate

Printing Soil Survey Maps

The soil survey maps were made at a scale of 1:12000 and were designed to be used at that scale. To print the maps at 1:12000 scale, set the view to Actual Size from the View pull down menu.



Using the pan tool, go to the area you would like to print. Select the Graphic Selection Tool by holding down the Text Selection Tool button and clicking on the Graphic Selection Tool button.



Descriptions of Special Features

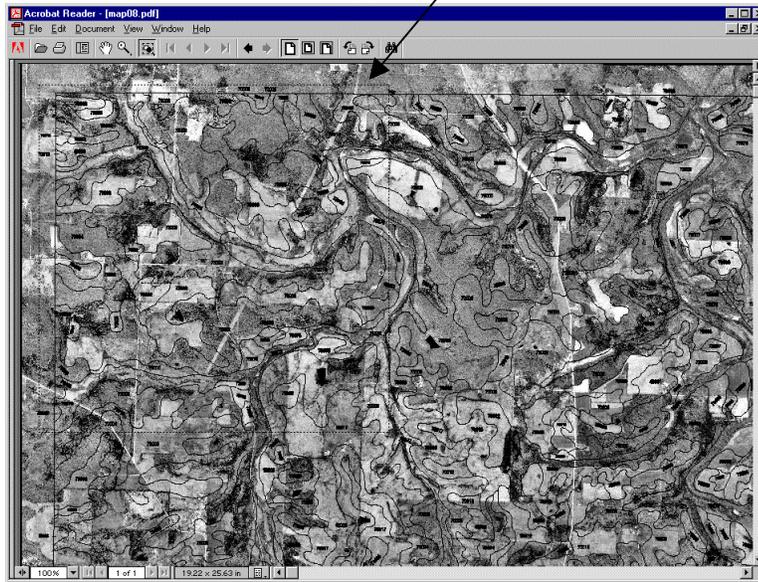
Name	Description	Label
Blowout	A small saucer-, cup-, or trough-shaped hollow or depression formed by wind erosion on a preexisting sand deposit. Typically 0.2 acre to 2.0 acres.	BLO
Borrow pit	An open excavation from which soil and underlying material have been removed, usually for construction purposes. Typically 0.2 acre to 2.0 acres.	BPI
Calcareous spot	An area in which the soil contains carbonates in the surface layer. The surface layer of the named soils in the surrounding map unit is noncalcareous. Typically 0.5 acre to 2.0 acres.	CSP
Clay spot	A spot where the surface layer is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser. Typically 0.2 acre to 2.0 acres.	CLA
Depression, closed	A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage. Typically 0.2 acre to 2.0 acres.	DEP
Disturbed soil spot	An area in which the soil has been removed and materials redeposited as a result of human activity. Typically 0.25 acre to 2.0 acres.	DSS
Dumps	Areas of nonsoil material that support little or no vegetation. Typically 0.5 acre to 2.0 acres.	DMP
Escarpment, bedrock	A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.	ESB
Escarpment, nonbedrock	A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.	ESO
Glacial till spot	An exposure of glacial till at the surface of the earth. Typically 0.25 acre to 2.0 acres.	GLA
Gravel pit	An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel. Typically 0.2 acre to 2.0 acres.	GPI
Gravelly spot	A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments. Typically 0.2 acre to 2.0 acres.	GRA

Name	Description	Label
Gray spot	A spot in which the surface layer is gray in areas where the subsurface layer of the named soils in the surrounding map unit are darker. Typically 0.25 acre to 2.0 acres.	GSP
Gully	A small channel with steep sides cut by running water through which water ordinarily runs only after a rain or after melting of snow or ice. It generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage.	GUL
Iron bog	An accumulation of iron in the form of nodules, concretions, or soft masses on the surface or near the surface of soils. Typically 0.2 acre to 2.0 acres.	BFE
Landfill	An area of accumulated waste products of human habitation, either above or below natural ground level. Typically 0.2 acre to 2.0 acres.	LDF
Levee	An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.	LVS
Marsh or swamp	A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Typically 0.2 acre to 2.0 acres.	MAR
Mine or quarry	An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines. Typically 0.2 acre to 2.0 acres.	MPI
Mine subsided area	An area that is lower than the soils in the surrounding map unit because of subsurface coal mining. Typically 0.25 acre to 3.0 acres.	MSA
Miscellaneous water	A small, constructed body of water that is used for industrial, sanitary, or mining applications and that contains water most of the year. Typically 0.2 acre to 2.0 acres.	MIS
Muck spot	An area that occurs within an area of poorly drained or very poorly drained soil and that has a histic epipedon or an organic surface layer. The symbol is used only in map units consisting of mineral soil. Typically 0.2 acre to 2.0 acres.	MUC
Oil brine spot	An area of soil that has been severely damaged by the accumulation of oil brine, with or without liquid oily wastes. The area is typically barren but may have a vegetative cover of salt-tolerant plants. Typically 0.2 acre to 2.0 acres.	OBS
Perennial water	A small, natural or constructed lake, pond, or pit that contains water most of the year. Typically 0.2 acre to 2.0 acres.	WAT

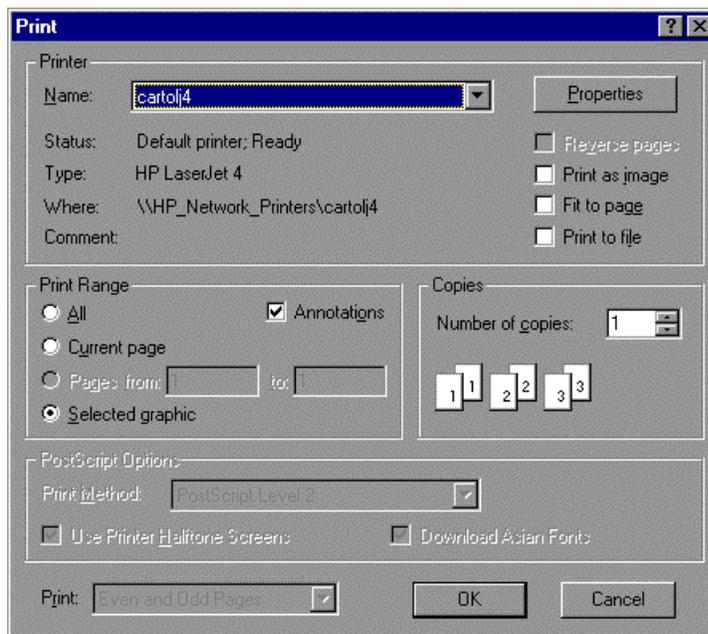
Name	Description	Label
Rock outcrop	An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where “Rock outcrop” is a named component of the map unit. Typically 0.2 acre to 2.0 acres.	ROC
Saline spot	An area where the surface layer has an electrical conductivity of 8 mmhos/cm-1 more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm-1 or less. Typically 0.2 acre to 2.0 acres.	SAL
Sandy spot	A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer. Typically 0.2 acre to 2.0 acres.	SAN
Severely eroded spot	An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which “severely eroded,” “very severely eroded,” or “gullied” is part of the map unit name. Typically 0.2 acre to 2.0 acres.	ERO
Short steep slope	A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.	SLP
Sinkhole	A closed depression formed either by solution of the surficial rock or by collapse of underlying caves. Typically 0.2 acre to 2.0 acres.	SNK
Slide or slip	A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces. Typically 0.2 acre to 2.0 acres.	SLI
Sodic spot	An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less. Typically 0.2 acre to 2.0 acres.	SOD
Spoil area	A pile of earthy materials, either smoothed or uneven, resulting from human activity. Typically 0.2 acre to 2.0 acres.	SPO
Stony spot	A spot where 0.01 to 0.1 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones. Typically 0.2 acre to 2.0 acres.	STN
Unclassified water	A small, natural or manmade lake, pond, or pit that contains water, of an unspecified nature, most of the year. Typically 0.2 acre to 2.0 acres.	UWT

Name	Description	Label
Very stony spot	A spot where 0.1 to 3.0 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surface cover of the surrounding soil is less than 0.01 percent stones. Typically 0.2 acre to 2.0 acres.	STV
Wet depression	A shallow, concave area within an area of poorly drained or very poorly drained soils in which water is ponded for intermittent periods. The concave area is saturated for appreciably longer periods of time than the surrounding soil. Typically 0.2 acre to 2.0 acres.	WDP
Wet spot	A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit. Typically 0.2 acres to 2.0 acres.	WET

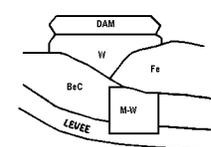
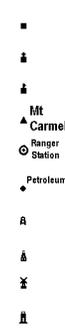
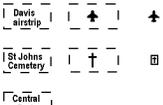
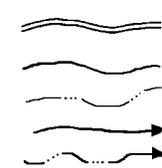
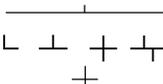
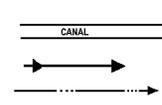
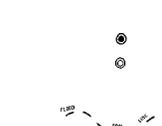
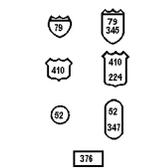
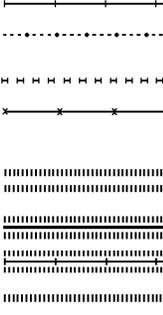
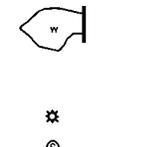
Then using the Graphic Selection Tool drag a box around the area you would like to print. Note dashed lines forming a box around area to print.



Select File Print. The Print Range will be set to Selected graphic. Click OK and the map will be sent to the printer.



CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL																																																																																												
CULTURAL FEATURES		CULTURAL FEATURES (cont.)		SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO																																																																																													
BOUNDARIES		MISCELLANEOUS CULTURAL FEATURES																																																																																															
<ul style="list-style-type: none"> National, state, or province County or parish Minor civil division Reservation, (national forest or park, state forest or park) Land grant Limit of soil survey (label) and/or denied access areas Field sheet matchline & neatline Previously published survey 		<ul style="list-style-type: none"> Farmland, house (omit in urban areas) Church School Other Religion (label) Located object (label) Tank (label) Lookout Tower Oil and / or Natural Gas Wells Windmill Lighthouse 		LANDFORM FEATURES ESCARPMENTS Bedrock Other than bedrock SHORT STEEP SLOPE GULLY DEPRESSION, closed SINKHOLE																																																																																													
OTHER BOUNDARY (label)		HYDROGRAPHIC FEATURES		EXCAVATIONS PITS Borrow pit Gravel pit Mine or quarry LANDFILL																																																																																													
<ul style="list-style-type: none"> Airport, airfield Cemetery City / county Park 		STREAMS Perennial, double line Perennial, single line Intermittent Drainage end		MISCELLANEOUS SURFACE FEATURES Blowout Clay spot Gravelly spot Lava flow Marsh or swamp Rock outcrop (includes sandstone and shale) Saline spot Sandy spot Severely eroded spot Slide or slip Sodic spot Spoil area Stony spot Very stony spot Wet spot																																																																																													
STATE COORDINATE TICK <ul style="list-style-type: none"> LAND DIVISION CORNERS (section and land grants) GEOGRAPHIC COORDINATE TICK 		DRAINAGE AND IRRIGATION Double line canal (label) Perennial drainage and/or irrigation ditch Intermittent drainage and/or irrigation ditch		RECOMMENDED AD HOC SOIL SYMBOLS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SYMBOL_ID</th> <th></th> <th>SYMBOL_ID</th> <th></th> </tr> </thead> <tbody> <tr><td>1</td><td>✦</td><td>23</td><td>⊙</td></tr> <tr><td>2</td><td>⊠</td><td>24</td><td>⊙</td></tr> <tr><td>3</td><td>⊠</td><td>25</td><td>⊙</td></tr> <tr><td>4</td><td>⊠ Gray spot</td><td>26</td><td>GSP</td></tr> <tr><td>5</td><td>⊠</td><td>27</td><td>⊙</td></tr> <tr><td>6</td><td>⊠</td><td>28</td><td>⊙</td></tr> <tr><td>7</td><td>⊠ Calcareous spot</td><td>29</td><td>CSP</td></tr> <tr><td>8</td><td>⊠ Muck spot</td><td>30</td><td>MUC</td></tr> <tr><td>9</td><td>⊠</td><td>31</td><td>⊙</td></tr> <tr><td>10</td><td>⊠</td><td>32</td><td>⊙</td></tr> <tr><td>11</td><td>⊠</td><td>33</td><td>⊙</td></tr> <tr><td>12</td><td>DMP</td><td>34</td><td>⊙</td></tr> <tr><td>13</td><td>∪ Mine subsided Area</td><td>35</td><td>MSA</td></tr> <tr><td>14</td><td>∪</td><td>36</td><td>⊙</td></tr> <tr><td>15</td><td>OBS</td><td>37</td><td>⊙</td></tr> <tr><td>16</td><td>∪</td><td>38</td><td>⊙</td></tr> <tr><td>17</td><td>∪</td><td>39</td><td>⊙</td></tr> <tr><td>18</td><td>∪ Glacial Till spot</td><td>40</td><td>GLA</td></tr> <tr><td>19</td><td>∪</td><td>41</td><td>⊙</td></tr> <tr><td>20</td><td>DSS</td><td>42</td><td>⊙</td></tr> <tr><td>21</td><td>∪</td><td>43</td><td>⊙</td></tr> <tr><td>22</td><td>∪</td><td>44</td><td>⊙</td></tr> </tbody> </table>		SYMBOL_ID		SYMBOL_ID		1	✦	23	⊙	2	⊠	24	⊙	3	⊠	25	⊙	4	⊠ Gray spot	26	GSP	5	⊠	27	⊙	6	⊠	28	⊙	7	⊠ Calcareous spot	29	CSP	8	⊠ Muck spot	30	MUC	9	⊠	31	⊙	10	⊠	32	⊙	11	⊠	33	⊙	12	DMP	34	⊙	13	∪ Mine subsided Area	35	MSA	14	∪	36	⊙	15	OBS	37	⊙	16	∪	38	⊙	17	∪	39	⊙	18	∪ Glacial Till spot	40	GLA	19	∪	41	⊙	20	DSS	42	⊙	21	∪	43	⊙	22	∪	44	⊙
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<ul style="list-style-type: none"> Divided roads Other roads Trails 		SMALL LAKES, PONDS, AND RESERVOIRS Perennial water Miscellaneous water Flood pool line		MISCELLANEOUS WATER FEATURES Spring Well, artesian Well, irrigation																																																																																													
ROAD EMBLEMS & DESIGNATIONS <ul style="list-style-type: none"> Interstate Federal State County, farm, or ranch 		MISCELLANEOUS WATER FEATURES																																																																																															
RAILROAD POWER TRANSMISSION LINE (normally not shown) PIPELINE (normally not shown) FENCE (normally not shown) LEVEES Without road With road With railroad Single side slope (showing actual feature location)																																																																																																	
DAMS Medium or small LANDFORM FEATURES Prominent Hill or Peak Soil Sample Site																																																																																																	

* Cultural features for use in Illinois